GYPSUM ASSOCIATION

18th Edition
GA-600-2006

FIRE RESISTANCE DESIGN MANUAL
SOUND CONTROL

GYPSUM SYSTEMS
The Gypsum Association FIRE RESISTANCE DESIGN MANUAL is referenced by the following code and standards writing organizations:

**INTERNATIONAL BUILDING CODE**, published by:
International Code Council, Inc.
5203 Leesburg Pike, Suite 800
Falls Church, Virginia 22041
(Tables 720.1(1), 720.1(2), and 720.1(3))

**BOCA NATIONAL BUILDING CODE**, published by:
Building Officials and Code Administrators International, Inc.
4051 West Flossmoor Road
Country Club Hills, Illinois 60428-5795
(See Chapters 7, 12, and 25, Commentary to the BOCA National Building Code)

**UNIFORM BUILDING CODE**, published by:
International Conference of Building Officials
5360 Workman Mill Road
Whittier, California 90601
(See footnote a, Tables No. 7-A, -B, and -C, and Appendix Section 1209)

**STANDARD BUILDING CODE**, published by:
Southern Building Code Congress International, Inc.
900 Montclair Road
Birmingham, Alabama 35213-1205
(See Section 701.5.2)

**THE NATIONAL FIRE CODES**, published by:
National Fire Protection Association
1 Batterymarch Park
P.O. Box 9101
Quincy, Massachusetts 02269-9101

The FIRE RESISTANCE DESIGN MANUAL is also referenced in the code documents of major jurisdictions in the United States such as Florida, Chicago, Los Angeles, and New York City. In addition, the Manual has been recognized in major jurisdictions in Canada.
# TABLE OF CONTENTS

**FOREWORD**  .................................................................................................................. 3

**TABLE OF CONTENTS**  ................................................................................................. 4

**INTRODUCTION**  ........................................................................................................... 6

**SECTION I - USE OF THIS MANUAL AND GENERAL EXPLANATORY NOTES**  .... 7
  Overview .......................................................................................................................... 7
  Description of Terms ........................................................................................................ 7
  General Explanatory Notes ............................................................................................. 8
  Testing Agencies ............................................................................................................. 10
  Product Identification .................................................................................................... 11
  Abbreviations .................................................................................................................. 11

**SECTION II - REQUIREMENTS FOR FIRE PROTECTION**  ....................................... 12
  Fire Resistant Properties of Gypsum ............................................................................. 12
  Type X Gypsum Board ................................................................................................... 12
  Performance of Gypsum Plaster .................................................................................... 12
  Fire Resistance Tests ...................................................................................................... 13
  Wall and Partition Systems ........................................................................................... 13
  Area Separation Walls (Party/Fire Walls) ...................................................................... 14
  Floor-Ceiling and Roof-Ceiling Systems ....................................................................... 14
  Ceiling Openings .......................................................................................................... 14
  Beam, Girder, and Truss Protection Systems .................................................................. 15
  Continuous Ceiling Protection ....................................................................................... 15
  Individual Encasement Protection .................................................................................. 16
  Column Protection Systems ........................................................................................... 16
  Fire Blocking .................................................................................................................. 17
  Smoke Barriers ................................................................................................................ 17
  Perimeter Relief and Control Joints ................................................................................. 17
  Surface Burning Characteristics ..................................................................................... 18

**SECTION III - SOUND CONTROL**  ................................................................................ 19
  Sound Insulation ............................................................................................................. 19
  Sound Transmission Loss Tests ...................................................................................... 21
  Impact Noise Test .......................................................................................................... 22

**SECTION IV - FIRE RESISTANCE AND SOUND RATED SYSTEMS**  ......................... 24

**INDEX TO SYSTEMS BY STC RATING**  .................................................................... 24

**LISTING OF DELETED SYSTEMS**  ............................................................................. 26

**LISTING OF NEW SYSTEMS**  ....................................................................................... 26

**WALL AND PARTITION SYSTEMS**  .............................................................................. 27
  Walls and Interior Partitions, Noncombustible, 1-HOUR ............................................... 27
  Walls and Interior Partitions, Noncombustible, 2-HOUR ............................................... 36
  Walls and Interior Partitions, Noncombustible, 3-HOUR ............................................... 47
  Walls and Interior Partitions, Noncombustible, 4-HOUR ............................................... 49
  Walls and Interior Partitions, Wood-Framed, 1-HOUR ............................................... 52
  Walls and Interior Partitions, Wood-Framed, 2-HOUR ............................................... 62
  Chase Walls, Noncombustible, 1-HOUR ......................................................................... 65
  Chase Walls, Noncombustible, 2-HOUR ......................................................................... 66
  Chase Walls, Wood-Framed, 1-HOUR ............................................................................ 69
  Chase Walls, Wood-Framed, 2-HOUR ............................................................................ 70
  Movable and Office Partitions, 1-HOUR ........................................................................ 71
  Movable and Office Partitions, 2-HOUR ........................................................................ 74
  Shaft Walls, 1-HOUR ...................................................................................................... 75
  Shaft Walls, 2-HOUR ...................................................................................................... 77
  Shaft Walls, 3-HOUR ...................................................................................................... 83
  Shaft Walls, 4-HOUR ...................................................................................................... 69
Exterior Walls, 1-HOUR ................................................................. 90
Exterior Walls, 2-HOUR ................................................................. 95
Metal Clad Exterior Walls, 1-HOUR .................................................. 99
Metal Clad Exterior Walls, 2-HOUR .................................................. 100
Area Separation Walls (Party/Fire Walls), 2-HOUR ....................... 102
Area Separation Walls (Party/Fire Walls), 3-HOUR ....................... 104

FLOOR-CEILING SYSTEMS ........................................................... 107
Floor-Ceiling Systems, Noncombustible, 1-HOUR ......................... 107
Floor-Ceiling Systems, Noncombustible, 1½-HOUR ....................... 109
Floor-Ceiling Systems, Noncombustible, 2-HOUR ......................... 109
Floor-Ceiling Systems, Noncombustible, 3-HOUR ......................... 111
Floor-Ceiling Systems, Noncombustible, 4-HOUR ......................... 112
Floor-Ceiling Systems, Steel Frame, Wood Floor, 1-HOUR ............. 113
Floor-Ceiling Systems, Steel Frame, Wood Floor, 2-HOUR ............. 115
Floor-Ceiling Systems, Wood-Framed, 1-HOUR .............................. 116
Floor-Ceiling Systems, Wood-Framed, 1½-HOUR ......................... 130
Floor-Ceiling Systems, Wood-Framed, 2-HOUR .............................. 130

ROOF-CEILING SYSTEMS ............................................................ 131
Roof-Ceiling Systems, 1-HOUR ..................................................... 133
Roof-Ceiling Systems, 2-HOUR ..................................................... 135

COLUMN PROTECTION SYSTEMS ................................................. 137
Columns, Noncombustible, 1-HOUR .............................................. 137
Columns, Noncombustible, 2-HOUR .............................................. 140
Columns, Noncombustible, 3-HOUR .............................................. 146
Columns, Noncombustible, 4-HOUR .............................................. 150

BEAM, GIRDER, AND TRUSS PROTECTION SYSTEMS ..................... 152
Beams, Girders and Trusses; Noncombustible, 1-HOUR ................. 152
Beams, Girders and Trusses; Noncombustible, 2-HOUR ................. 152
Beams, Girders and Trusses; Noncombustible, 3-HOUR ................. 153
Beams, Girders and Trusses; Noncombustible, 4-HOUR ................. 154

APPENDIX .................................................................................. 155
Commonly Used Metric Conversions ............................................. 155
INTRODUCTION

NOTE: This Introduction constitutes an essential part of the system descriptions contained in Section IV. It is important that the user be familiar with this introductory material.

This Manual is a convenient and useful specification aid for anyone concerned with the design, construction, or inspection of fire resistive and sound control systems. Design information is quickly and easily determined. Comparison of these characteristics allows the user to be more accurate in meeting design and code requirements. The data provided are especially useful to builders, architects, code officials, fire service, and insurance personnel.

The systems in this Manual utilize gypsum products to provide fire resistance to walls, partitions, floor-ceilings, roof-ceilings, columns, beams, girders, and trusses. Systems are classified according to their typical uses and their fire-resistance ratings. Walls, partitions, and floor-ceiling systems are further classified by Sound Transmission Class (STC) or Field Sound Transmission Class (FSTC). The Impact Insulation Class (IIC) is included for many wood-framed floor-ceiling systems.

The word "proprietary" appears in system descriptions either the system or one or more of its components is considered proprietary. Each proprietary system shall be built utilizing the components specified by the company or companies listed under the detailed description for that system. All other systems are generic. Generic systems are applicable to the products of any manufacturer, whether a member of the Gypsum Association or not. Provided these products meet the appropriate standards listed in Section I, and, when applicable, the requirements set forth in Section II.

To maintain industry-wide quality assurance standards for gypsum board defined in this Manual as "type X," the Gypsum Association requires that all companies listing proprietary tests or systems, or relying on the generic systems in this manual, shall subscribe to an on-going third-party, in-plant product inspection and labeling service. Additionally, each member company makes annual written certification to the Gypsum Association that its products manufactured for use in systems listed in this Manual continue to be inspected and labeled by an independent third-party testing service as listed on page 10.

Fire-resistance ratings, STCs, FSTCs, and IICs are the results of tests conducted on systems composed of specific materials put together in a specified manner. Substitution of other materials or deviation from the specified construction could adversely affect performance. For example, if batt or blanket insulation is shown, then it is the required component of the system. In each system containing batt or blanket insulation the insulation is specified to be either mineral or glass fiber and, for fire resistance, the system shall be constructed using the type specified.

Mineral fiber or glass fiber shall not be arbitrarily added to floor-ceiling or roof-ceiling systems to increase either STCs or R-values. This practice has been shown to reduce the fire-resistance rating. The addition of up to 16% inches of 0.5 pcf glass fiber insulation (R-40), either batt or loose-fill, to any 1- or 2-hour fire resistance rated floor-ceiling or roof-ceiling system having a cavity deep enough to accept the insulation is permitted provided that one additional layer of either ½ inch or ¾ inch type X gypsum board is applied to the ceiling. The additional layer of gypsum board shall be applied as described for the face layer of the tested system except that the fastener length shall be increased by not less than the thickness of the additional layer of gypsum board.

The detailed descriptions for the systems included in this Manual are summaries. For complete information on the systems or components tested, the listing or test report should be reviewed. Details regarding generic systems may be requested from the Gypsum Association; details on proprietary systems are available from the companies listed for those systems.

For information on limiting heights of nonload-bearing steel stud walls and partitions see ASTM C 754, Standard Specification for Installation of Steel Framing Members to Receive Screw Attached Gypsum Panel Products, or steel stud manufacturer's literature.

References to ASTM standards, CAN/ULC standards, or other standards refer to the respective standard in effect on the date that the test was performed. Each test reference contains the test report date.

The information in this Manual is based on characteristics, properties, and performance of materials and systems obtained under controlled test conditions as set forth in the appropriate standards in effect at the time of the test. The Gypsum Association and its member companies make no warranties or other representations as to the characteristics, properties, or performance of any materials or systems in actual construction. No warranty or representation is made that any material or component of any system, other than the gypsum material used in such system, conforms to any standard or standards.
SECTION I - USE OF THIS MANUAL AND GENERAL EXPLANATORY NOTES

OVERVIEW

The systems are divided into five major categories and listed in the Table of Contents on pages 4 an 5 under these headings:
- Wall and Partition Systems
- Floor-Ceiling Systems
- Roof-Ceiling Systems
- Column Protection Systems
- Beam, Girder, and Truss Protection Systems

In the case of walls and partitions, floor-ceilings, and roof-ceilings, noncombustible systems are listed first, followed by wood-framed systems. They are further subdivided by fire-resistance rating starting with one hour and increasing. STCs (or FSTCs) are listed in descending order. Where sound test data are not available, estimated STCs are based on evaluations of similar systems for which test data are available.

Each system has been assigned a reference number - the GA File Number. Cite this GA File Number in specifications and on plans, or when making inquiries about specific systems.

All system descriptions contain a brief list of the major components of the system followed by a more detailed description. The detailed descriptions of interior systems begin with the material exposed to the test fire and its method of attachment, followed by a description of framing members and their methods of installation. Finally, the unexposed side and its method of attachment is described.

Where unsymmetrical systems were tested from one side only, the side exposed to the test fire is indicated by the words "Fire Side" on the system detail. When documentation is available to show that the wall was tested with the least fire-resistive side exposed to the test fire, the wall need not be subjected to tests from the opposite side and a "Fire Side" is not specified. All floor-ceiling and roof-ceiling systems were tested with fire exposure on the ceiling side.

When mineral or glass fiber insulation was a basic component of a fire tested system, it is included in the description as an integral part of the system. The insulation thickness, type, and density are described, and both the fire and sound details show fibrous insulation. If the insulation was used solely to increase the STC, the fibrous insulation is shown only in the sound detail. When the insulation is not needed for the fire-resistance rating, but is used to improve the STC of the system, the last sentence of the detailed description states, "Sound tested with [mineral] [glass] fiber insulation." (See General Explanatory Notes 10, 11, and 12 on page 8.)

Unless otherwise noted, all load-bearing wood stud systems were tested while being subjected to the maximum load allowed by design under nationally recognized design criteria at the time of the test. Due to an increase in the maximum allowable loading in the National Design Specifications (1982 and later editions), the American Forest and Paper Association issued the following statement:

Where a load-bearing fire rated wood stud wall assembly contained in this Manual is specifically designed for structural capacity, the design value in compression parallel to grain adjusted for slenderness ratio (F_C') used in such analysis shall be taken as 78 percent of the maximum F_C' value determined in accordance with normal design practice but shall not exceed 76 percent of the F_C' value for such member having a slenderness ratio (l/rd) of 33.

DESCRIPTION OF TERMS USED IN THIS MANUAL

Gypsum Board - defined in ASTM C 11, Standard Terminology Relating to Gypsum and Related Building Materials and Systems, as the generic name for a family of sheet products consisting of a noncombustible core primarily of gypsum with paper surfacing. Gypsum board may be further described as follows:
- Regular Gypsum Board - a gypsum board with naturally occurring fire resistance from the gypsum in the core; or
- Type X Gypsum Board - a gypsum board with special core additives to increase the natural fire resistance of regular gypsum board.

Limited Load-Bearing - this means that a constant superimposed load was applied to the test specimen throughout the fire test to simulate a design load less than 70% of the maximum allowable design load.

Load-Bearing - unless otherwise noted in the detailed description, this means that a constant superimposed load was applied to the test specimen throughout the fire test to simulate 78% or more of the maximum allowable design load.

Mineral Fiber - refers to either rock or slag wool products.

Metal Studs - refers to nominal 25 gage steel studs and runners (track) manufactured to comply with ASTM C 645 unless otherwise specified in the detailed description.

(NLB) - non-load-bearing.

NOTE: Where the word "proprietary" appears in system descriptions either the system or one or more of its components is considered proprietary. Each proprietary system shall be built utilizing the components specified by the company or companies listed under the detailed description for that system.
GENERAL EXPLANATORY NOTES


2. Nails shall comply with ASTM F 547 or ASTM C 514. Other nails, suitable for the intended use, and having dimensions not less than those specified in this Manual shall be permitted as substitutions.

3. Fasteners installed along the edges of gypsum board shall be placed along the paper bound edges on the long dimension of the board. Fasteners at the end shall be placed along mill or field cut ends on the short dimension. Fasteners on the perimeter of the board shall be placed along both edges and ends.

4. Screws meeting ASTM C 1002 shall be permitted to be substituted for the prescribed nails, one for one, when the length and head diameter of the screws equal or exceed those of the nails specified in the tested system and the screw spacing does not exceed the spacing specified for the nails in the tested system.

5. Vertically applied gypsum board shall have the edges parallel to framing members. Horizontally applied gypsum board shall have the edges at right angles to the framing members. Intermediate vertical framing members are those between the vertical edges or ends of the board.

6. Unless otherwise specified, the face layers of all systems, except those with predecorated or metal covered surfaces, shall have joints taped (minimum Level 1 as specified in GA-214, Recommended Levels of Gypsum Board Finish) and fastener heads treated. Base layers in multi-layer systems shall not be required to have joints or fasteners taped or covered with joint compound.

7. When a fire-resistance rated partition extends above the ceiling, the gypsum board joints occurring above the ceiling need not be taped and fasteners need not be covered when all of the following conditions are met.
   a. The ceiling is part of a fire-resistance rated floor-ceiling or roof-ceiling system;
   b. All vertical joints occur over framing members;
   c. Horizontal joints are either staggered 24 inches o.c. on opposite sides of the partition, or are covered with strips of gypsum board not less than 6 inches wide; or the partition is a two-ply system with joints staggered 16 inches or 24 inches o.c.; and
   d. The partition is not part of a smoke or sound control system.

Where joint treatment is discontinued at or just above the ceiling line, the vertical joint shall be cross taped at this location to reduce the possibility of joint cracking.

8. Metallic outlet boxes shall be permitted to be installed in wood and steel stud walls or partitions having gypsum board facings and classified as two hours or less. The surface area of individual boxes shall not exceed 16 square inches. The aggregate surface area of the boxes shall not exceed 100 square inches in any 100 square feet. Boxes located on opposite sides of walls or partitions shall be in separate stud cavities and shall be separated by a minimum horizontal distance of 24 inches. Approved nonmetallic outlet boxes shall be permitted as allowed by local code.

9. Water-resistant gypsum backing board shall be installed over or as part of the fire-resistance rated system in shower and tub areas to receive ceramic or plastic wall tile or plastic finished wall panels. When fire or sound ratings are necessary, the gypsum board required for the rating shall extend down to the floor behind fixtures so that the construction will equal that of the tested system. (See Figure 1 on page 8.)

Note: The use of water-resistant gypsum backing board as a base for tile in wet areas is regulated by local codes. Consult local building codes for requirements.

10. When not specified as a component of a fire tested wall or partition system, mineral fiber, glass fiber, or cellulose fiber insulation, of a thickness not exceeding that of the stud depth shall be permitted to be added within the stud cavity.

11. In floor-ceiling or roof-ceiling systems, the addition or deletion of mineral or glass fiber insulation in ceiling joist spaces could possibly reduce the fire-resistance rating. The addition of up to 16 3/4 inches of 0.5 pcf glass fiber insulation (R-40), either batt or loose-fill, to any 1- or 2-hour fire resistance rated floor-ceiling or roof-ceiling system having a cavity deep enough to accept the insulation is permitted provided that one additional layer of either 1/2 inch type X or 5/8 inch type X gypsum board is applied to the ceiling. The additional layer of gypsum board shall be applied as described for the face layer of the tested system except that the fastener length shall be increased by not less than the thickness of the additional layer of gypsum board.

12. In each system containing batt or blanket insulation the insulation is specified to be either mineral or glass fiber and, for fire resistance, the system shall be built using the type specified.

13. Although the systems are arranged in general groupings (i.e., walls and interior partitions, floor-ceilings, roof-ceilings, etc.), this is not intended to limit their use only to the specific category in which they are listed. For example, systems listed as shaft walls shall be permitted to be used as interior partitions. However, systems tested vertically (walls
and partitions) shall not be permitted to be arbitrarily used in a horizontal orientation.

14. Metal studs and runners are nominal 25 gage unless otherwise specified.

15. Greater stud sizes (depths) shall be permitted to be used in metal- or wood-stud systems. Metal studs of heavier gage than those tested shall be permitted. The assigned rating of any load-bearing system shall also apply to the same system when used as a nonload-bearing system. Indicated stud spacings are maximums.

16. Specified floor-ceiling and roof-ceiling framing sizes or truss dimensions are minimums. Greater joist or truss sizes (depths) shall be permitted to be used in metal- or wood-framed systems. Indicated joist and truss spacings are maximums.

17. Within design limitations, the distance between parallel rows of studs, such as in a chase wall, shall be permitted to be increased beyond that tested. When stud cavities in walls constructed of parallel rows of steel studs exceed 9½ inches and cross bracing is required the cross bracing shall be fabricated from steel studs.

18. Systems tested with metal furring channels attached directly to the bottom chords of steel beams, bar joists, or wood trusses or framing shall be permitted to be suspended. Generally, furring channels are attached to ½ inch cold rolled carrying channels 48 inches o.c. suspended from joists by 8 gage wire hangers spaced not greater than 48 inches o.c.

19. Floor-ceiling and roof-ceiling systems were fire tested at less than 36 inches total depth. However, the total depth of the systems, with either directly attached or suspended ceiling membranes, shall be permitted to extend greater than 36 inches.

20. Where laminating compound is specified, taping, all-purpose, and setting type joint compounds shall be permitted.

21. Additional layers of type X or regular gypsum board shall be permitted to be added to any system.

22. When not specified as a component of a fire-resistance rated wall or partition system, wood structural panels shall be permitted to be added to one or both sides. Such panels shall be permitted to be applied either as a base layer directly to the framing (under the gypsum board), as a face layer (over the face layer of gypsum board), or between layers of gypsum board in multi-layer systems. When such panels are applied under the gypsum board or between layers of gypsum board the length of the fasteners specified for the attachment of the gypsum board applied over the wood structural panels shall be increased by not less than the thickness of the wood structural panels. Fastener spacing for the gypsum board and the number of layers of gypsum board shall be as specified in the system description.

23. Each proprietary system lists specific products that are acceptable for use in the specific system in which they are listed. Consult the manufacturer for information on additional proprietary products that are suitable for use in specific proprietary systems.

![Figure 1](image_url)

**Figure 1**
Section Through Typical One-Hour System
TESTING AGENCIES

Each detailed description is accompanied by a cross-section detail of the system. Also included is design information giving total thickness, limiting height where appropriate, and approximate weight of the system in pounds per square foot. Fire and sound test references identifying the agency which certified the test as well as a report number and date are also provided (see Tables I and II).

<table>
<thead>
<tr>
<th>TABLE I</th>
<th>FIRE TESTING AGENCIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMS</td>
<td>Building Materials &amp; Structures, National Bureau of Standards (now National Institute of Standards and Technology)</td>
</tr>
<tr>
<td>CTC</td>
<td>Commercial Testing Company</td>
</tr>
<tr>
<td>FM</td>
<td>Factory Mutual Research Corporation</td>
</tr>
<tr>
<td>GET</td>
<td>George E. Troxell, P.E., Consulting Engineer</td>
</tr>
<tr>
<td>ITS</td>
<td>Intertek Testing Services NA Inc.</td>
</tr>
<tr>
<td>NBS</td>
<td>National Bureau of Standards (now National Institute of Standards and Technology)</td>
</tr>
<tr>
<td>NRCC</td>
<td>National Research Council of Canada</td>
</tr>
<tr>
<td>OPL</td>
<td>Omega Point Laboratories, Inc.</td>
</tr>
<tr>
<td>OSU</td>
<td>The Ohio State University</td>
</tr>
<tr>
<td>PCA</td>
<td>Portland Cement Association</td>
</tr>
<tr>
<td>SPT</td>
<td>Standard Fire Test, Fire Prevention Research Institute</td>
</tr>
<tr>
<td>SWRI</td>
<td>Southwest Research Institute</td>
</tr>
<tr>
<td>UC</td>
<td>University of California</td>
</tr>
<tr>
<td>UL</td>
<td>Underwriters Laboratories Inc.</td>
</tr>
<tr>
<td>ULC</td>
<td>Underwriters' Laboratories of Canada</td>
</tr>
<tr>
<td>WHI</td>
<td>Warnock Hersey, Inc. (now Intertek Testing Services NA Inc.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE II</th>
<th>SOUND TESTING AGENCIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACI</td>
<td>Acoustical Consultants, Inc.</td>
</tr>
<tr>
<td>ASL</td>
<td>Acoustic Systems Acoustical Research Facility</td>
</tr>
<tr>
<td>BBN</td>
<td>Bolt, Beranek, and Newman, Inc.</td>
</tr>
<tr>
<td>BGL</td>
<td>British Gypsum Limited</td>
</tr>
<tr>
<td>BMS</td>
<td>Building Materials &amp; Structures, National Bureau of Standards (now National Institute of Standards and Technology)</td>
</tr>
<tr>
<td>CK</td>
<td>Cedar Knolls Acoustical Laboratories (now Noise Unlimited, Inc.)</td>
</tr>
<tr>
<td>DRC</td>
<td>Domtar Research Center</td>
</tr>
<tr>
<td>G&amp;H</td>
<td>Geiger and Hamme</td>
</tr>
<tr>
<td>INTEST</td>
<td>International Acoustical Testing Laboratories</td>
</tr>
<tr>
<td>KAL</td>
<td>Kodara Acoustical Laboratories (now Electrical Testing Laboratories, ETL)</td>
</tr>
<tr>
<td>KG</td>
<td>Kaiser Acoustical Laboratories</td>
</tr>
<tr>
<td>NBS</td>
<td>National Bureau of Standards (now National Institute of Standards and Technology)</td>
</tr>
<tr>
<td>NGC</td>
<td>National Gypsum Company's Gold Bond Acoustical Laboratories (now NGC Testing Services)</td>
</tr>
<tr>
<td>NRCC</td>
<td>National Research Council of Canada</td>
</tr>
<tr>
<td>OR</td>
<td>Ohio Research Corporation</td>
</tr>
<tr>
<td>RAL</td>
<td>Riverbank Acoustical Laboratories</td>
</tr>
<tr>
<td>SA</td>
<td>Shiner &amp; Associates</td>
</tr>
<tr>
<td>USG</td>
<td>USG Research &amp; Technology Center</td>
</tr>
<tr>
<td>WEAL</td>
<td>Western Electro Acoustical Laboratory, Inc.</td>
</tr>
<tr>
<td>WHI</td>
<td>Warnock Hersey, Inc. (now Intertek Testing Services NA Inc.)</td>
</tr>
</tbody>
</table>
PRODUCT IDENTIFICATION

All gypsum products are identified with the manufacturer's name and trademark. The thickness and type of gypsum board are shown on the end bundling tape or on the board. Ready-mixed joint compounds are identified on the container. Bagged products are identified on the bag.

ASTM standard product specifications are shown in Table III.

<table>
<thead>
<tr>
<th>TABLE III</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLICABLE ASTM PRODUCT STANDARDS</td>
</tr>
<tr>
<td>Product</td>
</tr>
<tr>
<td>Gypsum Board</td>
</tr>
<tr>
<td>Gypsum Wallboard</td>
</tr>
<tr>
<td>Predecorated Gypsum Board</td>
</tr>
<tr>
<td>Gypsum Lath</td>
</tr>
<tr>
<td>Gypsum Sheathing Board</td>
</tr>
<tr>
<td>Gypsum Backing Board</td>
</tr>
<tr>
<td>Gypsum Coreboard</td>
</tr>
<tr>
<td>Gypsum Sheathliner Board</td>
</tr>
<tr>
<td>Water-Resistant Gypsum Backing Board</td>
</tr>
<tr>
<td>Gypsum Ceiling Board</td>
</tr>
<tr>
<td>Exterior Gypsum Sheath Board</td>
</tr>
<tr>
<td>Gypsum Base for Veneer Plasters</td>
</tr>
<tr>
<td>Glass Mat Gypsum Substrate for Use as Sheathing</td>
</tr>
<tr>
<td>Glass Mat Water-Resistant Gypsum Backing Panel</td>
</tr>
<tr>
<td>Fiber Reinforced Gypsum Panels</td>
</tr>
<tr>
<td>Joint Compound</td>
</tr>
<tr>
<td>Gypsum Plasters</td>
</tr>
<tr>
<td>Gypsum Veneer Plaster</td>
</tr>
<tr>
<td>Metal Lath</td>
</tr>
<tr>
<td>Accessories for Gypsum Wallboard and Gypsum Veneer Base</td>
</tr>
<tr>
<td>Nails for the Application of Gypsum Board</td>
</tr>
<tr>
<td>Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases (Types G, W, and S)</td>
</tr>
<tr>
<td>Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness (Type S-12)</td>
</tr>
<tr>
<td>Nonstructural Steel Framing Members</td>
</tr>
<tr>
<td>Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Panel Products and Metal Plaster Bases</td>
</tr>
</tbody>
</table>

* ASTM Specification C 1396 is a consolidation of previous ASTM Standards C 38, C 97, C 79, C 442, C 588, C 630, C 831, C 960, and C 1395, which have been withdrawn.

ABBREVIATIONS

Abbreviations used in this Manual are shown in Table IV (also see Tables I and II on page 10).

<table>
<thead>
<tr>
<th>TABLE IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABBREVIATIONS</td>
</tr>
<tr>
<td>ASTM</td>
</tr>
<tr>
<td>C&amp;P</td>
</tr>
<tr>
<td>dB</td>
</tr>
<tr>
<td>dia</td>
</tr>
<tr>
<td>DOC</td>
</tr>
<tr>
<td>est</td>
</tr>
<tr>
<td>FSTC</td>
</tr>
<tr>
<td>FSTL</td>
</tr>
<tr>
<td>ft</td>
</tr>
<tr>
<td>ga</td>
</tr>
<tr>
<td>galv</td>
</tr>
<tr>
<td>Hz</td>
</tr>
<tr>
<td>hr</td>
</tr>
<tr>
<td>IIC</td>
</tr>
<tr>
<td>in.</td>
</tr>
<tr>
<td>lab</td>
</tr>
<tr>
<td>lb</td>
</tr>
<tr>
<td>mfr</td>
</tr>
<tr>
<td>mm</td>
</tr>
<tr>
<td>min</td>
</tr>
<tr>
<td>nom</td>
</tr>
<tr>
<td>NLB</td>
</tr>
<tr>
<td>o.c.</td>
</tr>
<tr>
<td>oz</td>
</tr>
<tr>
<td>pcf</td>
</tr>
<tr>
<td>psf</td>
</tr>
<tr>
<td>rev</td>
</tr>
<tr>
<td>sq</td>
</tr>
<tr>
<td>STC</td>
</tr>
<tr>
<td>STL</td>
</tr>
<tr>
<td>T&amp;G</td>
</tr>
</tbody>
</table>

NOTE:

ASTM Standards are available from:
ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
(610) 832-9585
Fax: (610) 832-9555
E-mail: service@astm.org
Website: http://www.astm.org
SECTION II - REQUIREMENTS FOR FIRE PROTECTION

FIRE RESISTIVE PROPERTIES OF GYPSUM

Gypsum is approximately 21 percent by weight chemically combined water which greatly contributes to its effectiveness as a fire resistive barrier. When gypsum board or gypsum plaster is exposed to fire, the water is slowly released as steam, effectively retarding heat transmission (Figure 2). It can, in a sense, be compared to what happens when a blowtorch is turned on a block of ice. Although the ice is being melted, one can hold a hand on the opposite side without being burned. Even though the ice gets very thin it effectively blocks the transfer of the intense heat and one's hand would not be burned until the ice is melted.

When gypsum-protected wood or steel structural members are exposed to a fire, the chemically combined water (being released as steam) acts as a thermal barrier until this slow process, known as calcination, is completed. The temperature directly behind the plane of calcination is only slightly higher than that of boiling water (212°F), which is significantly lower than the temperature at which steel begins losing strength or wood ignites. Once calcination is complete, the in-place calcined gypsum continues to act as a barrier protecting the underlying structural members from direct exposure to flames.

TYPE X GYPSUM BOARD

ASTM C 1396 describes two types of gypsum board - regular and type X - each providing a different degree of fire resistance. Where fire-resistance rated systems are specified, type X gypsum board is typically required to achieve the rating. Type X gypsum board is defined in ASTM C 1396 as gypsum board that provides not less than one-hour fire resistance for boards ½ inch thick or not less than ½-hour fire-resistance rating for boards ½ inch thick, applied parallel with and on each side of load bearing 2x4 wood studs spaced 16 inches on center with 6d coated nails, ½ inch long, 0.095 inch diameter shank, ¼ inch diameter heads, spaced 7 inches on center with gypsum board joints staggered 16 inches on each side of the partition and tested in accordance with the requirements of ASTM E 119.

In order to qualify for use in generic systems contained in this Manual, the Gypsum Association also requires that ½ inch type X gypsum board shall achieve a one-hour fire-resistance rating when applied to a floor-ceiling system as described by GA File Number FC 5410 on page 124.

Where ¾ inch or 1 inch gypsum board is described as "type X" in proprietary systems contained in this Manual, consult the manufacturer to determine what specific products are required.

PERFORMANCE OF GYPSUM PLASTER

Job performance of gypsum plaster systems can be affected by several factors such as: extreme weather conditions, poor or no ventilation, thermal shock, unusual framing or frame loading, etc. Precautions shall be taken to prevent these and other adverse conditions.

Mix ratios such as 1:2 gypsum-perlite, -vermiculite, or -sand are used to describe a mixture consisting of 100 pounds of gypsum plaster to 2 cubic feet of

![Diagram of how gypsum retards heat transmission](image)

Figure 2
How Gypsum Retards Heat Transmission
aggregate (3 cubic feet where the ratio is given as 1:3). Many fire tests have been conducted to show that 1:2 gypsum-vermiculite mix may be substituted for 1:3 gypsum-vermiculite mix in all fire-resistance rated systems. A 1:2 gypsum-perlite mix may be substituted for 1:3 gypsum-perlite mix in one-hour and two-hour rated systems only. Perlite and vermiculite shall be permitted to be interchanged in one-hour and two-hour rated systems.

Plaster thicknesses are measured from the face of the lath, regardless of the plaster base used.

FIRE RESISTANCE TESTS

All fire-resistance classifications described in this Manual are derived from full-scale fire tests conducted in accordance with the requirements of ASTM E 119 or CAN/ULC-S101 (as amended and in effect on the date of the test) by recognized independent laboratories. Fire-resistance classifications are the results of tests conducted on systems made up of specific materials put together in a specified manner.

There are a number of nationally recognized laboratories capable of conducting tests to establish fire-resistance classifications according to the procedures outlined in ASTM E 119 or CAN/ULC-S101. The conditions under which tests are conducted are thoroughly detailed and the fire-resistance classification is established as the time at which there is excessive temperature rise, passage of flame, or structural collapse. In addition, failure may result because of penetration by the pressurized hose stream required in the fire test procedure for walls.

With reference to all tested systems, ASTM E 119 states:

It is the intent that classifications shall register performance during the period of exposure and shall not be construed as having determined suitability for use after fire exposure.

Comprehensive research by fire protection experts has determined the average combustible content normally present within any given occupancy. In addition, evacuation times, the time required for the contents to be consumed by fire, and the resulting temperature rise have been quantified. Fire-resistance requirements are established accordingly in building codes and similar regulations.

In ASTM E 119 fire tests, wall, ceiling, column, and beam systems are exposed in a furnace which reaches the indicated average temperatures at the time stated in the standard time-temperature curve (Figure 3) and Appendix X1 of ASTM E 119. The unexposed surface of all systems refers to the surface away from the fire during a test. The exposed surface refers to the surface facing the fire.

WALL AND PARTITION SYSTEMS

All walls and partitions tested and classified are required to be at least 100 square feet in area with no edge dimension less than nine feet. Surface temperatures on the unexposed side of the test specimen are measured at a minimum of nine locations.

When load-bearing walls and partitions are tested, the applied load is required to simulate the working stresses of the design.

Walls and partitions are required to stop flame or hot gases capable of igniting cotton waste. The average temperature of the unexposed surface is not permitted to increase more than 250°F above ambient nor is any individual thermocouple permitted to rise more than 325°F above ambient. A duplicate of the system (rated for one-hour fire resistance or more) is fire tested for one-half the specified fire-resistance period, but no longer than one-hour, after which it is required to withstand the impact, erosion, and cooling effect of a hose stream.

Openings in walls for fire door frames and fire window frames shall be coordinated between the architect, the general contractor, the drywall contractor, and the frame supplier to ensure that installation details for the wall and the frame are considered. The installation instructions supplied with frames vary and shall be followed to comply with local code requirements. All fire door and fire window assemblies are required to be installed in accordance with ANSI/ULFPA 80 and subject also to the conditions, limitations, and/or allowances of their certification label and listing.

Figure 3
Standard Time-Temperature Curve
(ASTM E 119)
AREA SEPARATION WALLS (PARTY/FIRE WALLS)

Fire-resistance rated gypsum board systems (solid and cavity types) can serve as area separation walls (also known as party walls or fire walls) between adjacent wood frame and steel frame dwelling units such as townhouses, condominiums, and apartments, and in commercial and institutional buildings. These walls are erected one floor at a time, beginning at the foundation and continuing up to or through the roof. At intermediate floors metal floor-ceiling track shall be installed back-to-back to secure the top of the lower section of the partition to the bottom of the next section being installed.

At intermediate floors and other specified locations the area separation walls shall be attached to adjacent wood or steel framing on each side with aluminum clips that soften when exposed to fire (Figure 4). If one side of the structure becomes involved in a fire, the clips on the fire side allow collapse of the structure on that side. The clips on the other side support the area separation wall keeping it in place, thereby protecting the adjacent structure. Consult gypsum board manufacturer for clip detail, placement, and height limitations.

FLOOR-CEILING AND ROOF-CEILING SYSTEMS

Floor-ceiling and roof-ceiling systems tested and classified are required to be a minimum of 180 square feet in area with their shortest edge dimension not less than 12 feet. The system is required to sustain the design load throughout the test and not permit the passage of either flame or hot gases capable of igniting cotton waste. Surface temperatures on the unexposed side of the test specimen are measured at a minimum of nine locations. The average temperature of the unexposed surface is not permitted to increase more than 250°F above ambient nor is any individual thermocouple permitted to rise more than 325°F above ambient.

Ceiling Openings

Many fire-resistance rated floor-ceiling systems have been tested with openings through the ceiling membrane for air ducts, electrical outlets, and lighting fixtures.

Building codes permit air duct openings in most ceiling systems when the air duct openings are protected with approved ceiling dampers.

Building codes also permit membrane penetrations in maximum two-hour fire-resistance-rated horizontal systems by steel outlet boxes that do not exceed 16 square inches in area provided the aggregate area of such penetrations does not exceed 100 square inches in any 100 square feet of ceiling area and the annular space between the ceiling membrane and the box does not exceed 1/8 inch.

Many approved recessed lighting fixtures require special protection. Consult the fire test report or listing for the specific system for protection details and the opening area limitation.

---

Figure 4
Typical Gypsum Board Area Separation Wall Construction
BEAM, GIRDER, AND TRUSS PROTECTION SYSTEMS

Beams are tested with superimposed loads applied to simulate the maximum theoretical dead and live loads permitted by nationally recognized design standards. A fire-resistance rating is established for a system when the test specimen supports the load during the test and meets specific temperature requirements for the prescribed period. Beams, girders, and trusses shall be protected by either (1) a continuous ceiling membrane of either gypsum lath and plaster or gypsum board or (2) enclosing them individually.

Continuous Ceiling Protection

Building codes allow for the use of the gypsum board or gypsum lath and plaster ceilings described in the Floor-Ceiling Systems portion of this Manual for beam or girder protection. The complete floor-ceiling system shall provide no less than the rating required for the structural member being protected.

If the bottom of the beam projects 6 inches or less below the plane of the ceiling, the ceiling is turned down and around the beam (Figure 5). If the projection is greater than 6 inches, the gypsum board or lath and plaster beam protection system shall extend from the ceiling to the floor above. (See Individual Encasement Protection.)

A ceiling used as membrane fireproofing usually consists of either gypsum board or gypsum plaster over gypsum or metal lath. These systems may be either attached directly to or suspended from the primary structural elements. The tested assembly consists of the ceiling membrane, beams, girders, joists, or trusses and the floor or roof deck system above.

Individual Encasement Protection

Individual encasement of beams, girders, and trusses with gypsum lath and plaster or gypsum board (Figure 6) is permitted where one or more of the following conditions exist.

1. When the fire-resistance requirement for the beam, girder, or truss is greater than the fire-resistance requirement for the floor-ceiling or roof-ceiling system being supported. Where there are relatively few three-hour or four-hour protected beams or girders, and only a two-hour floor-ceiling requirement, it is generally uneconomical to use a three-hour or four-hour floor-ceiling system throughout, or

2. When either no ceiling is required or a non-rated ceiling is used, or

3. When the bottom of the beam projects greater than 6 inches below the plane of the ceiling.

When structural members support more than one floor, or a floor and a roof, consult local building codes for requirements.
COLUMN PROTECTION SYSTEMS

Columns are tested under a temperature limit criteria. The temperature of the steel is measured by not less than four thermocouples at each of four levels. A test is successful when the average temperature of any level does not exceed 1000°F and no individual thermocouple exceeds 1200°F within the prescribed time period.

All column systems in this Manual were tested with the column size specified in the system. Fire-resistance ratings for the heavier steel columns are not applicable to the lighter steel columns.

Typical column protection systems are shown in Figures 7 and 8.

Figure 7
Column Protection - Gypsum Board or Veneer Base

Figure 8
Column Protection - Metal Lath and Plaster
FIRE BLOCKING

All fire-resistive systems shall be fire blocked in accordance with applicable code requirements.

All penetrations in a fire rated system shall be filled with firestopping material as required by the local code.

SMOKE BARRIERS

Building codes require certain designated wall and ceiling systems to function as "smoke barriers" which are defined in the codes as continuous membranes that resist the passage of smoke. Fire-resistive gypsum systems with perimeters and penetrations sealed to achieve listed STCs also function to resist the passage of smoke.

Minimum one-hour fire-resistance rated gypsum board systems with joints finished in accordance with Level 1 as specified in GA-214, Recommended Levels of Gypsum Board Finish, (all joints and interior angles shall have tape embedded in joint compound) with perimeters and penetrations sealed with an approved sealant satisfy building code requirements for a smoke barrier.

PERIMETER RELIEF AND CONTROL JOINTS

Engineering studies and fire tests have been conducted on perimeter relief and control joint systems. This research demonstrates that the perimeter relief systems detailed in Figure 9 can be used in most non-load-bearing metal stud partition systems without reducing the fire-resistance rating of the partition. The research also demonstrates that the control joint systems detailed in Figure 10 on page 18 can be used in all one-hour or two-hour, load-bearing or non-load-bearing, wood or steel framed, wall and partition systems in this Manual without adversely affecting the fire-resistance rating. The tests were conducted in accordance with ASTM E 119 and utilize perimeter relief systems and control joint systems as detailed herein. Other similar systems are available from individual manufacturers.
SURFACE BURNING CHARACTERISTICS

The test method used to establish surface burning characteristics is ASTM E84 or CAN/ULC-S102, commonly referred to as the Tunnel Test. This test measures the relative flame spread and relative amount of smoke generated by the material being tested when compared to inorganic reinforced cement board and red oak flooring. Table V lists typical surface burning characteristics for gypsum products as well as the standard materials referenced in the test method.

Surface burning characteristics are intended to be used as a guide in the selection and use of interior finish materials and are obtained under controlled laboratory conditions.

<table>
<thead>
<tr>
<th>TABLE V</th>
<th>SURFACE BURNING CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAME SPREAD</td>
<td>SMOKE DEVELOPED</td>
</tr>
<tr>
<td>Inorganic Reinforced Cement Board</td>
<td>0</td>
</tr>
<tr>
<td>Gypsum Plaster</td>
<td>0</td>
</tr>
<tr>
<td>Glass Mat Gypsum Substrate for Use as Sheathing</td>
<td>0</td>
</tr>
<tr>
<td>Fiber Reinforced Gypsum Panels</td>
<td>5</td>
</tr>
<tr>
<td>Gypsum Lath</td>
<td>10</td>
</tr>
<tr>
<td>Gypsum Wallboard</td>
<td>15</td>
</tr>
<tr>
<td>Gypsum Sheathing</td>
<td>15</td>
</tr>
<tr>
<td>Water-Resistant Gypsum Backing Board</td>
<td>15</td>
</tr>
<tr>
<td>Red Oak</td>
<td>100</td>
</tr>
</tbody>
</table>
SECTION III - SOUND CONTROL

SOUND INSULATION

The first essential for airborne sound insulation using any system is to close off air leaks and/or flanking paths by which noise can go through or around the system. Small cracks or holes will increase the sound transmission at the higher frequencies. This can have a detrimental effect on the overall acoustical performance and the STC, particularly for higher rated systems. Failure to observe special construction and design precautions can reduce the effectiveness of the best planned sound control methods.

Systems shall be airtight. Recessed wall fixtures, such as medicine cabinets or electrical, telephone, television, and intercom outlets, that penetrate the gypsum board shall not be located back-to-back or in the same stud cavity. Any opening for fixtures or pipes shall be cut to the proper size and sealed. The entire perimeter of a sound insulating system shall be made airtight to prevent sound flanking. Flexible sealant or an acoustical gasket shall be used to seal between the STC rated system and all dissimilar surfaces and also between the system and similar surfaces where perimeter relief is required. TAPPING GYPSUM BOARD WALL AND WALL-CEILING INTERSECTIONS PROVIDES AN ADEQUATE AIR SEAL AT THESE LOCATIONS. ASTM E 497, Standard Practice for Installing Sound-Isolating Lightweight Partitions, provides additional information. Consult the manufacturer of the gypsum board for any special recommendations.

Systems are grouped in ranges according to their Sound Transmission Class (STC) or Field Sound Transmission Class (FSTC). The higher ranges are shown first. All of the sound tests referenced were conducted according to the requirements of either ASTM E 90, for laboratory tests, or ASTM E 336, for field tests. The designer shall adhere to the specified materials and construction details for STC and FSTC rated systems, particularly in plaster systems, because substitution of lightweight aggregates for sand, or reduction of the sand proportion, may reduce the rating. ALL OPENINGS THROUGH THE SYSTEM, AND ITS ENTIRE PERIMETER, SHALL BE SEALED AIRTIGHT.

SUBSTITUTING MECHANICAL FASTENERS FOR ADHESIVES, OR THE USE OF MORE FASTENERS, MAY AFFECT THE RATING.

Details of sound tests issued by sound testing agencies are on file and a summary is available from the Gypsum Association or the test sponsor.

Figure 11 shows three typical resilient channel configurations. Where resilient channels are included in systems, the resilient channels are shown by a dashed line to distinguish them from rigid furring channels.

Figure 12 on page 20 distinguishes between standard construction practices and those practices recommended for improved sound control.
Figure 12
Sound Isolation Construction

"NORMAL" CONSTRUCTION
ARROWS SHOW
FLANKING PATHS

Wood stud
system

ELEVATION
Floor and ceiling partitions

Stud stud
system

"SELECT" CONSTRUCTION
SEALING OF RELIEF DETAIL AT
PERIMETER OF PARTITION AND AROUND
CUT-OUTS TO PREVENT SOUND LEAKAGE

Wood stud
system

Flexible sealant

ELEVATION
Floor and ceiling partitions

Stud stud
system

"PRE-DESIGN" CONSTRUCTION
SIMULATED LABORATORY
CONDITIONS

Stud stud
system

Flexible sealant and
sealant to seal against
sound breaks

Gas seal expands structural flanking through floor

ELEVATION

PLAN
Through penetration openings

Outlet boxes

Electrical box with
sealing ring

PLAN
Sealing of openings through penetrations

Outlet box detail

PLAN
Boxes offset for stud space and sealing
of openings through partitions

Flexible sealant or tape

PLAN
Flanking at partition-mullion intersection

Flexible sealant or tape

PLAN
Metal stud
flanking around partition ends

Flexible sealant or tape

PLAN
Intersection with interior wall

Flexible sealant or tape

PLAN
Intersection with exterior wall

Flexible sealant or tape

Flexible sealant or tape

Flexible sealant or tape
SOUND TRANSMISSION LOSS TESTS

ASTM E 90, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions, is the procedure for measuring the sound transmission loss (STL) in a laboratory. The STL is the difference between the sound energy (sound pressure level) in a source room and a receiving room when the two rooms are separated by the system being tested.

ASTM E 336, Standard Test Method for Measurement of Airborne Sound Insulation in Buildings, is the procedure to determine the field sound transmission loss (FSTL) between two rooms under field conditions.

The STL or the FSTL is measured at 1/3 octave test frequencies (Hz) as follows and the sound transmission loss curve is plotted:

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>STL or FSTL</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>315</td>
</tr>
<tr>
<td>160</td>
<td>400</td>
</tr>
<tr>
<td>200</td>
<td>500</td>
</tr>
<tr>
<td>250</td>
<td>630</td>
</tr>
<tr>
<td>315</td>
<td>800</td>
</tr>
<tr>
<td>400</td>
<td>1000</td>
</tr>
<tr>
<td>500</td>
<td>1250</td>
</tr>
<tr>
<td>630</td>
<td>1600</td>
</tr>
<tr>
<td>800</td>
<td>2000</td>
</tr>
</tbody>
</table>

A system's overall effectiveness in resisting the transmission of airborne sound, whether it is a wall, partition, or floor-ceiling, is reported as a single number derived from an analysis of the STL or FSTL curve. This rating is the Sound Transmission Class (STC) or Field Sound Transmission Class (FSTC). This Manual uses STC/FSTC ranges to make comparing systems more significant.

ASTM E 413, Classification for Rating Sound Insulation, is the method used to derive the STC/FSTC from the STL/FSTL curve. Using the rules stated in ASTM E 413, a reference contour is fitted to the sound transmission loss curve. The STC/FSTC is the point where the reference contour crosses the 500 Hz line.

The reference contour, shown by the dashed line in Figure 13, has a flat portion from 4000 Hz to 1250 Hz. It drops 5 dB between 1250 Hz and 400 Hz, and 15 dB between 400 Hz and 125 Hz. In fitting the reference contour to the measured curve, the following conditions are required to be met:

1. The STL curve is not permitted to be greater than 8 dB below the reference contour at any test frequency, and
2. The sum of the dB differences between the points on the reference contour and the corresponding points on the STL curve at each of the test frequencies is not permitted to be greater than 32 dB.

Some of the STC ratings in this Manual were derived according to slightly different standards in use prior to 1970. For instance, ASTM E 90-61T, the previous sound test procedure, called for measurements at 1/3 octave frequencies, and the rules for fitting the standard curve were different.

The smallest dimension of the system tested in accordance with ASTM E 90 is not permitted to be less than 7 feet, 10 inches and the minimum volume for each of the sound source and receiving rooms is 2,625 cubic feet. The system is constructed to separate the source and receiving rooms, which are arranged so that the only significant sound transmission is through the test specimen.

The source room contains one or more sound sources, a diffusing system such as multiple stationary and/or rotating reflectors, and microphones located to adequately sample the sound field in the space. A single microphone on a rotating boom may be optionally used. The receiving room is similarly equipped, except that the sound source(s) is used only to determine the reverberation time for correction purposes. The sound measurements in both rooms are made according to ASTM E 90.

Research by recognized sound test authorities indicates that the STCs on unsymmetrical walls are not affected by sound testing from either side. Therefore, the laboratory sound source side is not indicated for unsymmetrical systems in this Manual.
IMPACT NOISE TEST

To determine the Impact Insulation Classification (IIC) of a floor, a standard ISO impact machine with steel hammers taps on a test floor system installed above a special receiving room. Microphones in the receiving room record the average sound pressure level produced by the tapping machine at 1/3 octave frequency bands between 100 and 3150 Hz. These measured levels are then normalized to a standard room absorption. The method used is described in ASTM E 492, Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine.

The IIC is determined by comparing the normalized impact sound pressure levels at the 16 test frequencies with an IIC reference contour. The reference contour has a flat portion from 100 to 315 Hz, a middle line segment decreasing 5 dB in the interval 315 to 1000 Hz, followed by a high frequency line segment decreasing 15 dB in the interval 1000 to 3150 Hz. In fitting the reference contour to the measured sound pressure levels in the receiving room, the following conditions are required to be met:

1. The noise level at any test frequency is not permitted to be greater than 8 dB above the reference contour, and
2. The sum of the dB differences between the points on the reference contour and the corresponding points on the curve of the normalized impact noise levels at each of the test frequencies is not permitted to be greater than 32 dB.

The IIC for the specimen is the difference between 110 and the value on the normalized impact noise level scale (i.e., ordinate scale) at 500 Hz of the lowest contour for which the above conditions are fulfilled.

The IIC listings for floor-ceiling systems in this Manual are for bare floors (no floor covering) and for the addition of a carpet over a separate pad, which is identified as "C&P."

Although any carpet, with or without a pad, will improve the IIC, a heavy wool carpet over a good quality pad will make a significant improvement, as illustrated for FC 5300 on page 122. The addition of a 44 oz. woven loop pile carpet over a 40 oz. hair felt pad increased the IIC from 38 to 63. The IIC (C&P) listings in this Manual are for the carpet and pad described above for FC 5300 unless otherwise noted. The use of other types of carpets, both with and without pads, will result in increases in the IIC, and in some instances may equal that achieved by use of the aforementioned carpet and pad.
## SECTION IV - FIRE RESISTANCE AND SOUND RATED SYSTEMS

### INDEX TO SYSTEMS BY STC RATING

<table>
<thead>
<tr>
<th>STC</th>
<th>GA FILE NO.</th>
<th>STC</th>
<th>GA FILE NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 - 69</td>
<td>WP 5060</td>
<td>45 - 49</td>
<td>WP 1070</td>
</tr>
<tr>
<td>60 - 64</td>
<td>WP 2945</td>
<td></td>
<td>WP 1071</td>
</tr>
<tr>
<td></td>
<td>WP 5005</td>
<td></td>
<td>WP 1072</td>
</tr>
<tr>
<td></td>
<td>WP 5006</td>
<td></td>
<td>WP 1073</td>
</tr>
<tr>
<td></td>
<td>WP 5076</td>
<td></td>
<td>WP 1076</td>
</tr>
<tr>
<td></td>
<td>WP 1015</td>
<td></td>
<td>WP 1081</td>
</tr>
<tr>
<td></td>
<td>WP 1470</td>
<td></td>
<td>WP 1082</td>
</tr>
<tr>
<td></td>
<td>WP 1505</td>
<td></td>
<td>WP 1085</td>
</tr>
<tr>
<td></td>
<td>WP 1510</td>
<td></td>
<td>WP 1090</td>
</tr>
<tr>
<td></td>
<td>WP 1515</td>
<td></td>
<td>WP 1615</td>
</tr>
<tr>
<td></td>
<td>WP 1516</td>
<td></td>
<td>WP 1616</td>
</tr>
<tr>
<td></td>
<td>WP 1520</td>
<td></td>
<td>WP 1630</td>
</tr>
<tr>
<td></td>
<td>WP 1521</td>
<td></td>
<td>WP 1635</td>
</tr>
<tr>
<td></td>
<td>WP 1522</td>
<td></td>
<td>WP 5010</td>
</tr>
<tr>
<td></td>
<td>WP 2800</td>
<td></td>
<td>WP 6020</td>
</tr>
<tr>
<td></td>
<td>WP 2860</td>
<td></td>
<td>WP 6025</td>
</tr>
<tr>
<td></td>
<td>WP 2861</td>
<td></td>
<td>WP 6070</td>
</tr>
<tr>
<td></td>
<td>WP 2863</td>
<td></td>
<td>WP 6070</td>
</tr>
<tr>
<td></td>
<td>WP 2864</td>
<td></td>
<td>WP 6070</td>
</tr>
<tr>
<td></td>
<td>WP 5105</td>
<td></td>
<td>WP 1204</td>
</tr>
<tr>
<td></td>
<td>WP 5106</td>
<td></td>
<td>WP 1206</td>
</tr>
<tr>
<td></td>
<td>WP 1021</td>
<td></td>
<td>WP 1208</td>
</tr>
<tr>
<td></td>
<td>WP 1022</td>
<td></td>
<td>WP 1240</td>
</tr>
<tr>
<td></td>
<td>WP 1023</td>
<td></td>
<td>WP 1250</td>
</tr>
<tr>
<td></td>
<td>WP 1024</td>
<td></td>
<td>WP 1290</td>
</tr>
<tr>
<td></td>
<td>WP 1041</td>
<td></td>
<td>WP 1714</td>
</tr>
<tr>
<td></td>
<td>WP 1050</td>
<td></td>
<td>WP 1716</td>
</tr>
<tr>
<td></td>
<td>WP 1051</td>
<td></td>
<td>WP 5130</td>
</tr>
<tr>
<td></td>
<td>WP 1052</td>
<td></td>
<td>WP 6135</td>
</tr>
<tr>
<td></td>
<td>WP 1053</td>
<td></td>
<td>WP 6152</td>
</tr>
<tr>
<td></td>
<td>WP 1556</td>
<td></td>
<td>WP 1311</td>
</tr>
<tr>
<td></td>
<td>WP 1560</td>
<td></td>
<td>WP 1330</td>
</tr>
<tr>
<td></td>
<td>WP 1561</td>
<td></td>
<td>WP 1340</td>
</tr>
<tr>
<td></td>
<td>WP 1562</td>
<td></td>
<td>WP 1350</td>
</tr>
<tr>
<td></td>
<td>WP 1563</td>
<td></td>
<td>WP 1370</td>
</tr>
<tr>
<td></td>
<td>WP 1570</td>
<td></td>
<td>WP 1380</td>
</tr>
<tr>
<td></td>
<td>WP 2821</td>
<td></td>
<td>WP 1390</td>
</tr>
<tr>
<td></td>
<td>WP 2822</td>
<td></td>
<td>WP 1400</td>
</tr>
<tr>
<td></td>
<td>WP 2823</td>
<td></td>
<td>WP 1830</td>
</tr>
<tr>
<td></td>
<td>WP 2824</td>
<td></td>
<td>WP 1841</td>
</tr>
<tr>
<td></td>
<td>WP 2870</td>
<td></td>
<td>WP 1870</td>
</tr>
<tr>
<td></td>
<td>WP 5015</td>
<td></td>
<td>WP 6210</td>
</tr>
<tr>
<td></td>
<td>WP 5016</td>
<td></td>
<td>WP 6220</td>
</tr>
<tr>
<td></td>
<td>WP 5130</td>
<td></td>
<td>WP 6240</td>
</tr>
<tr>
<td></td>
<td>WP 5910</td>
<td></td>
<td>WP 6250</td>
</tr>
<tr>
<td></td>
<td>WP 5925</td>
<td></td>
<td>WP 6254</td>
</tr>
<tr>
<td></td>
<td>WP 1930</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STC</th>
<th>GA FILE NO.</th>
<th>STC</th>
<th>GA FILE NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 - 64</td>
<td>WP 3010</td>
<td>55 - 59</td>
<td>WP 3110</td>
</tr>
<tr>
<td></td>
<td>WP 1070</td>
<td></td>
<td>WP 3810</td>
</tr>
<tr>
<td></td>
<td>WP 1072</td>
<td></td>
<td>WP 3812</td>
</tr>
<tr>
<td></td>
<td>WP 1073</td>
<td></td>
<td>WP 3820</td>
</tr>
<tr>
<td></td>
<td>WP 1076</td>
<td></td>
<td>WP 5510</td>
</tr>
<tr>
<td></td>
<td>WP 1081</td>
<td></td>
<td>WP 5320</td>
</tr>
<tr>
<td></td>
<td>WP 1082</td>
<td></td>
<td>WP 7062</td>
</tr>
<tr>
<td></td>
<td>WP 1085</td>
<td></td>
<td>WP 7064</td>
</tr>
<tr>
<td></td>
<td>WP 1090</td>
<td></td>
<td>WP 7079</td>
</tr>
<tr>
<td></td>
<td>WP 1615</td>
<td></td>
<td>WP 6800</td>
</tr>
<tr>
<td></td>
<td>WP 1616</td>
<td></td>
<td>WP 7073</td>
</tr>
<tr>
<td></td>
<td>WP 1625</td>
<td></td>
<td>WP 7074</td>
</tr>
<tr>
<td></td>
<td>WP 1630</td>
<td></td>
<td>WP 7076</td>
</tr>
<tr>
<td></td>
<td>WP 1635</td>
<td></td>
<td>WP 7077</td>
</tr>
<tr>
<td></td>
<td>WP 5010</td>
<td></td>
<td>WP 7078</td>
</tr>
<tr>
<td></td>
<td>WP 6020</td>
<td></td>
<td>WP 7079</td>
</tr>
<tr>
<td></td>
<td>WP 6025</td>
<td></td>
<td>WP 7080</td>
</tr>
<tr>
<td></td>
<td>WP 6070</td>
<td></td>
<td>WP 7081</td>
</tr>
<tr>
<td></td>
<td>WP 6070</td>
<td></td>
<td>WP 7082</td>
</tr>
<tr>
<td></td>
<td>WP 6070</td>
<td></td>
<td>WP 7083</td>
</tr>
<tr>
<td></td>
<td>WP 1204</td>
<td></td>
<td>WP 7084</td>
</tr>
<tr>
<td></td>
<td>WP 1206</td>
<td></td>
<td>WP 7085</td>
</tr>
<tr>
<td></td>
<td>WP 1240</td>
<td></td>
<td>WP 7086</td>
</tr>
<tr>
<td></td>
<td>WP 1290</td>
<td></td>
<td>WP 7087</td>
</tr>
<tr>
<td></td>
<td>WP 1296</td>
<td></td>
<td>WP 7095</td>
</tr>
<tr>
<td></td>
<td>WP 1714</td>
<td></td>
<td>WP 7096</td>
</tr>
<tr>
<td></td>
<td>WP 1716</td>
<td></td>
<td>WP 7097</td>
</tr>
<tr>
<td></td>
<td>WP 5130</td>
<td></td>
<td>WP 7098</td>
</tr>
<tr>
<td></td>
<td>WP 6135</td>
<td></td>
<td>WP 7099</td>
</tr>
<tr>
<td></td>
<td>WP 6152</td>
<td></td>
<td>WP 7100</td>
</tr>
<tr>
<td></td>
<td>WP 1311</td>
<td></td>
<td>WP 7101</td>
</tr>
<tr>
<td></td>
<td>WP 1330</td>
<td></td>
<td>WP 7102</td>
</tr>
<tr>
<td></td>
<td>WP 1340</td>
<td></td>
<td>WP 7103</td>
</tr>
<tr>
<td></td>
<td>WP 1350</td>
<td></td>
<td>WP 7105</td>
</tr>
<tr>
<td></td>
<td>WP 1370</td>
<td></td>
<td>WP 7106</td>
</tr>
<tr>
<td></td>
<td>WP 1380</td>
<td></td>
<td>WP 7107</td>
</tr>
<tr>
<td></td>
<td>WP 1390</td>
<td></td>
<td>WP 7108</td>
</tr>
<tr>
<td></td>
<td>WP 1400</td>
<td></td>
<td>WP 7110</td>
</tr>
<tr>
<td></td>
<td>WP 1830</td>
<td></td>
<td>WP 7111</td>
</tr>
<tr>
<td></td>
<td>WP 1841</td>
<td></td>
<td>WP 7112</td>
</tr>
<tr>
<td></td>
<td>WP 1870</td>
<td></td>
<td>WP 7113</td>
</tr>
<tr>
<td></td>
<td>WP 6210</td>
<td></td>
<td>WP 7114</td>
</tr>
<tr>
<td></td>
<td>WP 6220</td>
<td></td>
<td>WP 7115</td>
</tr>
<tr>
<td></td>
<td>WP 6240</td>
<td></td>
<td>WP 7116</td>
</tr>
<tr>
<td></td>
<td>WP 6250</td>
<td></td>
<td>WP 7117</td>
</tr>
<tr>
<td></td>
<td>WP 6254</td>
<td></td>
<td>WP 7118</td>
</tr>
<tr>
<td></td>
<td>WP 1930</td>
<td></td>
<td>WP 7119</td>
</tr>
</tbody>
</table>
INDEX TO SYSTEMS BY STC RATING

<table>
<thead>
<tr>
<th>AREA SEPARATION WALLS</th>
<th>NONCOMBUSTIBLE FLOOR-CEILINGS</th>
<th>STEEL FRAMED FLOOR-CEILINGS WOOD FLOOR</th>
<th>WOOD FRAMED FLOOR-CEILINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STC</strong></td>
<td><strong>STC</strong></td>
<td><strong>STC</strong></td>
<td><strong>STC</strong></td>
</tr>
<tr>
<td>60 - 64</td>
<td>ASW 1000</td>
<td>FC 1105</td>
<td>65 - 69</td>
</tr>
<tr>
<td></td>
<td>ASW 1001</td>
<td>FC 2030</td>
<td>FC 5000</td>
</tr>
<tr>
<td></td>
<td>ASW 1002</td>
<td>FC 3012</td>
<td>60 - 64</td>
</tr>
<tr>
<td></td>
<td>ASW 1003</td>
<td></td>
<td>FC 5011</td>
</tr>
<tr>
<td></td>
<td>ASW 1004</td>
<td></td>
<td>55 - 59</td>
</tr>
<tr>
<td>55 - 59</td>
<td>ASW 1005</td>
<td>FC 5104</td>
<td>FC 5104</td>
</tr>
<tr>
<td></td>
<td>ASW 1100</td>
<td>FC 5105</td>
<td>FC 5105</td>
</tr>
<tr>
<td>50 - 54</td>
<td>ASW 1105</td>
<td>FC 5106</td>
<td>FC 5106</td>
</tr>
<tr>
<td></td>
<td>ASW 1200</td>
<td>FC 5107</td>
<td>FC 5107</td>
</tr>
<tr>
<td></td>
<td>ASW 1201</td>
<td>FC 5109</td>
<td>FC 5109</td>
</tr>
<tr>
<td>45 - 49</td>
<td>ASW 1205</td>
<td>FC 5110</td>
<td>50 - 54</td>
</tr>
<tr>
<td></td>
<td>ASW 1208</td>
<td>FC 5111</td>
<td>FC 5110</td>
</tr>
<tr>
<td></td>
<td>ASW 1206</td>
<td>FC 5112</td>
<td>FC 5111</td>
</tr>
<tr>
<td></td>
<td>ASW 1215</td>
<td>FC 5115</td>
<td>FC 5112</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5116</td>
<td>FC 5115</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5120</td>
<td>FC 5120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5240</td>
<td>45 - 49</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5241</td>
<td>FC 5240</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5242</td>
<td>FC 5241</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5250</td>
<td>FC 5242</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5300</td>
<td>FC 5250</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5310</td>
<td>40 - 44</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5406</td>
<td>FC 5300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5407</td>
<td>FC 5310</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5408</td>
<td>35 - 39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5410</td>
<td>FC 5408</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5415</td>
<td>FC 5410</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5420</td>
<td>FC 5415</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5470</td>
<td>FC 5420</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FC 5480</td>
<td>FC 5470</td>
</tr>
<tr>
<td>DELETED SYSTEMS</td>
<td>NEW SYSTEMS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 1121</td>
<td>WP 1024</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 1200</td>
<td>WP 1054</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 1201</td>
<td>WP 1350</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 1295</td>
<td>WP 1516</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 1711</td>
<td>WP 1616</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 1650</td>
<td>WP 1943</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 1940</td>
<td>WP 3242</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 3445</td>
<td>WP 3243</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 7094</td>
<td>WP 3342</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 7490</td>
<td>WP 5006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 8003</td>
<td>WP 5016</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 8104</td>
<td>WP 5060</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 8124</td>
<td>WP 5106</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 8125</td>
<td>WP 7254</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WP 8201</td>
<td>WP 7265</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP 7491</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP 7691</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP 8006</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP 8111</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP 8132</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP 8203</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP 8416</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WP 8417</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE

### GA FILE NO. WP 1015

**GENERIC**

**GYPSUM WALLBOARD, STEEL STUDS**

- Base layer ⅛" gypsum wallboard applied parallel to each side of 2½" steel studs 24" o.c. with 1" Type S drywall screws 12" o.c. Face layer ⅛" type X gypsum wallboard or gypsum veneer base applied parallel to each side with ⅛" Type S drywall screws 12" o.c.

- Joints staggered 24" each layer and side. Sound tested with 1½" mineral fiber insulation, 3.0 pcf, friction fit in stud space. (NLB)

**1 HOUR FIRE**

- Thickness: 4½"
- Approx. Weight: 8 psf
- Fire Test: See WP 1051
- Sound Test: CK 59-14, 8-13-68

### GA FILE NO. WP 1021

**GENERIC**

**GYPSUM WALLBOARD, STEEL STUDS**

- One layer ⅛" type X plain or predecorated gypsum wallboard applied parallel to ONE SIDE of 2½" steel studs 24" o.c. with 1" Type S drywall screws 8" o.c. at vertical joints and ⅛" adhesive beads at intermediate studs.

- OPPOSITE SIDE: Base layer ⅛" type X gypsum wallboard applied parallel to studs with 1" Type S drywall screws 8" o.c. at vertical joints and 12" o.c. at intermediate studs. Face layer ⅛" type X plain or predecorated gypsum wallboard applied parallel to studs with ⅛" Type S drywall screws 8" o.c. at vertical joints and ⅛" adhesive beads at intermediate studs.

- Joints staggered 24" each layer and side. Sound tested with 3½" glass fiber insulation friction fit in stud space and all layers screw attached without adhesive. (NLB)

**1 HOUR FIRE**

- Thickness: 4"
- Approx. Weight: 7 psf
- Fire Test: FM WP 68, 12-8-66
- Sound Test: RAL TLBB-55, 2-18-68

### GA FILE NO. WP 1022

**PROPRIETARY**

**GYPSUM WALLBOARD, STEEL STUDS**

- One layer ¼" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to ONE SIDE of 2½" steel studs 24" o.c. with 1" Type S drywall screws 8" o.c. at vertical joints and 12" o.c. at intermediate studs and wall perimeter.

- OPPOSITE SIDE: Base layer ⅛" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to studs with 1" Type S drywall screws 12" o.c. Face layer ⅛" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to studs with ⅛" Type S drywall screws 8" o.c. at vertical joints and 12" o.c. at intermediate studs and wall perimeter.

- Joints staggered 24" each layer and side. Sound tested with 3" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

National Gypsum Company - "4" Gold Bond® Brand FIRE-SHIELD C™

Gypsum Wallboard

**1 HOUR FIRE**

- Thickness: 4"
- Approx. Weight: 7 psf
- Fire Test: FM WP-733, 12-3-84
- Sound Test: See WP 1021
  (RAL TLBB-65, 2-18-88)

---

*Contact the manufacturer for more detailed information on proprietary products.*
## Walls and Interior Partitions, Noncombustible

<table>
<thead>
<tr>
<th>GA File No. WP 1023</th>
<th>Proprietary*</th>
<th>1 Hour Fire</th>
<th>50 to 54 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs, Glass Fiber Insulation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer ½&quot; proprietary type X gypsum wallboard applied at right angles to ONE SIDE of 3½&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 6&quot; o.c. at vertical joints and 12&quot; o.c. at intermediate studs, Studs attached to floor and ceiling runners with Type S pan head screws. 2½&quot; glass fiber insulation, 0.30 pcf, friction fit in stud space.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OPPOSITE SIDE:</strong> Base layer ½&quot; proprietary type X gypsum wallboard applied at right angles to studs with 1½&quot; Type S drywall screws 24&quot; o.c. Face layer ½&quot; proprietary type X gypsum wallboard applied at right angles to studs with 1½&quot; Type S drywall screws 3&quot; o.c. at vertical joints and 12&quot; o.c. at intermediate studs and wall perimeter. Face layer may include a 12&quot; wide filler strip at midheight. Vertical joints staggered 24&quot; each layer and side. Horizontal joints staggered 24&quot; each layer and side, or minimum 12&quot; when filler strip is used. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROPRIETARY GYPSUM BOARD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Gypsum Company</td>
<td>-</td>
<td>½&quot; FireBlock® Type C</td>
<td></td>
</tr>
<tr>
<td>G-P Gypsum</td>
<td>-</td>
<td>½&quot; ToughRock® Fireguard® C</td>
<td></td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td>-</td>
<td>½&quot; TG-C</td>
<td></td>
</tr>
<tr>
<td><strong>GA File No. WP 1024</strong></td>
<td>Generic</td>
<td>1 Hour Fire</td>
<td>50 to 54 STC Sound</td>
</tr>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs, Glass Fiber Insulation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer ½&quot; Type X gypsum wallboard or gypsum veneer base applied parallel to a double row of 3½&quot; 20 gage steel studs 24&quot; o.c. and not less than 2&quot; apart with 1½&quot; Type S-12 drywall screws 12&quot; o.c. at edges, floor and ceiling runners, and intermediate studs. Each row of studs horizontally braced with 1½&quot; wide by 20 gage steel strap attached to the interior side of the studs at midheight with one ½&quot; Type S-12 pan head screw at each stud. 3½&quot; glass fiber insulation, 0.5 pcf, on each side in stud space. Joints staggered 24&quot; on opposite sides.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rating based on loading to not more than 80% of full design load. (LIMITED LOAD-BEARING)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GA File No. WP 1035</strong></td>
<td>Proprietary*</td>
<td>1 Hour Fire</td>
<td></td>
</tr>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs, Mineral Fiber Insulation, Cementitious Backer Unit</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer ¾&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to ONE SIDE of 3½&quot; 20 gage steel studs 16&quot; o.c. with 1½&quot; Type S drywall screws 8&quot; o.c. at vertical joints and 12&quot; o.c. at intermediate studs. 3&quot; mineral fiber insulation batts, 2 pcf, in stud space. For load-bearing, studs attached to each side of floor and ceiling runners by welding or with ½&quot; Type S-12 pan head screws.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OPPOSITE SIDE:</strong> One layer ½&quot; proprietary cementitious backer units applied parallel or at right angles to studs with 1½&quot; Type S-12 water head screws 8&quot; o.c. Joints staggered and covered with glass fiber mesh tape. (LOAD-BEARING)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROPRIETARY GYPSUM BOARD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States Gypsum Company</td>
<td>-</td>
<td>¾&quot; Sheetrock® Brand FIRECODE® Core Gypsum Panels</td>
<td></td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
### Walls and Interior Partitions, Noncombustible

<table>
<thead>
<tr>
<th>GA File No. WP 1041</th>
<th>Proprietary*</th>
<th>1 Hour Fire</th>
<th>50 to 54 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard,</strong> <strong>Fiber-Cement Board, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/4&quot; proprietary type X gypsum wallboard applied parallel or at right angles to each side of 3½&quot; 20 gauge steel studs 24&quot; o.c. with 1&quot; Type S-12 drywall screws 24&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face layer 1/4&quot; proprietary fiber-cement board applied parallel or at right angles to studs with 1½&quot; No. 8 ribbed bugle head screws, 0.325&quot; heads, 8&quot; o.c. Joints offset 24&quot; from base layer joints. Face layer joints taped and finished.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; on opposite sides. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proprietary Gypsum Board</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPB America Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- ½&quot; ProRock® Type C Gypsum Panels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 5/8&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 8 psf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: CPL 1170-106199, 8-3-99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound Test: ASLAS-TL1510, 8-11-99</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA File No. WP 1050</th>
<th>Proprietary*</th>
<th>1 Hour Fire</th>
<th>50 to 54 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/4&quot; proprietary gypsum wallboard applied parallel to each side of 2½&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 12&quot; o.c. Face layer 1/4&quot; proprietary type X plain or precut gypsum wallboard or gypsum veneer base applied parallel to each side with ⅝&quot; beads of laminating compound 12&quot; o.c. to full field of face layer and 1½&quot; Type S drywall screws 8&quot; o.c. at floor and ceiling runners only.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. Sound tested with 2&quot; glass fiber Insulation friction fit in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proprietary Gypsum Board</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G-P Gypsum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 1/4&quot; ToughRock® Sound Deadening Board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- ½&quot; ToughRock® Fireguard® C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lafarge North America Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- ⅝&quot; Soundcheck®</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- ½&quot; Firecheck® Type C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- ⅝&quot; Temple-4 Sound Deadening Board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- ½&quot; TG-C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 4&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 7 psf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL R717-53, 54; 9-4-68, UL Design U410</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ULC Design U400</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound Test: G&amp;H BW-1774, 8-6-66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA File No. WP 1051</th>
<th>Generic</th>
<th>1 Hour Fire</th>
<th>50 to 54 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/4&quot; gypsum wallboard applied parallel to each side of 2½&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 12&quot; o.c. Face layer 1/4&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side with ⅝&quot; beads of laminating compound 2&quot; o.c. to full field of face layer and 1½&quot; Type S drywall screws 8&quot; o.c. at floor and ceiling runners only.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. Sound tested with 2&quot; glass fiber Insulation friction fit in stud space and face layers screw attached without adhesive. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 4&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 7 psf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: FM WP 152-1, 1-22-69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound Test: NGC 2316, 8-19-58</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
### WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE

#### GA FILE NO. WP 1052

**GENERIC**

**GYPSUM WALLBOARD, STEEL STUDS**

One layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 3/4" steel studs 24" o.c. with S" Type S drywall screws 8" o.c. at vertical joints and 12" o.c. at wall perimeter and intermediate studs. Face layer 9/16" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to ONE SIDE with 1/4" Type S drywall screws 12" o.c.

Joints staggered 24" each layer and side. Sound tested with 3/16" glass fiber friction fit in stud space. (NLB)

<table>
<thead>
<tr>
<th>Thickness</th>
<th>5/8&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Weight</td>
<td>8 psf</td>
</tr>
<tr>
<td>Fire Test</td>
<td>See WP 1350</td>
</tr>
<tr>
<td></td>
<td>(FM WP-45, 6-19-68; OSU T-1770, 8-61; ULC 791484, 79T500, 76T497, 8-21-81, ULC Design W415)</td>
</tr>
<tr>
<td>Sound Test</td>
<td>NRCC 817-NV, 2-3-81</td>
</tr>
</tbody>
</table>

#### GA FILE NO. WP 1053

**GENERIC**

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 1/4" square edge regular gypsum wallboard or backing board applied parallel to each side of 25/4" steel studs 24" o.c. with Type S drywall screws 12" o.c. Face layer 9/16" type X plain or predecorated gypsum wallboard or gypsum veneer base applied parallel to each side with 1/4" wide beads of laminating compound 12" o.c. to full field of face layer and 1/4" Type S drywall screws 8" o.c. at floor and ceiling runners only.

Joints staggered 24" each layer and side. Sound tested with 3/16" glass fiber insulation friction fit in stud space. (NLB)

<table>
<thead>
<tr>
<th>Thickness</th>
<th>4/5&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Weight</td>
<td>7 psf</td>
</tr>
<tr>
<td>Fire Test</td>
<td>ULC 74T184, 4-10-75, ULC Design W402</td>
</tr>
<tr>
<td>Sound Test</td>
<td>CK 8104.02, 2-3-81</td>
</tr>
</tbody>
</table>

#### GA FILE NO. WP 1054

**PROPRIETARY**

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 1/4" proprietary gypsum wallboard applied parallel to each side of 25/4" steel studs 24" o.c. with Type S drywall screws 12" o.c. Face layer 1/2" proprietary type X plain or predecorated gypsum wallboard or gypsum veneer base applied parallel to each side 1/4" beads of laminating compound 12" o.c. to full field of face layer and 1/4" Type S drywall screws 8" o.c. at floor and ceiling runners only.

Joints staggered 24" each layer and side. Sound tested with 2" glass fiber insulation friction fit in stud space. (NLB)

<table>
<thead>
<tr>
<th>Thickness</th>
<th>4&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Weight</td>
<td>7 psf</td>
</tr>
<tr>
<td>Fire Test</td>
<td>UL R2717-53, 54; 8-4-68; UL Design U410; ULC Design W400</td>
</tr>
<tr>
<td>Sound Test</td>
<td>G&amp;H BW-17FT, 8-8-66</td>
</tr>
</tbody>
</table>

#### GA FILE NO. WP 1070

**GENERIC**

**GYPSUM WALLBOARD, STEEL STUDS, MINERAL FIBER INSULATION**

One layer 9/16" type X gypsum wallboard or gypsum veneer base applied parallel to each side of 25/4" steel studs 24" o.c. with Type S drywall screws 8" o.c. at vertical joints and 12" o.c. at wall perimeter and intermediate studs. 2" mineral fiber insulation, 2.5 psf, friction fit in stud space. Also fire tested with 1/4" mineral fiber insulation, 3.0 psf, stapled to board in stud space.

Joints staggered 24" on opposite sides. (NLB)

<table>
<thead>
<tr>
<th>Thickness</th>
<th>3/16&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Weight</td>
<td>5 psf</td>
</tr>
<tr>
<td>Fire Test</td>
<td>FM WP 51-1, 9-22-66; OSU T-3632, 11-23-65</td>
</tr>
<tr>
<td>Sound Test</td>
<td>RAL TL69-42, 10-17-68</td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
# Walls and Interior Partitions, Noncombustible

## GA File No. WP 1071

**Proprietary**

### Gypsum Wallboard, Steel Studs, Mineral Fiber Insulation

One layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to each side of 2½" steel studs 24" o.c. with 1" Type S drywall screws 6" o.c. at vertical joints and 12" o.c. at intermediate studs and wall perimeter. 2" mineral fiber insulation, 3.0 pcf, friction fit in stud space.

Vertical joints staggered 24" on each side and on opposite sides. Horizontal joints need not be staggered. (NLB)

**Proprietary Gypsum Board**

- National Gypsum Company
- ½" Gold Bond® Brand FIRE-SHIELD G®
- Gypsum Wallboard

<table>
<thead>
<tr>
<th>Thickness</th>
<th>3½&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Weight</td>
<td>5 pcf</td>
</tr>
<tr>
<td>Fire Test</td>
<td>UL R3501, 93N122748, 9-15-83; UL Design V401; FM WP-731, 9-12-84</td>
</tr>
<tr>
<td>Sound Test</td>
<td>See WP 1070 (RAL. 1169-42, 10-17-88)</td>
</tr>
</tbody>
</table>

## GA File No. WP 1072

**Generic**

### Gypsum Wallboard, Steel Studs

One layer ¾" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 3½" steel studs 24" o.c. with 1" Type S drywall screws 8" o.c. at vertical joints and 12" o.c. at floor and ceiling runners and intermediate studs.

Joints staggered 24" on each side and on opposite sides. Sound tested with 3½" glass fiber friction fit in stud space. (NLB)

<table>
<thead>
<tr>
<th>Thickness</th>
<th>4½&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Weight</td>
<td>6 pcf</td>
</tr>
<tr>
<td>Fire Test</td>
<td>See WP 1350 (FM WP-46, 8-10-65; OSU T-1770, 6-61; ULC 79T484, 79T600,79T497, 8-12-81; ULC Design W415)</td>
</tr>
<tr>
<td>Sound Test</td>
<td>NRCC 816-NV, 2-3-81</td>
</tr>
</tbody>
</table>

## GA File No. WP 1073

**Proprietary**

### Glass Mat Gypsum Board, Steel Studs, Glass Fiber Insulation

One layer ½" proprietary glass mat water-resistant gypsum backing board applied parallel to each side of 2½" steel studs 16" o.c. with 1" Type S drywall screws 6" o.c. at vertical joints and 12" o.c. at intermediate studs and wall perimeter. 3½" glass fiber insulation, 0.526 pcf, friction fit in stud space.

Joints staggered 16" on opposite sides and covered with 10 x 10 mesh glass tape and adhesive. (NLB)

**Proprietary Gypsum Panel Product**

- G-P Gypsum
- ½" DenseShield®

<table>
<thead>
<tr>
<th>Thickness</th>
<th>3½&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Weight</td>
<td>5 pcf</td>
</tr>
<tr>
<td>Fire Test</td>
<td>CTC 1897-1655, 1-11-88</td>
</tr>
<tr>
<td>Sound Test</td>
<td>See WP 1070 (RAL. 1169-42, 10-17-88)</td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
### WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE

<table>
<thead>
<tr>
<th>GA FILE NO.</th>
<th>PROPRIETARY*</th>
<th>1 HOUR FIRE</th>
<th>45 to 49 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP 1076</td>
<td>GYPSUM WALLBOARD, STEEL STUDS, GLASS FIBER INSULATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>One layer 5/8&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side of 2½&quot; steel studs 24&quot; o.c. with 1½&quot; Type S drywall screws 8&quot; o.c. at wall perimeter and 12&quot; o.c. at vertical joints and with 1⅞&quot; Type S drywall screws 12&quot; o.c. or continuous ⅝&quot; beads of adhesive at intermediate studs. 2½&quot; glass fiber insulation, 0.65 pcf, friction fit in stud space. Joints staggered 24&quot; on opposite sides. (NLB)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PROPRIETARY GYPSUM BOARD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BPB Canad Inc. - 5/8&quot; ProRock® Type X Gypsum Panels</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>G-P Gypsum - 5/8&quot; ToughRock® Fireguard®</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|             | **Thickness:** 3½"  
|             | **Approx. Weight:** 6 psf  
|             | **Fire Test:** ULC 76155, 1-0-79, ULC Design Wd609 |
|             | **Sound Test:** DRG 70-2-2, 1-6-70 |

| WP 1081     | GYPSUM WALLBOARD, STEEL STUDS |
|             | One layer 5/8" proprietary type X gypsum wallboard applied parallel to each side of 3½" steel studs 24" o.c. with 1⅞" Type S drywall screws 8" o.c. at vertical joints and 12" o.c. at floor and ceiling runnners and intermediate studs. Optional horizontal resilient channel 24" o.c. applied to studs with one ⅝" Type S-12 pan head screw on each stud intersection.  
|             | Stagger joints 24" on each side and on opposite sides. Sound tested with 3" mineral fiber, 2.5 pcf, in stud space. (NLB) |
|             | PROPRIETARY GYPSUM BOARD |
|             | American Gypsum Company - 5/8" FireBlock® Type X |
|             | G-P Gypsum - 5/8" ToughRock® Fireguard® |
|             | Lafarge North America Inc. - ⅝" Firecheck® Type X |
|             | National Gypsum Company - 5/8" Gold Bond® Brand FIRE-SHIELD® Gypsum Wallboard |
|             | Temple-Inland Forest Products Corporation - 5/8" SHEETROCK® Brand Abuse-Resistant Gypsum Panels |
|             | **Thickness:** 4½"  
|             | **Approx. Weight:** 5 psf  
|             | **Fire Test:** UL R1319, 54N040508, 11-30-94, UL Design U465 |
|             | **Sound Test:** USG-960702, 7-18-96; RAL-TL99-103, 6-26-98; RAL-TL99-180, 9-3-99 |

| WP 1082     | GYPSUM WALLBOARD, STEEL STUDS, MINERAL FIBER INSULATION, CEMENTITIOUS BACKER UNIT |
|             | One layer 5/8" proprietary type X gypsum wallboard or veneer base applied parallel to ONE SIDE of 3½" 25 gage steel studs 16" o.c. with 1½" Type S drywall screws 8" o.c. at vertical joints and 12" o.c. to intermediate studs. 3" mineral fiber insulation batts, 2.5 pcf, in stud space.  
|             | OPPOSITE SIDE: One layer ⅝" proprietary cementitious backer units applied parallel or at right angles to studs with 1½" Type S wafer head screws 8" o.c.  
|             | Vertical joints staggered 10" on opposite sides. (NLB) |
|             | PROPRIETARY GYPSUM BOARD |
|             | National Gypsum Company - 5/8" Gold Bond® Brand FIRE-SHIELD® Gypsum Wallboard |
|             | **Thickness:** 4½"  
|             | **Approx. Weight:** 5 psf  
|             | **Fire Test:** ITS J99-04001, 11-16-98 & 2-5-99, ITS Design NGC6WA-60-01; UL R22168, G6CA15728, 5-23-06, UL Design V452 |
|             | **Sound Test:** NGC 2209015, 8-19-99 |

*Contact the manufacturer for more detailed information on proprietary products.*
# Walls and Interior Partitions, Noncombustible

<table>
<thead>
<tr>
<th>GA File No. WP 1085</th>
<th>Proprietary*</th>
<th>1 Hour Fire</th>
<th>45 to 49 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Plaster, Gypsum Lath, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/8&quot; proprietary 1:2 gypsum-sand basecoat plaster and 1/8&quot; lime gauging plaster finish applied over one layer 3/8&quot; proprietary type X gypsum lath applied perpendicular to each side of 2 1/4&quot; steel studs 16&quot; o.c. with 1&quot; Type S drywall screws 8&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound tested with 1&quot; mineral fiber insulation stapled to one side in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proprietary Gypsum Lath</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States Gypsum Company - 3/8&quot; Rocklath® Firecode® C Core Plaster Base</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 4 1/4&quot;</td>
<td>Approx. Weight: 15 psf</td>
<td>Fire Test: UL R1319, 12-12-90, UL Design U468</td>
<td>Sound Test: CK 664-18, 4-6-66</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA File No. WP 1090</th>
<th>Generic</th>
<th>1 Hour Fire</th>
<th>45 to 49 FSTC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/4&quot; gypsum wallboard applied parallel to each side of 1 1/4&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 24&quot; o.c. at vertical joints and 36&quot; o.c. at intermediate studs. Face layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1/4&quot; Type S drywall screws 12&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 3 1/4&quot;</td>
<td>Approx. Weight: 7 psf</td>
<td>Fire Test: UC, 12-29-65</td>
<td>Field Sound Test: ACI 7-1192019c, 12-29-65</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA File No. WP 1204</th>
<th>Generic</th>
<th>1 Hour Fire</th>
<th>40 to 44 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side of 3 1/2&quot; 20 gage steel studs 24&quot; o.c. with 1/4&quot; Type S-12 drywall screws 12&quot; o.c. Face layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1/4&quot; Type S-12 drywall screws 12&quot; o.c. Studs attached to each side of floor and ceiling runners by welding or with 1/2&quot; Type S-12 pan head screws.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bracing: Lateral bracing spaced not over 40&quot; o.c. shall be 1&quot; by 18 gage steel straps attached to each side or channel bracing attached to each stud with a clip angle. For studs with holes or punch-outs in the web the &quot;Q&quot; factor shall be determined by means of stub column tests. Tested at 100 percent of design load. (Passed 90 minute fire test.) (Load-Bearing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 5/8&quot;</td>
<td>Approx. Weight: 9 psf</td>
<td>Fire Test: UL NC 505-1, 7-29-82, UL Design U425</td>
<td>Sound Test: See WP 4615 (NGC 2250, 1-3-68)</td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.
### WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1206</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
<th>40 to 44 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYP BOARD, STEEL STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 1/4&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side of 3 1/2&quot; 20 gage steel studs 24&quot; o.c. with 1&quot; Type S-12 drywall screws 12&quot; o.c. Studs attached to each side of floor and ceiling members by welding or with 1/4&quot; Type S-12 pan head screws. Joints staggered 24&quot; on opposite sides.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bracing:</strong> Lateral bracing spaced not over 40&quot; o.c. shall be 1&quot; by 18 gage steel straps attached to each side or channel bracing attached to each stud with a clip angle. For studs with holes or punch-outs in the web the &quot;Q&quot; factor shall be determined by means of stub column tests. Tested at 100 percent of design load. (LOAD-BEARING)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 1/4&quot;</td>
<td>Approx. Weight: 6 psf</td>
<td>Fire Test: UL NC 505-2, 7-29-82, UL Design U426</td>
<td>Sound Test: See WP 1350 (NGC 2385, 7-28-70)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1240</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
<th>40 to 44 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYP VENEER PLASTER, GYP VENEER BASE, STEEL STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 1/4&quot; type X gypsum veneer base applied parallel or at right angles to each side of 2 1/2&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 8&quot; o.c. at vertical joints and 12&quot; o.c. at intermediate studs. 1/4&quot; gypsum veneer plaster applied over each side. Joints staggered 24&quot; on each side and on opposite sides. Sound tested with 3&quot; glass fiber insulation in stud space and with studs 16&quot; o.c. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 3/4&quot;</td>
<td>Approx. Weight: 5 psf</td>
<td>Fire Test: UC, 8-5-63; UC, 11-1-63; UC, 5-31-66</td>
<td>Sound Test: G&amp;M NG-269FT, 12-20-65</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1299</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
<th>40 to 44 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYP PLASTER, GYP LATH, STEEL STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2&quot; 1/2 gypsum sand plaster applied over 1/2&quot; plain gypsum lath applied at right angles to each side of 2 1/2&quot; steel studs 24&quot; o.c. with 1&quot; Type S screws, 3 per stud per lath width, or 12 gage wire clips. End joint clips at lath centers. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 4 1/2&quot;</td>
<td>Approx. Weight: 15 psf</td>
<td>Fire Test: FM WP-53, 11-29-65</td>
<td>Sound Test: NGC 2061, 10-24-65</td>
</tr>
</tbody>
</table>
### Walls and Interior Partitions, Noncombustible

<table>
<thead>
<tr>
<th>GA File No. WP 1296</th>
<th>Proprietary*</th>
<th>1 Hour Fire</th>
<th>40 to 44 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS,</strong> MINERAL FIBER INSULATION, FIBER-CEMENT BOARD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 5/8&quot; proprietary type X gypsum wallboard applied parallel to one side of 5/8&quot; steel studs 16&quot; O.C. with 1&quot; Type S drywall screws 6&quot; O.C. at vertical joints and 12&quot; O.C. at intermediate studs; 3/16&quot; mineral fiber insulation, 3.0 psf, friction fill in stud space.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OPPOSITE SIDE:</strong> One layer 7/8&quot; proprietary fiber-cement board applied parallel to studs with 1&quot; No. 8-16 x 0.323&quot; head diameter ribbed bugle head screws 6&quot; O.C. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proprietary Gypsum Board</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPB America Inc.</td>
<td>5/8&quot; ProRoc® Type X Gypsum Panels</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA File No. WP 1311</th>
<th>Proprietary*</th>
<th>1 Hour Fire</th>
<th>35 to 39 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOLID GYPSUM WALLBOARD</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 4/8&quot; regular gypsum wallboard or gypsum veneer base applied parallel to each side of 1/2&quot; x 24&quot; proprietary type X gypsum panels with laminating compound.combed over the entire contact surface and 11/8&quot; Type S screws 24&quot; O.C. horizontally and vertically. 1&quot; gypsum coreboard panels attached to 25 gage 1&quot; x 21/4&quot; high &quot;L&quot; runners along floor and ceiling lines with two 11/8&quot; Type S screws at top and bottom. Wallboard layers attached to &quot;L&quot; runners with 11/8&quot; Type S screws 12&quot; O.C.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proprietary Gypsum Board</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Gypsum Company</td>
<td>1&quot; Gold Bond® Brand FIRE-SHIELD® Shaftliner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 2&quot;</td>
<td>Limiting Height: 110&quot;</td>
<td>Approx. Weight: 8 psf</td>
<td>Fire Test: FM WP-571, 6-20-82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA File No. WP 1330</th>
<th>Generic</th>
<th>1 Hour Fire</th>
<th>35 to 39 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SEMI-SOLID GYPSUM WALLBOARD, GYPSUM STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 5/8&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side of 2&quot; wide gypsum studs 24&quot; O.C. with 1&quot; Type G drywall screws 20&quot; O.C. and with laminating compound. Gypsum studs fabricated from 2 or 3 layers of 1/4&quot; or 3/8&quot; laminated gypsum panels. Fire tested with 1&quot; thick gypsum studs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound tested with 1/4&quot; thick gypsum studs. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: Varies</td>
<td>Limiting Height: 120&quot;</td>
<td>Approx. Weight: 8 psf</td>
<td>Fire Test: UL R2717-19, 21, 8-3-57, UL Design U510; ULC Design WS02</td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
### Walls and Interior Partitions, Noncombustible

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1340</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
<th>35 to 39 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer ⅜&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side of ¾&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 8&quot; o.c. at edges and 12&quot; o.c. at intermediate studs. Joints staggered 24&quot; on opposite sides. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 27½&quot;</td>
<td>Approx. Weight: 8 psf</td>
<td>Fire Test: OSU T-8296, 10-1-65</td>
<td>Sound Test: RAL TL64-244, 5-6-64</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1350</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
<th>35 to 39 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer ⅛&quot; type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of ¾&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 8&quot; o.c. at vertical joints and 12&quot; o.c. at floor and ceiling runners and intermediate studs. Joints staggered 24&quot; on opposite sides. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 47½&quot;</td>
<td>Approx. Weight: 6 psf</td>
<td>Fire Test: FM WP-45, 6-19-66; OSU T-1770, 8-61; ULC 797484, 797599, 797497, 8-12-91; ULC Design W415</td>
<td>Sound Test: NGC 2005004, 6-15-05 RAL TL60-114, 4-11-06</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1370</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
<th>35 to 39 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Plaster, Gypsum Lath, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⅛&quot; 1:2 gypsum-sand plaster applied over ⅜&quot; type X gypsum lath applied at right angles to each side of 2½&quot; steel studs 24&quot; o.c. with two 1&quot; Type S drywall screws at each stud and two butt joint clips per lath at lath ends. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 4½&quot;</td>
<td>Approx. Weight: 14 psf</td>
<td>Fire Test: UC, 12-21-65</td>
<td>Sound Test: RAL TL63-268, 6-4-63</td>
</tr>
</tbody>
</table>
### WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE:

#### GA FILE NO. WP 1380

**SOLID GYPSUM PLASTER, METAL LATH, METAL CHANNEL**

2" solid 1:1½ gypsum-sand plaster applied over 2.5 lb. metal lath wire tied 6" o.c. to one side of ¾" cold rolled channel studs 16" o.c. embedded in the plaster. (NLB)

- **Thickness:** 2"  
- **Limiting Height:** 120"  
- **Approx. Weight:** 18 psf  
- **Fire Test:** OSU T-122, 3-16-48  
- **Sound Test:** BMS 144/523, 2-25-55; NBS Monograph 77, 11-30-64

#### GA FILE NO. WP 1390

**SOLID GYPSUM PLASTER, METAL LATH**

1" 1:2 gypsum-sand plaster applied over each side of ¾" rib metal lath to form 2" solid studless wall. (NLB)

- **Thickness:** 2"  
- **Limiting Height:** 105"  
- **Approx. Weight:** 18 psf  
- **Fire Test:** OSU T-162, 4-28-51  
- **Sound Test:** BMS 144/527, 2-25-55; NBS Monograph 77, 11-30-64

#### GA FILE NO. WP 1400

**GYPSUM PLASTER, METAL LATH, STEEL STUDS**

¾" 1:2:1:3 gypsum-sand plaster applied over 3.4 lb. metal lath wire tied 6" o.c. to each side of 1¾" open or punched web steel studs 16" o.c. (NLB)

- **Thickness:** 3¼"  
- **Approx. Weight:** 18 psf  
- **Fire Test:** OSU T-1511, 9-23-60  
- **Sound Test:** RAL TL61-2, 9-8-60
## WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE

### GA FILE NO. WP 1470

**PROPRIETARY**

**GYPSUM WALLBOARD, RESILIENT CHANNELS, STEEL STUDS, MINERAL FIBER INSULATION**

Resilient channels 24" o.c. attached at right angles to ONE SIDE of 31/4" 20 gage steel studs 24" o.c. with one 1/2" Type S-12 drywall screw at each stud. Base layer 1/4" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to channels with 1" Type S drywall screws 24" o.c. Face layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to channels with 1/4" Type S drywall screws 12" o.c. 3\(\times\)3\(\times\)mineral fiber insulation, 2 pcf, friction fit in stud space.

OPPOSITE SIDE: Base layer 1/4" proprietary type X gypsum wallboard applied parallel to with 1" Type S-12 drywall screws 24" o.c. Face layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to studs with 1/4" Type S-12 drywall screws 12" o.c.

Joints staggered 24" each layer and side. (NLB)

**PROPRIETARY GYPSUM BOARD**

- **American Gypsum Company**
  - 1/4" FireRock® Type C
- **BPI America Inc.**
  - 1/2" ProRock® Type C Gypsum Panels
- **BPB Canada Inc.**
  - 1/2" ProRock® Type C Gypsum Panels
- **G-P Gypsum**
  - 1/4" ToughRock® Fireguard® C
- **LaFarge North America Inc.**
  - 1/4" FireRock® Type C
- **National Gypsum Company**
  - 1/2" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard
- **Temple-Inland Forest Products Corporation**
  - 1/4" FireRock® Type C
- **United States Gypsum Company**
  - 1/4" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels

### GA FILE NO. WP 1505

**PROPRIETARY**

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 1/2" proprietary type X gypsum wallboard applied at right angles to each side of 21/4" steel studs 24" o.c. with 1" Type S drywall screws 12" o.c. Face layer 1/4" proprietary type X gypsum wallboard applied parallel to each side with vertical joints midway between studs. Face layer attached to base layer only with 11/4" Type G drywall screws 12" o.c. at vertical joints and centerline of face layer gypsum board. 1/4" to 1/2" diameter adhesive beads around the perimeter of face board, 2" from each edge one end, and in the form of an X joining the corners of the perimeter bands, are optional.

Joints staggered 24" each layer and side. Sound tested with adhesive attachment and 21/2" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

- **BPI Canada Inc.**
  - 1/2" ProRock® Type C Gypsum Panels
- **G-P Gypsum**
  - 1/2" ProRock® Type X Gypsum Panels
  - 1/4" ToughRock® Fireguard® C
  - 1/4" ToughRock® Fireguard® C

### GA FILE NO. WP 1510

**GENERIC**

**GYPSUM WALLBOARD, STEEL STUDS, GLASS FIBER INSULATION**

Base layer 1/4" type X gypsum wallboard or gypsum veneer base applied parallel to each side of 31/4" steel studs 24" o.c. with 1" Type S drywall screws 32" o.c. 2" glass fiber insulation, 0.9 pcf, stapled to one side in stud space.

Face layer 1/4" type X gypsum wallboard or gypsum veneer base applied parallel to ONE SIDE with 11/4" Type S drywall screws 12" o.c. at edges and 24" o.c. at intermediate studs.

OPPOSITE SIDE: Second layer 1/2" type X gypsum wallboard or gypsum veneer base applied parallel to studs with 11/4" Type S drywall screws 12" o.c. Face layer 1/4" or 1/4" regular gypsum wallboard lami oxidized parallel to studs with 1/4" dabs of adhesive spaced 12" o.c. each direction.

Joints staggered 24" each layer and side. (NLB)

**Thickness:** 61/4" - 61/2" Varies

**Approx. Weight:** 11 psf

**Fire Test:** UL 57208-1, 9-21-68,
UL Design U406

**Sound Test:** RAL TL69-118, 12-16-68

---

*Contact the manufacturer for more detailed information on proprietary products.*
**WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE**

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1515</th>
<th>PROPRIETARY*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS,</strong></td>
<td></td>
</tr>
<tr>
<td><strong>MINERAL FIBER INSULATION, CEMENTITIOUS BACKER UNIT,</strong></td>
<td></td>
</tr>
<tr>
<td><strong>CERAMIC TILE</strong></td>
<td></td>
</tr>
<tr>
<td>Base layer ½&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side of 3½&quot; 20 gage steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 24&quot; o.c. 3&quot; proprietary mineral fiber insulation, 2.0 pd; friction fit in stud space. Face layer ½&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to ONE SIDE with 1¼&quot; Type S drywall screws 12&quot; o.c. Joints offset 24&quot; o.c. from base layer joints.</td>
<td></td>
</tr>
<tr>
<td><strong>OPPOSITE SIDE:</strong> Face layer ½&quot; proprietary cementitious backer unit applied at right angles with 1¼&quot; Type S-12 wafer head screws 8° o.c. Vertical joints offset 24&quot; from base layer vertical joints. Joints covered with glass fiber mesh tape. Ceramic tile, ¼&quot; thick, joints groused, installed with latex-modified portland cement mortar or ANSI A136.1 Type I organic adhesive. (NLB)</td>
<td></td>
</tr>
</tbody>
</table>

**PROPRIETARY GYPSUM BOARD**
- American Gypsum Company - ½" FireBloc® Type C
- Lafarge North America Inc. - ½" FireBlock® Type C
- National Gypsum Company - ½" Gold Bond® Brand FIRE-SHIELD C®
- Temple-Inland Forest Products Corporation - ½" TG-C
- United States Gypsum Company - ½" SHEETROCK® Brand FIRECODE® C

**GA FILE NO. WP 1516 | GENERIC**

**GYPSUM WALLBOARD, STEEL STUDS,**
**GLASS FIBER INSULATION**

Base layer ¾" type X gypsum wallboard or gypsum veneer base applied parallel to a double row of 3½" 20 gage steel studs 24" o.c. and not less than 2" apart with 1¼" Type S-12 drywall screws 12" o.c. at edges and Intermediate studs. Each row of studs horizontally braced with 1¼" wide by 20 gage steel strap attached to the interior side of the studs at midheight with one ½" Type G-12 panhead screw at each stud. ½" glass fiber insulation, 0.5 pd, on each side in stud space. Face layer ¾" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1¼" Type S-12 drywall screws 12" o.c. at joints, floor and ceiling runners, and intermediate studs.

Joints staggered 24" each layer and side. (LOAD-BEARING)

**Thickness:** 11½"
**Approx. Weight:** 10 pcf
**Fire Test:** UL R21113, 02NK44925, 5-13-03, UL Design V446, UL Design V446
**Sound Test:** NSC 2003097, 4-23-03

*Contact the manufacturer for more detailed information on proprietary products.*
### WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1520</th>
<th>PROPRIETARY*</th>
<th>2 HOUR FIRE</th>
<th>55 to 59 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, RESILIENT CHANNELS, STEEL STUDS, MINERAL FIBER INSULATION</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resilient channels 24&quot; o.c. attached at right angles to ONE SIDE of 3½&quot; 20 gage steel studs 24&quot; o.c. with one ½&quot; Type S-12 drywall screw at each stud. Base layer ⅝&quot; proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to channels with 1&quot; Type S drywall screws 24&quot; o.c. Face layer ⅝&quot; proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to channels with ⅛&quot; Type S drywall screws 12&quot; o.c. 3&quot; mineral fiber insulation, 2 pcf, friction fit in stud space.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPPOSITE SIDE: One layer ⅝&quot; proprietary type X gypsum wallboard applied parallel to studs with 1&quot; Type S-12 drywall screws 12&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Gypsum Company</td>
<td>½&quot; FireBlock® Type C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPR America Inc.</td>
<td>½&quot; ProRock® Type C Gypsum Panels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPR Canada Inc.</td>
<td>½&quot; ProRock® Type C Gypsum Panels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G-P Gypsum</td>
<td>⅛&quot; ToughRock® Fireguard® C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lafarge North America Inc.</td>
<td>⅛&quot; Firecheck® Type C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Gypsum Company</td>
<td>⅛&quot; Gold Bond® Brand FIRE-SHIELD CM® Gypsum Wallboard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td>⅛&quot; TG-C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States Gypsum Company</td>
<td>½&quot; SHEETROCK® Brand FIRECODE® C Gypsum Panels</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1521</th>
<th>GENERIC</th>
<th>2 HOUR FIRE</th>
<th>55 to 59 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer ⅝&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side of 3½&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 24&quot; o.c. Face layer ⅝&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side with ⅛&quot; Type S drywall screws 12&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. Sound tested with 3½&quot; glass fiber friction fit in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1522</th>
<th>GENERIC</th>
<th>2 HOUR FIRE</th>
<th>55 to 59 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer ⅝&quot; type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 3½&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 24&quot; o.c. Face layer ⅝&quot; type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side with ⅛&quot; Type S drywall screws 12&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. Sound tested with 3½&quot; glass fiber friction fit in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
### Walls and Interior Partitions, Noncombustible

<table>
<thead>
<tr>
<th>GA FILE NO.</th>
<th>WP 1530</th>
<th>2 HOUR FIRE</th>
<th>50 to 54 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side of 2½&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 12&quot; o.c. Face layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1½&quot; Type S drywall screws 12&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. Sound tested with 1½&quot; mineral fiber insulation stapled in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thickness: 3½&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approx. Weight: 9 psf</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fire Test: UC, 12-7-64</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Field Sound Test: ACI 1131a, 7-14-64</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO.</th>
<th>WP 1545</th>
<th>2 HOUR FIRE</th>
<th>50 to 54 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side of 2½&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 24&quot; o.c. Face layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1½&quot; Type S drywall screws 12&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. Sound tested with 1½&quot; mineral fiber insulation friction fit in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thickness: 4½&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approx. Weight: 9 psf</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fire Test: UC, 9-7-64; ULC 807495, 3-26-81, ULC Design W414</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sound Test: CK 654-40, 9-7-65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO.</th>
<th>WP 1546</th>
<th>2 HOUR FIRE</th>
<th>50 to 54 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side of 2½&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 24&quot; o.c. Face layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1½&quot; Type S drywall screws 12&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. Sound tested with 2½&quot; glass fiber friction fit in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thickness: 4½&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approx. Weight: 9 psf</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fire Test: See WP 1546 (UC, 9-7-64; ULC 807495, 3-26-81, ULC Design W414)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sound Test: NRCC 798-NV, 2-2-61</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO.</th>
<th>WP 1548</th>
<th>2 HOUR FIRE</th>
<th>50 to 54 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 3/4&quot; type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 2½&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 24&quot; o.c. Face layer ¾&quot; type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side with 1½&quot; Type S drywall screws 12&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. Sound tested with 2½&quot; glass fiber insulation friction fit in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thickness: 5&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approx. Weight: 12 psf</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fire Test: WHI-495-0236, 1-30-80</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sound Test: WHI-218-1, 6-11-80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GA FILE NO. WP 1560</td>
<td>GENERIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GYPSUM VENEER PLASTER, GYPSUM VENEER BASE, STEEL STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer ½&quot; type X gypsum veneer base applied parallel to each side of 2½&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 24&quot; o.c. at vertical joints and intermediate studs.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face layer ½&quot; type X gypsum veneer base applied parallel to each side with ⅛&quot; Type S drywall screws 12&quot; o.c. at vertical joints and intermediate studs. ⅛&quot; gypsum veneer plaster applied over each side.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. Sound tested with 1&quot; mineral fiber insulation stapled in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Thickness: 4½" |
| Approx. Weight: 10 psf |
| Fire Test: UL 5085-7, R4142, 12-1-66 (Rev. 1-16-80), UL Design U424 |
| Sound Test: CK 654-66, 12-29-65 |

---

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1565</th>
<th>PROPRIETARY*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS, MINERAL FIBER INSULATION, CEMENTITIOUS BACKER UNIT</strong></td>
<td></td>
</tr>
<tr>
<td>Base layer ½&quot; proprietary type X gypsum wallboard or veneer base applied parallel to each side of 3¼&quot; 25 gage steel studs 16&quot; o.c. with 1½&quot; Type S drywall screws 24&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>Face layer ½&quot; proprietary type X gypsum wallboard or veneer base applied parallel to ONE SIDE with ⅛&quot; Type S drywall screws 12&quot; o.c. 3&quot; mineral fiber insulation batts, 2½&quot; c.f. in stud space.</td>
<td></td>
</tr>
</tbody>
</table>

**OPPOSITE SIDE:** Face layer ½" proprietary cementitious backer units applied parallel to studs with ⅛" Type S wafer head screws 8" o.c. |

| Joints staggered 16" each layer and side. (NLB) |

**PROPRIETARY GYPSUM BOARD**

National Gypsum Company - ½" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard

| Thickness: 5½" |
| Approx. Weight: 8 psf |
| Fire Test: ITS J69-32931, 12-11 & 2-5-99, ITS Design NGCWA 120-01; UL R22156, 05CA15728, 11-19-05, UL Design V452 |
| Sound Test: NGC 2039016, 8-23-99 |

---

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1570</th>
<th>PROPRIETARY*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS, MINERAL FIBER INSULATION</strong></td>
<td></td>
</tr>
<tr>
<td>One layer ¼&quot; proprietary type X gypsum wallboard applied parallel to each side of 3½&quot; steel studs 24&quot; o.c. with ⅛&quot; Type S drywall screws 8&quot; o.c. at vertical joints and 12&quot; o.c. at intermediate studs. 3&quot; proprietary mineral fiber insulation, 2½&quot; c.f. friction fit in stud space.</td>
<td></td>
</tr>
</tbody>
</table>

| Joints staggered 24" on opposite sides. (NLB) |

**PROPRIETARY GYPSUM BOARD**

United States Gypsum Company - ¼" SHEETROCK® Brand ULTRACODE® Core Gypsum Panels

| Thickness: 5" |
| Approx. Weight: 7 psf |
| Fire Test: UL R1319, 91NK16132, 11-18-91, UL Design U481 |
| Field Sound Test: USG 910617, 8-28-91 |

*Contact the manufacturer for more detailed information on proprietary products.*
### Walls and Interior Partitions, Noncombustible

#### GA File No. WP 1615

**Generic**

**Gypsum Wallboard, Steel Studs**

Base layer \( \frac{1}{8} \)" type X gypsum wallboard or gypsum veneer base applied parallel to each side of 2\( \frac{1}{2} \)" steel studs 24" o.c. with 1" Type S drywall screws 24" o.c. Face layer \( \frac{1}{8} \)" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1\( \frac{1}{4} \)" Type S drywall screws 12" o.c.

Joints staggered 24" each layer and side. (NLB)

- **Thickness:** 4\( \frac{1}{2} \)"
- **Approx. Weight:** 8 psf
- **Fire Test:**
  - UC, 9-7-64;
  - ULC 60T499, 3-26-81;
  - ULC Design W414
- **Sound Test:** NGC 2259, 1-3-68

#### GA File No. WP 1616

**Generic**

**Gypsum Wallboard, Steel Studs**

Base layer \( \frac{1}{4} \)" type X gypsum wallboard or gypsum veneer base applied parallel to each side of 3\( \frac{1}{4} \)" steel studs 24" o.c. with 1" Type S drywall screws 8" o.c. at vertical joints and 12" o.c. at intermediate studs. Face layer \( \frac{1}{4} \)" plain or predecorated type X gypsum wallboard or gypsum veneer base applied parallel to each side laminating compound combed over entire surface. Metal base and top railiner channels.

Joints staggered 24" each layer and side. (NLB)

- **Thickness:** 6\( \frac{1}{4} \)"
- **Approx. Weight:** 10 psf
- **Fire Test:**
  - UL R1319-31, 6-2-69;
  - UL Design U411
- **Sound Test:** NGC 2005005, 6-15-05

#### GA File No. WP 1625

**Proprietary**

**Gypsum Plaster, Gypsum Lath, Metal Lath, Steel Studs**

One layer \( \frac{1}{4} \)" thick proprietary gypsum lath applied at right angles to each side of 2\( \frac{1}{2} \)" 20 gage steel studs 16" o.c. with 1" Type S drywall screws 8" o.c. Mineral fiber batts (optional) in stud space. 3.4 lb self-furring diamond mesh metal lath applied to each side over gypsum lath with 1" Type S screws. 3\( \frac{1}{4} \)" x 12' gypsum-sand plaster with a lime setting plaster finish applied over each side.

Sound tested with 2" mineral fiber stapled in stud space. (NLB)

- **Proprietary Gypsum Lath**
  - United States Gypsum Company
  - 3/4" ROCKLATH® FIRECODE® C Core Plaster Base

- **Thickness:** 4\( \frac{1}{2} \)"
- **Approx. Weight:** 16 psf
- **Fire Test:**
  - UL R1319, 2-28-90;
  - UL Design U484
- **Sound Test:** CK 664-17, 4-1-66;
  - CK 664-18, 4-8-66

*Contact the manufacturer for more detailed information on proprietary products.*
### Walls and Interior Partitions, Noncombustible

#### GA File No. WP 1630

**Generic**

**2 Hour Fire**

**45 to 49 STC Sound**

**Gypsum Wallboard, Steel Studs**

- Base layer ½" type X gypsum wallboard or gypsum veneer base applied parallel to each side of 2½" steel studs 24" o.c. with 1" Type S drywall screws 12" o.c. at vertical joints and wall perimeter and 36" o.c. at intermediate studs. Face layer ½" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 4" wide strips of drywall laminating adhesive 2" from board edges and 4" of board centerline and 1¼" Type S drywall screws 12" o.c. at wall perimeter and 16" o.c. at intermediate studs.

- Joints staggered 24" each layer and side. (NLB)

**Thickness:** 4½"

**Approx. Weight:** 9 psf

**Fire Test:** OSU T-3218, 9-17-65

**Sound Test:** NGC 2111, 2-6-67

#### GA File No. WP 1632

**Proprietary**

**2 Hour Fire**

**45 to 49 STC Sound**

**Gypsum Wallboard, Glass Mat Gypsum Board, Steel Studs**

- Base layer ¾" proprietary type X gypsum wallboard applied parallel to each side of 2½" steel studs 24" o.c. with 1" Type S drywall screws 24" o.c. Face layer ¾" proprietary glass mat water-resistant gypsum backing board applied parallel to each side with 1¾" Type S drywall screws 8" o.c. at vertical joints and 12" o.c. at intermediate studs and wall perimeter.

- Joints staggered 24" each layer and side and covered with 10 x 10 mesh glass tape and tile adhesive. (NLB)

**Thickness:** 4½"

**Approx. Weight:** 9 psf

**Fire Test:** CTC 1824-1630, 1-15-88

**Sound Test:** See WP 1615 (NGC 2250, 1-3-68)

#### GA File No. WP 1635

**Generic**

**2 Hour Fire**

**45 to 49 STC Sound**

**Gypsum Wallboard, Steel Studs**

- Base layer ¾" type X gypsum wallboard or gypsum veneer base applied parallel to each side of 3½" 20 gauge steel studs 24" o.c. with 1" Type S-12 drywall screws 12" o.c. Second layer ¾" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1¾" Type S-12 drywall screws 12" o.c. Face layer ¾" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side with 1¾" Type S-12 drywall screws 12" o.c. and 1½" Type G screws 12" o.c. midway between studs. Studs attached to each side of floor and ceiling runners by welding or with ½" Type S-12 panhead screws.

- Joints staggered 24" each layer and side. 

**Bracing:** Lateral bracing spaced not over 40" o.c. shall be 1" by 18 gage steel strap attached to each side or channel bracing attached to each stud with a clip angle. For studs with holes or punch-outs in the web the "Q" factor shall be determined by means of stub column tests. Tested at 100 percent of design load. (LOAD-BEARING)

**Thickness:** 6½"

**Approx. Weight:** 11 psf

**Fire Test:** UL NC 505-4, 7-29-82, UL Design U428

**Sound Test:** Estimated

#### GA File No. WP 1714

**Generic**

**2 Hour Fire**

**40 to 44 STC Sound**

**Gypsum Wallboard, Steel Studs**

- Base layer ½" type X gypsum wallboard or gypsum veneer base applied parallel to 2½" 18 gage steel studs 16" o.c. with 1" Type S-12 drywall screws 12" o.c. Face layer ½" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1½" Type S-12 drywall screws 12" o.c. Studs attached to each side of floor and ceiling runners by welding.

- Joints staggered ½" each layer and side.

**Bracing:** Lateral bracing on each side shall be ¾" cold rolled channel at ½ points screw attached with ¾" Type S-12 drywall screws. Tested at 100 percent of design load. (LOAD-BEARING)

**Thickness:** 5½"

**Approx. Weight:** 10 psf

**Fire Test:** FM WP 199-2, 1-26-71

**Sound Test:** See WP 1615 (NGC 2250, 1-3-68)
### WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE

#### GYPSUM WALLBOARD, STEEL STUDS

**GA FILE NO. WP 1716**

**Generics**

**2 HOUR FIRE**

**40 to 44 STC SOUND**

**Base layer ¾" type X gypsum wallboard or gypsum veneer base applied parallel to each side of 3½" 20 gage steel studs 24" o.c. with 1" Type S-12 drywall screws 12" o.c. Face layer ¾" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1½" Type S-12 drywall screws 12" o.c. Studs attached to each side of floor and ceiling runners by welding or with ½" Type S-12 panhead screws. Joints staggered 24" each layer and side.**

**Bracing:** Lateral bracing spaced not over 40" o.c. shall be 1" by 18 gage steel straps attached to each side or channel bracing attached to each stud with a clip angle. For studs with holes or punch-outs in the web the "C" factor shall be determined by means of stub column tests. Tested at 60 percent of design load. (LIMITED LOAD-BEARING)

**Thickness:** 6"
**Approx. Weight:** 10 pcf

**Fire Test:** UL No. 505-6, 7-29-82, UL Design U425
**Sound Test:** See WP 1615

(Based on NGC 2250, 1-3-88)

#### SEMI-SOLID GYPSUM WALLBOARD, GYPSUM STUDS

**GA FILE NO. WP 1830**

**Generics**

**2 HOUR FIRE**

**35 to 39 STC SOUND**

**Base layer ½" type X gypsum wallboard or gypsum veneer base applied parallel to each side of 1¼" x 6" type X gypsum board studs 24" o.c. with laminating compound combed over entire surface of gypsum studs and 2" Type G drywall screws 24" o.c. Face layer ½" type X gypsum wallboard or gypsum veneer base applied parallel to each side with laminating compound combed over entire contact surface, 2" Type G drywall screws 24" o.c. at gypsum studs and 1½" Type S drywall screws 24" o.c. at floor and ceiling channels. Joints staggered 24" each layer and side. (NLB)

**Thickness:** 5½"
**Limiting Height:** 140"
**Approx. Weight:** 10 pcf

**Fire Test:** UC, 2-8-82
**Sound Test:** See WP 1330

(Based on GA/H BW-8FT, 8-1-82)

#### SOLID GYPSUM WALLBOARD

**GA FILE NO. WP 1841**

**Proprietary**

**2 HOUR FIRE**

**35 to 39 STC SOUND**

**One layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side of 1" x 24" proprietary type X gypsum panels with laminating compound combed over the entire contact surface and 1¾" Type S screws 24" o.c. horizontally and vertically. 1" gypsum coreboard panels attached to 25 gage 1" x 2½" high "L" runners along floor and ceiling lines with two 1¾" Type S screws at top and bottom. Wallboard layers attached to "L" runners with ½" Type S screws 12" o.c.**

**Joints staggered 12" on opposite sides. (NLB)**

**Thickness:** 2"
**Limiting Height:** Refer to manufacturer
**Approx. Weight:** 8 pcf

**Fire Test:** UL P3501, S2NH2R896, 6-4-93, UL Design U525; FM WP-668, 6-28-82
**Sound Test:** Based on NGC 2359, 11-18-69

---

*Contact the manufacturer for more detailed information on proprietary products.*
## WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE

### GA FILE NO. WP 1870

<table>
<thead>
<tr>
<th>PROPRIETARY*</th>
<th>2 HOUR FIRE</th>
<th>35 to 39 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOLID GYPSUM WALLBOARD, PROTECTED STEEL H MEMBERS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two 1&quot; x 24&quot; proprietary type X gypsum panels installed vertically between floor and ceiling runners and friction fit into 2&quot; steel members 24&quot; o.c. One layer 1/2&quot; x 5&quot; wide strips proprietary type X gypsum wallboard applied to each side over steel flanges and runners with 1&quot; Type S drywall screws 12&quot; o.c. (NLB)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-P Gypsum</td>
<td>Thickness: 3&quot;</td>
<td></td>
</tr>
<tr>
<td>- 1/4&quot; ToughRock® Fireguard® C</td>
<td>Approx. Weight: 9 lb/pf</td>
<td></td>
</tr>
<tr>
<td>- 1&quot; ToughRock® Fireguard® Shaftliner</td>
<td>Fire Test: WHI 495-0743, 1-28-88; WHI 495-0744, 1-30-88; CTC 1869-0438, 9-22-87</td>
<td></td>
</tr>
<tr>
<td>Sound Test: Estimated</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GA FILE NO. WP 1930

<table>
<thead>
<tr>
<th>GENERIC</th>
<th>2 HOUR FIRE</th>
<th>30 to 34 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOLID GYPSUM PLASTER, METAL CHANNEL, METAL LATH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21/2&quot; solid 1:2 or 1:3 gypsum-perlite plaster applied over 3.4 lb metal lath wire tied 6&quot; o.c. to one side of 4/4&quot; cold rolled channel studs 16&quot; o.c. embedded in the plaster. (NLB)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Thickness: 21/2&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Limiting Height: 12'0&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approx. Weight: 12 psi</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fire Test: UL R3453, 2-13-52</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sound Test: See WP 1380</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(BMS 144/523, 2-26-55; NBS Monograph 77, 11-30-64)</td>
<td></td>
</tr>
</tbody>
</table>

### GA FILE NO. WP 1941

<table>
<thead>
<tr>
<th>PROPRIETARY*</th>
<th>2 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS, MINERAL FIBER INSULATION</strong></td>
<td></td>
</tr>
<tr>
<td>One layer 7/8&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 31/2&quot; 20 gauge steel studs 24&quot; o.c. with 7/8&quot; Type S drywall screws 5&quot; o.c. at vertical edges and either 12&quot; o.c. at intermediate studs when applied parallel to studs or 8&quot; o.c. at intermediate studs when applied at right angles to studs. 3&quot; mineral fiber insulation, 3.0 psi, friction fit in stud space.</td>
<td></td>
</tr>
<tr>
<td>Vertical joints staggered 24&quot; on opposite sides. (NLB)</td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td>Thickness: 5&quot;</td>
</tr>
<tr>
<td>United States Gypsum Company</td>
<td>Approx. Weight: 7 psi</td>
</tr>
<tr>
<td>- 3/4&quot; SHEETROCK® Brand ULTRACODE® Core Gypsum Panels</td>
<td>Fire Test: UL R1319, 91NK16132, 11-18-91 (rev. 12-15-92), UL Design U481; UL R1319, 91NK11681, 4-3-97, UL Design U419</td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
### WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1942</th>
<th>PROPRIETARY*</th>
<th>2 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS, MINERAL FIBER INSULATION, CEMENTITIOUS BACKER UNITS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer ½&quot; proprietary type X gypsum wallboard or gypsum sheathing applied parallel or at right angles to each side of 3½&quot; 20 gauge steel studs 16&quot; o.c. with 1½&quot; Type S drywall screws 12&quot; o.c. Face layer ½&quot; or ¾&quot; proprietary cementitious backer units applied parallel or at right angles to studs with 1½&quot; corrosion resistant Type S-12 washer-head screws 8&quot; o.c. 3&quot; mineral fiber insulation, 2.0 pcf, friction fit in stud space.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OPPOSITE SIDE:</strong> Base layer ¾&quot; proprietary type X gypsum board or gypsum veneer base applied parallel or at right angles to studs with 1½&quot; Type S drywall screws 16&quot; o.c. Face layer ¾&quot; proprietary type X gypsum board or gypsum veneer base applied parallel or at right angles to studs with 1½&quot; Type S drywall screws 16&quot; o.c.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical joints staggered 16&quot; each layer and side, horizontal joints staggered 12&quot; each layer and side. (LOAD-BEARING)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States Gypsum Company - ¾&quot; SHEETROCK® Brand FIRECODE® Core Gypsum Panels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 5½&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 10 psf</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 1943</th>
<th>PROPRIETARY*</th>
<th>2 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer ¾&quot; proprietary type X gypsum wallboard applied parallel to each side of 3½&quot; 25 gauge steel studs 24&quot; o.c. with 1½&quot; Type S drywall screws 8&quot; o.c. at vertical joints and wall perimeter and 12&quot; o.c. at intermediate studs. Second layer ¾&quot; proprietary type X gypsum wallboard applied parallel to studs ONE SIDE ONLY with 1½&quot; Type S drywall screws 12&quot; o.c. Face layer ¾&quot; proprietary type X gypsum wallboard applied parallel to studs ONE SIDE ONLY with 2½&quot; Type S drywall screws 8&quot; o.c. at vertical joints and wall perimeter and 12&quot; o.c. at intermediate studs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical joints staggered 24&quot; each layer and side. (NLB)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Gypsum Company - ¾&quot; Gold Bond® Brand FIRE-SHIELD® Gypsum Wallboard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 6&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 9 psf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL R3501, 03NK13365, 10-27-03, UL Design V449</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 2800</th>
<th>PROPRIETARY*</th>
<th>3 HOUR FIRE</th>
<th>55 to 59 FSTC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer ½&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side of 1½&quot; steel studs 24&quot; o.c. with 1½&quot; Type S drywall screws 24&quot; o.c. Second layer ½&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1½&quot; Type S drywall screws 24&quot; o.c. Face layer ½&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side with 2½&quot; Type S drywall screws 12&quot; o.c. and 1½&quot; Type G drywall screws midway between studs 1½&quot; above and below horizontal joints for right angle application.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joints staggered 24&quot; each layer and side. Sound tested with ½&quot; mineral fiber insulation friction fit in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States Gypsum Company - ½&quot; SHEETROCK® Brand FIRECODE® C Core Gypsum Panels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 4½&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 13 psf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL R1319-138, 139, 5-27-82, UL Design U435</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field Sound Test: SA 30012, 1-12-83</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE

**GA FILE NO. WP 2921**

**PROPRIETARY**

3 HOUR FIRE

50 to 54 STC SOUND

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side of 1 1/4" steel studs 24" o.c. with 1" Type S drywall screws 12" o.c. Joints staggered 24" on opposite sides. Second layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1/4" Type S drywall screws 30" o.c. and 1 1/4" Type G drywall screws 12" o.c. spaced 1 1/2" from vertical joints. Vertical joints located 8" from studs and staggered 24" on opposite sides. Face layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to each side with 1/4" Type S drywall screws 12" o.c. and 1 1/2" Type G drywall screws midway between studs 1 1/2" above and below horizontal joints. Joints offset 24" from second layer joints.

Sound tested with 1 1/2" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

National Gypsum Company - 1/2" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard

**GA FILE NO. WP 2922**

**PROPRIETARY**

3 HOUR FIRE

50 to 54 STC SOUND

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 1/2" proprietary type X gypsum wallboard applied parallel to each side of 1 1/4" steel studs 24" o.c. with 1" Type S drywall screws 30" o.c. Second layer 1/2" proprietary type X gypsum wallboard applied at parallel or at right angles to each side with 1/4" Type S drywall screws 24" o.c. Face layer 1/2" proprietary type X gypsum wallboard applied at right angles to each side with 1/4" Type S drywall screws 12" o.c. and 1 1/2" Type G drywall screws midway between studs 1 1/2" above and below horizontal joints.

Joints staggered 24" each layer and side. Sound tested with 1 1/2" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

American Gypsum Company - 1/2" FireBlock® Type C®
BPB America Inc. - 1/2" ProBoard® Type C Gypsum Panels
BPB Canada Inc. - 1/2" ProBoard® Type C Gypsum Panels
G-P Gypsum - 1/2" ToughRock® Fireguard® C
LaFarge North America Inc. - 1/2" FLAME CURB® Super C™
PABCO Gypsum - 1/2" TG-C
Temple-Inland Forest Products Corporation -

**GA FILE NO. WP 2924**

**PROPRIETARY**

3 HOUR FIRE

50 to 54 STC SOUND

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side of 1 1/4" steel studs 24" o.c. with 1" Type S drywall screws 12" o.c. Second layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1 1/4" Type S drywall screws 12" o.c. Face layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to each side with 1/4" Type S drywall screws 12" o.c. and 1 1/2" Type G drywall screws 24" o.c. midway between studs and 1 1/2" above and below horizontal joints.

Joints staggered 24" each layer and side. Sound tested with 1 1/2" mineral fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

BPB Canada Inc. - 1/2" ProBoard® Type C Gypsum Panels

*Contact the manufacturer for more detailed information on proprietary products.*
**WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE**

**GA FILE NO. WP 2939**

**GYPSUM WALLBOARD, STEEL STUDS**
Base layer 1⁄4" proprietary type X gypsum wallboard applied parallel to each side of 1½" steel studs 24" o.c. with 1½" Type S drywall screws 48" o.c. Face layer ¼" proprietary type X gypsum wallboard applied parallel or at right angles to each side with 1½" long Type S drywall screws 12" o.c. and 1½" Type G screws midway between studs along horizontal joints.

Joints staggered 24" each layer and side. (NLB)

**PROPRIETARY GYPSUM BOARD**
United States Gypsum Company - ¼" SHEETROCK® Brand ULTRACODE® Core Gypsum Panels

- Thickness: 4½"
- Approx. Weight: 11 psf
- Fire Test: UL R1319, 92NK18757, 8-17-92; UL Design U435

**GA FILE NO. WP 2945**

**GYPSUM WALLBOARD, STEEL STUDS**
Base layer ¼" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side of 1½" steel studs 24" o.c. with 1" Type S drywall screws 48" o.c. Second layer ¼" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1½" Type S drywall screws 48" o.c. Third layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1½" Type S drywall screws 48" o.c. Face layer ½" proprietary gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side with 2½" Type S drywall screws 12" o.c. and 1½" Type G screws midway between studs 1½" above and below horizontal joints for right angle application.

Joints staggered 24" each layer and side. Sound tested with ½" mineral fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**
United States Gypsum Company - ¼" SHEETROCK® Brand FIRECODE® G Core Gypsum Panels

- Thickness: 5½"
- Approx. Weight: 17 psf
- Fire Test: UL R1319-138, 139, 6-27-82; UL Design U435
- Field Sound Test: SA 830713, 1-13-83

**GA FILE NO. WP 2960**

**GYPSUM WALLBOARD, STEEL STUDS**
Base layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side of 1½" steel studs 24" o.c. with 1" Type S drywall screws 48" o.c. at studs and 24" o.c. at floor and ceiling runners. Joints staggered 24" on opposite sides. Second layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1½" Type S drywall screws 12" o.c. Joints aligned with base layer joints. Third layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 2½" Type S drywall screws 30" o.c. and 1½" Type G drywall screws 12" o.c. spaced 1½" from vertical joints. Vertical joints located 8" from studs and staggered 24" on opposite sides. Face layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to each side with 2½" Type S drywall screws 12" o.c. and 1½" Type G drywall screws midway between studs 1½" above and below horizontal joints. Joints offset 24" from third layer joints.

Sound tested with ½" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**
National Gypsum Company - ½" Gold Bond® Brand FIRE-SHIELD CN® Gypsum Wallboard

- Thickness: 5½"
- Approx. Weight: 19 psf
- Fire Test: UL F53591, 92NK28896, 9-15-93; UL Design U435; WHI-694-108.1, 6-28-83
- Sound Test: NGC 2934, 7-20-83

*Contact the manufacturer for more detailed information on proprietary products.*
# Walls and Interior Partitions, Noncombustible

## Proprietary Gypsum Wallboard, Steel Studs

<table>
<thead>
<tr>
<th>GA FILE NO. WP 2961</th>
<th>PROPRIETARY*</th>
<th>4 HOUR FIRE</th>
<th>55 to 59 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/2&quot; proprietary type X gypsum wallboard applied parallel to each side of 15/16&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 48&quot; o.c. Second layer 1/2&quot; proprietary type X gypsum wallboard applied parallel to each side with 15/16&quot; Type S drywall screws 35° o.c. Third layer 1/2&quot; proprietary type X gypsum wallboard applied parallel or at right angles to each side with 21/2&quot; Type S drywall screws 24&quot; o.c. and 11/2&quot; Type G drywall screws midway between studs 35° o.c. vertically. Face layer 1/2&quot; proprietary type X gypsum wallboard applied at right angles to each side with 21/2&quot; Type S drywall screws 12&quot; o.c. and 11/2&quot; Type G drywall screws midway between studs 11/2&quot; above and below horizontal joints. Joints staggered 24&quot; each layer and side. Sound tested with 11/2&quot; glass fiber insulation friction fit in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proprietary Gypsum Board</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Gypsum Company</td>
<td>-</td>
<td>1/2&quot; FireBlood® TYPE C</td>
<td></td>
</tr>
<tr>
<td>BPI America Inc.</td>
<td>-</td>
<td>1/2&quot; ProRock® Type C Gypsum Panels</td>
<td></td>
</tr>
<tr>
<td>BPB Canada Inc.</td>
<td>-</td>
<td>1/2&quot; ProRock® Type C Gypsum Panels</td>
<td></td>
</tr>
<tr>
<td>G-P Gypsum</td>
<td>-</td>
<td>1/2&quot; ToughRock® Fireguard® C</td>
<td></td>
</tr>
<tr>
<td>Latrobe North America Inc.</td>
<td>-</td>
<td>1/2&quot; FireRock® Type C</td>
<td></td>
</tr>
<tr>
<td>PABCO Gypsum</td>
<td>-</td>
<td>1/2&quot; FLAME CURB® Super &quot;C&quot;™</td>
<td></td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td>-</td>
<td>1/2&quot; TG-L</td>
<td></td>
</tr>
</tbody>
</table>

## Proprietary Gypsum Wallboard, Steel Studs

<table>
<thead>
<tr>
<th>GA FILE NO. WP 2963</th>
<th>PROPRIETARY*</th>
<th>4 HOUR FIRE</th>
<th>55 to 59 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/2&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side of 15/16&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 12&quot; o.c. Second layer 1/2&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 15/16&quot; Type S drywall screws 12&quot; o.c. Third layer 1/2&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 21/2&quot; Type S drywall screws 12&quot; o.c. Face layer 1/2&quot; proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to studs with 21/2&quot; Type S drywall screws 12&quot; o.c. and 11/2&quot; Type G drywall screws 24&quot; o.c. midway between studs and 11/2&quot; above and below horizontal joints. Joints staggered 24&quot; each layer and side. Sound tested with 11/2&quot; thick mineral fiber insulation in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proprietary Gypsum Board</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPB Canada Inc.</td>
<td>-</td>
<td>1/2&quot; ProRock® Type C Gypsum Panels</td>
<td></td>
</tr>
<tr>
<td>Thickness: 51/2&quot;</td>
<td>Approx. Weight: 19 psf</td>
<td>Fire Test: UL 851381, 11-14-85; UL Design W416</td>
<td>Sound Test: NRCC 1074-NV, 6-18-86</td>
</tr>
</tbody>
</table>

## Proprietary Gypsum Wallboard, Steel Studs, Mineral Fiber Insulation

<table>
<thead>
<tr>
<th>GA FILE NO. WP 2964</th>
<th>PROPRIETARY*</th>
<th>4 HOUR FIRE</th>
<th>55 to 59 FSTC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs, Mineral Fiber Insulation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/4&quot; proprietary type X gypsum wallboard applied parallel to each side of 21/2&quot; steel studs 24&quot; o.c. with 11/4&quot; Type S drywall screws 24&quot; o.c. Face layer 1/4&quot; proprietary type X gypsum wallboard on each side applied parallel or at right angles to each side with 21/2&quot; long Type S drywall screws 12&quot; o.c. and 11/2&quot; Type G drywall screws midway between studs along horizontal joints. 2&quot; proprietary mineral fiber insulation batts, 2.0 psf, in stud spaces. Joints staggered 24&quot; each layer and side. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Proprietary Gypsum Board</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States Gypsum Company</td>
<td>-</td>
<td>3/4&quot; SHEETROCK® Brand ULTRACODE® Core Gypsum Panels</td>
<td></td>
</tr>
<tr>
<td>Thickness: 51/2&quot;</td>
<td>Approx. Weight: 11 psf</td>
<td>Fire Test: UL 1319, 91NK16132, 11-18-91; UL Design U490</td>
<td>Field Sound Test: SA-81087, 9-6-91</td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
WALLS AND INTERIOR PARTITIONS, NONCOMBUSTIBLE

GA FILE NO. WP 2970  PROPRIETARY

GYPSUM WALLBOARD, STEEL STUDS

Base layer ⅝" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side of 1½" steel studs 24" o.c. with 1" Type S drywall screws 48" o.c. at studs and 24" o.c. at floor and ceiling runners. Joints staggered 24° on opposite sides. Second layer ⅝" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1½" Type S drywall screws 12" o.c. Joints aligned with base layer joints. Third layer ⅝" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 2¼" Type S drywall screws 30" o.c. and 1½" Type G drywall screws 12" o.c. spaced 1½" from vertical joints. Vertical joints offset 8" from studs and staggered 24° on opposite sides. Face layer ⅝" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to each side with 2¼" Type S drywall screws 12" o.c. and 1½" Type G drywall screws midway between studs 1½" above and below horizontal joints. Joints offset 24° from third layer joints. (NLB)

PROPRIETARY GYPSUM BOARD
National Gypsum Company - ⅝" Gold Bond® Brand FIRE-SHIELD™ Gypsum Wallboard

4 HOUR FIRE

50 to 54 STC SOUND

Thickness: 5½"
Approx. Weight: 19 psf
Fire Test: UL R3501, 92N026896, 9-15-93,
UL Design U435:
WHL-684-108.1, 6-28-83
Sound Test: NGC 2633, 7-18-93

GA FILE NO. WP 2995  PROPRIETARY

GYPSUM WALLBOARD, STEEL STUDS,
MINERAL FIBER INSULATION

Base layer ¾" proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to 3½" 20 gage steel studs 18" or 24" o.c. with 1¼" Type S-12 drywall screws 24" o.c. Face layer ¾" proprietary type X gypsum wallboard or veneer base applied parallel or at right angles to studs with 2¼" Type S-12 drywall screws 12" o.c. and 1½" Type G drywall screws located midway between studs and 1½" from gypsum board edges at horizontal joints. 3" mineral fiber insulation, 3.0 psf, friction fit in stud space.

Vertical joints staggered one stud cavity each layer and side, horizontal joints staggered 12" each layer and side. (LOAD-BEARING)

PROPRIETARY GYPSUM BOARD
United States Gypsum Company - ¾" SHEETROCK® Brand ULTRACODE® Core Gypsum Panels

4 HOUR FIRE

Thickness: 6½"
Approx. Weight: 14 psf
Fire Test: UL RT1319, 98NK35210,
2-24-99, UL Design U490

This Space Left Blank

*Contact the manufacturer for more detailed information on proprietary products.
### WALLS AND INTERIOR PARTITIONS, WOOD FRAMED

<table>
<thead>
<tr>
<th>GA FILE NO. WP 3010</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
<th>50 to 64 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, RESILIENT CHANNELS, GLASS FIBER INSULATION, WOOD STUDS</strong></td>
<td><strong>RESILIENT CHANNELS 24&quot; O.C. ATTACHED AT RIGHT ANGLES TO ONE SIDE OF 2 X 4 WOOD STUDS 16&quot; O.C. WITH 1&quot; TYPE S DRYWALL SCREWS. BASE LAYER 1/4&quot; TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLES TO CHANNELS WITH 1&quot; TYPE S DRYWALL SCREWS 12&quot; O.C.</strong></td>
<td>Thickness: 6 1/4&quot;&lt;br&gt;Approx. Weight: 12 psf&lt;br&gt;Fire Test: UL R5690-2, 12-3-68&lt;br&gt;Sound Test: UL Design U313 (Rev. 9-4-66)</td>
<td><strong>OPPOSITIVE SIDE: BASE LAYER 1/4&quot; TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL TO STUDS WITH 6D COATED NAILS OR 1/4&quot; HEADS, 32&quot; O.C.</strong>&lt;br&gt;Second layer 1/2&quot; TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL TO STUDS WITH 6D COATED NAILS, 2 1/2&quot; LONG, 0.113&quot; SHANK, 1/4&quot; HEADS, 12&quot; O.C. FACE LAYER 1/4&quot; REGULAR GYPSUM WALLBOARD APPLIED PARALLEL TO STUDS WITH 1/4&quot; DABS OF ADHESIVE 12&quot; O.C. VERTICALLY AND HORIZONTALLY. 2&quot; GLASS FIBER INSULATION, 0.90 PIR, STAPLED TO THREE LAYER SIDE IN STUD SPACE.&lt;br&gt;Joints staggered 16&quot; each layer and side. (LOAD-BEARING)**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 3110</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
<th>55 to 59 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, RESILIENT CHANNELS, GLASS FIBER INSULATION, WOOD STUDS</strong></td>
<td><strong>RESILIENT CHANNELS 24&quot; O.C. ATTACHED AT RIGHT ANGLES TO ONE SIDE OF 2 X 4 WOOD STUDS 16&quot; O.C. WITH 1&quot; TYPE S DRYWALL SCREWS. BASE LAYER 1/4&quot; TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLES TO CHANNELS WITH 1&quot; TYPE S DRYWALL SCREWS 12&quot; O.C.</strong></td>
<td>Thickness: 6 1/4&quot;&lt;br&gt;Approx. Weight: 2 psf&lt;br&gt;Fire Test: UL R3660-2, 12-3-68&lt;br&gt;Sound Test: UL Design U313</td>
<td><strong>OPPOSITIVE SIDE: BASE LAYER 1/4&quot; TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL TO STUDS WITH 6D COATED NAILS, 1 1/4&quot; LONG, 0.066&quot; SHANK, 1/4&quot; HEADS, 32&quot; O.C.</strong>&lt;br&gt;Second layer 1/2&quot; TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL TO STUDS WITH 6D COATED NAILS, 2 1/4&quot; LONG, 0.113&quot; SHANK, 1/4&quot; HEADS, 12&quot; O.C. FACE LAYER 1/4&quot; REGULAR GYPSUM WALLBOARD APPLIED PARALLEL TO STUDS WITH 1/4&quot; DABS OF ADHESIVE 12&quot; O.C. VERTICALLY AND HORIZONTALLY. 2&quot; GLASS FIBER INSULATION, 0.50 PIR, STAPLED TO THREE LAYER SIDE IN STUD SPACE.&lt;br&gt;Joints staggered 16&quot; each layer and side. (LOAD-BEARING)**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 3240</th>
<th>PROPRIETARY*</th>
<th>1 HOUR FIRE</th>
<th>50 to 54 FSTC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, RESILIENT CHANNELS, MINERAL FIBER INSULATION, WOOD STUDS</strong></td>
<td><strong>RESILIENT CHANNELS 24&quot; O.C. ATTACHED AT RIGHT ANGLES TO ONE SIDE OF 2 X 4 WOOD STUDS 16&quot; OR 24&quot; O.C. WITH 1 1/4&quot; TYPE W DRYWALL SCREWS. ONE LAYER 1/4&quot; PROPRIETARY TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL TO CHANNELS WITH 1&quot; TYPE S DRYWALL SCREWS 12&quot; O.C. END JOINTS BACKBLOKED WITH RESILIENT CHANNELS. 3&quot; MINERAL FIBER INSULATION, 2.0 OR 2.3 PIR, IN STUD SPACE.</strong></td>
<td>Thickness: 5 1/4&quot;&lt;br&gt;Approx. Weight: 7 psf&lt;br&gt;Fire Test: UL R1319-93, 94, 120; B-10-66; UL Design U311; ULC Design U311&lt;br&gt;Field Sound Test: BBN 750903, 9-17-76</td>
<td><strong>OPPOSITIVE SIDE: ONE LAYER 1/4&quot; PROPRIETARY TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED AT RIGHT ANGLES TO STUDS WITH 1 1/4&quot; TYPE W DRYWALL SCREWS 12&quot; O.C.</strong>&lt;br&gt;VERTICAL JOINTS STAGGERED 48&quot; ON OPPOSITE SIDES. SOUND TESTED WITH STUDS 16&quot; O.C. AND OPEN FACE OF MINERAL FIBER INSULATION BLANKETS LAYING RESILIENT CHANNEL-SIDE OF STUD SPACE.&lt;br&gt;(LOAD-BEARING)**</td>
</tr>
</tbody>
</table>

---

*Contact the manufacturer for more detailed information on proprietary products.*

---

*United States Gypsum Company - SHEETROCK® Brand FIRECODE® C* Core Gypsum Panels
### Walls and Interior Partitions, Wood Framed

#### GA File No. WP 3241

**Proprietary**

<table>
<thead>
<tr>
<th>1 Hour Fire</th>
<th>50 to 54 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
</tbody>
</table>

**Gypsum Wallboard, Resilient Channels, Mineral Fiber Insulation, Wood Studding**

Resilient channels 24" o.c. attached at right angles to ONE SIDE of 2 x 4 wood studs 16" or 24" o.c. with 1/4" Type S drywall screws. One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to channels with 1" Type S drywall screws 12" o.c. End joints backblocked with resilient channels. 3" mineral fiber insulation, 2.0 or 2.2 psf, in stud space.

**Opposite Side:** One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to studs with 1/2" Type W drywall screws 12" o.c.

Vertical joints staggered 48" on opposite sides. Sound tested with studs spaced 16" o.c. and open face of mineral fiber insulation blankets toward resilient channel-side of stud space.

**Proprietary Gypsum Board**

<table>
<thead>
<tr>
<th>American Gypsum Company</th>
<th>5/8&quot; FireBlock® TYPE C</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPB America Inc.</td>
<td>5/8&quot; ProRock® Type C Gypsum Panels</td>
</tr>
<tr>
<td>BPB Canada Inc.</td>
<td>5/8&quot; ProRock® Type C Gypsum Panels</td>
</tr>
<tr>
<td>G-P Gypsum</td>
<td>5/8&quot; ToughRock® Flimguard® C</td>
</tr>
<tr>
<td>Lafarge North America Inc.</td>
<td>5/8&quot; Firecheck® Type C</td>
</tr>
<tr>
<td>National Gypsum Company</td>
<td>5/8&quot; Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard</td>
</tr>
<tr>
<td>PACCO Gypsum</td>
<td>5/8&quot; FLAME CURB® Super &quot;C&quot;</td>
</tr>
<tr>
<td>Temple-Interl Forest Products Corporation</td>
<td>5/8&quot; TG-C</td>
</tr>
</tbody>
</table>

**GA File No. WP 3242**

**Generic**

<table>
<thead>
<tr>
<th>1 Hour Fire</th>
<th>50 to 54 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>

**Gypsum Wallboard, Resilient Channels, Mineral or Glass Fiber Insulation, Wood Studding**

Resilient channels 16" o.c. attached at right angles to ONE SIDE of 2 x 4 wood studs 16" or 24" o.c. with 1/4" Type S drywall screws. One layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to channels with 1" Type S drywall screws 8" o.c. with vertical joints located midway between studs. End joints backblocked with resilient channels. 3" mineral or glass fiber insulation in stud space.

**Opposite Side:** One layer 5/8" type X gypsum wallboard or gypsum veneer base applied at parallel or at right angles to studs with 6d cement coated nails, 1/4" long, 0.0915" shank, 5/8" heads, 7" o.c.

Vertical joints staggered 24" on opposite sides. Sound tested with studs spaced 24" o.c. (STC=50). Also sound tested with studs spaced 16" o.c. and with two layers of 5/8" type X gypsum board on the resilient channel side (STC=50). (Load-Bearing)

**GA File No. WP 3243**

**Generic**

<table>
<thead>
<tr>
<th>1 Hour Fire</th>
<th>50 to 54 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
</tbody>
</table>

**Gypsum Wallboard, Resilient Channels, Mineral or Glass Fiber Insulation, Wood Studding**

Resilient channels 24" o.c. attached at right angles to ONE SIDE of 2 x 4 wood studs 16" or 24" o.c. with 1/4" Type S drywall screws. One layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to channels with 1" Type S drywall screws 8" o.c. with vertical joints located midway between studs. End joints backblocked with resilient channels. 3" mineral or glass fiber insulation in stud space.

**Opposite Side:** One layer 5/8" type X gypsum wallboard or gypsum veneer base applied at parallel or at right angles to studs with 6d cement coated nails, 1/4" long, 0.0915" shank, 5/8" heads, 7" o.c.

Vertical joints staggered 24" on opposite sides. Sound tested with studs spaced 24" o.c. (STC=50). Also sound tested with studs spaced 16" o.c. and with two layers of 5/8" type X gypsum board on the side opposite the resilient channels (STC=53). (Load-Bearing)

*Contact the manufacturer for more detailed information on proprietary products.*
### Walls and Interior Partitions, Wood Framed

#### GA File No. WP 3260

**Proprietary**

**Gypsum Wallboard, Glass Fiber Insulation, Wood Studs**

Base layer 1/4" proprietary gypsum wallboard applied parallel to each side of 2 x 4 wood studs 16" o.c. with 4d coated nails, 1/2" long, 0.098" shank, 1/4" heads, 12" o.c. 

Face layer 1/8" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 6" wide strips of laminating compound along the edges and centerline of each board and 6d coated nails, 1/4" long, 0.098" shank, 1/4" heads, 16" o.c. at top and bottom plates only. 1/4" glass fiber insulation, 0.0 psf, in stud space.

Joints staggered 16" each layer and side. **(Load-Bearing)**

**Proprietary Gypsum Board**

- G-P Gypsum
  - 1/4" ToughRock® Sound Deadening Board
  - 1/4" ToughRock® Fireguard® C
  - 1/4" Soundcheck®
  - 1/4" Firecheck® Type C
- Lafarge North America Inc.
  - 1/4" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard

**1 Hour Fire**

Thickness: 5/4"

Approx. Weight: 9 psf

Fire Test: See WP 334b
(UL R2717-52, 9-9-68, UL Design U312; ULC Design W900)

**50 to 54 STC Sound**

#### GA File No. WP 3330

**Generic**

**Gypsum Wallboard, Wood Fiberboard, Wood Studs**

Base layer 1/4" wood fiberboard, 0.62 psf applied parallel to each side of 2 x 4 wood studs 16" o.c. with 5d coated nails, 1/2" long, 0.098" shank, 1/4" heads, 24" o.c. at vertical joints and intermediate studs and 16" o.c. at top and bottom plates. Face layer 1/4" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 6" wide strips of 1/4" thick beads of laminating adhesive along the perimeter and centerline of each board and 8d coated nails, 1/2" long, 0.131" shank, 1/4" heads, 12" o.c. to top and bottom plates, 24" o.c. at vertical joints, and at third-points at intermediate studs.

Joints staggered 24" each layer and side. **(Load-Bearing)**

**1 Hour Fire**

Thickness: 5/4"

Approx. Weight: 8 psf

Fire Test: OSU T-3054, 4-3-65

Sound Test: CR 64-73, 9-23-64

#### GA File No. WP 3340

**Proprietary**

**Gypsum Wallboard, Wood Studs**

Base layer 1/4" proprietary gypsum wallboard applied parallel to each side of 2 x 4 wood studs 16" o.c. with 4d coated nails, 1/2" long, 0.098" shank, 1/4" heads, 12" o.c. Joints staggered 16" on opposite sides. Face layer 1/4" proprietary type X plain or predecorated gypsum wallboard or gypsum veneer base applied parallel to each side with 1/2" beads of adhesive 16" o.c. and 6d coated nails, 1/4" long, 0.098" shank, 1/4" heads, 6" o.c. at top and bottom plates only. Joints offset 24" from base layer joints. **(Load-Bearing)**

**Proprietary Gypsum Board**

- American Gypsum Company
  - 1/4" FireBlock® Type C
- G-P Gypsum
  - 1/4" ToughRock® Sound Deadening Board
  - 1/4" ToughRock® Fireguard® C
- Lafarge North America Inc.
  - 1/4" Soundcheck®
  - 1/4" Firecheck® Type C
- National Gypsum Company
  - 1/4" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard
- Temple-Inland Forest Products Corporation
  - 1/4" Temple-4 Sound Deadening Board

**1 Hour Fire**

Thickness: 5/4"

Approx. Weight: 8 psf

Fire Test: UL R2717-52, 9-9-68, UL Design U312; ULC Design W900

Sound Test: G&H BW-27FT, 7-13-67

---

*Contact the manufacturer for more detailed information on proprietary products.*
### GA FILE NO. WP 3341 | GENERIC

**GYPSUM WALLBOARD, WOOD STUDS**

Base layer ½" gypsum wallboard applied parallel to each side of 2 x 4 wood studs 16" o.c. with 4d coated nails, 1½" long, 0.099" shank, ½" heads, 12" o.c. Joints staggered 16" on opposite sides. Face layer ⅛" type X plain or predecorated gypsum wallboard or gypsum veneer base applied parallel to each side with ⅜" beads of adhesive 2" o.c. and 6d coated nails, 1½" long, 0.0915" shank, ¼" heads, 6" o.c. at top and bottom plates only. Offset joints 24" from base layer joints. (LOAD-BEARING)

- **Thickness:** 5½"
- **Approx. Weight:** 7 psf
- **Fire Test:** FM WP-147, 1-2-68
- **Sound Test:** NCC 2321, 8-25-65

---

### GA FILE NO. WP 3342 | PROPRIETARY*

**GYPSUM WALLBOARD, WOOD STUDS**

Base layer ¼" proprietary gypsum wallboard applied parallel to each side of 2 x 4 wood studs 16" o.c. with 4d coated nails, 1½" long, 0.099" shank, ½" heads, 12" o.c. Joints staggered 16" on opposite sides. Face layer ¼" proprietary type X plain or predecorated gypsum wallboard or gypsum veneer base applied parallel to each side with ⅜" beads of adhesive 16" o.c. and 6d coated nails, 1½" long, 0.0915" shank, ¼" heads, 6" o.c. at top and bottom plates only. Joints offset 24" from base layer joints. (LOAD-BEARING)

**PROPRIETARY GYPSUM PANEL PRODUCTS**

- ¼" ToughRock® Sound Deadening Board
- ½" DensArmor® Plus Fireguard® C Interior Guard

- **Thickness:** 5½"
- **Approx. Weight:** 6 psf
- **Fire Test:** UL R2717-52, 9-9-68; UL Design U312; ULG Design WS00
- **Sound Test:** G&H BW-27FT, 7-13-67

---

### GA FILE NO. WP 3360 | GENERIC

**GYPSUM WALLBOARD, WOOD STUDS**

Base layer ⅝" gypsum wallboard or gypsum veneer base applied parallel to each side of 2 x 4 wood studs 16" o.c. with 5d coated nails, 1¾" long, 0.082" shank, ⅝" heads, 12" o.c. Face layer ¾" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 6" wide strips of laminating compound combed along edges and intermediate studs and 6d finish nails, 2" long, 0.0915" shank, 0.135" heads driven at 45° angle 24" o.c. at intermediate studs.

- **Thickness:** 5½"
- **Approx. Weight:** 8 psf
- **Fire Test:** UC, 2-4-65
- **Field Sound Test:** ACI 7-1152004a, 12-21-64

*Contact the manufacturer for more detailed information on proprietary products.
### Walls and Interior Partitions, Wood Framed

**GA File No. WP 3370**

**Gypsum Wallboard, Wood Studs**

- One layer 1/2" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 2 x 4 wood studs 16" o.c. on separate plates 1" apart with 6d coated nails, 1/4" long, 0.0915" shank, 1/4" heads, 7" o.c.
- Joints staggered 16" on opposite sides. Horizontal bracing required at mid-height. (Load-Bearing)

| Thickness: | 9/16" |
| Approx. Weight: | 8 psf |
| Fire Test: | See WP 3605 (UL R1319-4, E, 6-17-52; UL R2717-39, 1-20-66; UL R3501-52, 3-15-66; UL Design US05; ULC Design W301) |
| Sound Test: | Estimated |

**GA File No. WP 3380**

**Gypsum Wallboard, Wood Studs**

- One layer 1/2" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 2 x 4 wood studs 16" o.c. staggered 8" o.c. on 2 x 6 wood plates with 6d coated nails, 1/4" long, 0.0915" shank, 1/4" heads, 7" o.c.
- Joints staggered 24" on opposite sides. Horizontal bracing required at mid-height. (Load-Bearing)

| Thickness: | 5/8" |
| Approx. Weight: | 8 psf |
| Fire Test: | See WP 3605 (UL R1319-4, E, 6-17-52; UL R2717-59, 1-20-66; UL R3501-52, 3-15-66; UL Design US05; ULC Design W301) |
| Sound Test: | Estimated |

**GA File No. WP 3438**

**Gypsum Lath, Gypsum Plaster, Wood Studs**

- 1/2" 1:2 gypsum-sand plaster applied over 3/4" plain gypsum lath applied at right angles to each side of 2 x 4 wood studs 16" o.c. with 13 gage blued lath nails, 1/4" long, 0.0915" shank, 1/4" heads, 4" o.c. (Load-Bearing)

| Thickness: | 5/16" |
| Approx. Weight: | 16 psf |
| Fire Test: | OSU T-948, 7-17-58; OSU T-1389, 7-5-60 |
| Sound Test: | RAL TL58-60, 8-7-58 |
### Walls and Interior Partitions, Wood Framed

<table>
<thead>
<tr>
<th>GA File No.</th>
<th>Generic</th>
<th>1 Hour Fire</th>
<th>40 to 44 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td>WP 3431</td>
<td>Gypsum Lath, Gypsum Plaster, Wood Stud</td>
<td>15/8&quot; gypsum-sand plaster applied over 5/8&quot; type X gypsum lath applied at right angles to each side of 2 x 4 wood studs 16&quot; o.c. with 13 gauge blue lath nails, 1/8&quot; long, 0.0915&quot; shank, 1/4&quot; heads, 5/8&quot; o.c. (LOAD-BEARING)</td>
<td>5/8&quot;&lt;br&gt;Approx. Weight: 15 psf&lt;br&gt;Fire Test: OSU T-1480, 12-60&lt;br&gt;Sound Test: RAL TL50-60, 6-7-66</td>
</tr>
</tbody>
</table>

| WP 3436     | Gypsum Lath, Gypsum Plaster, Resilient Channels, Wood Studs | Resilient channels 16" o.c. attached at right angles to each side of 2 x 4 wood studs 16" o.c. with 5d coated nails, 1/4" long, 0.072" shank, 3/8" heads. 6" x 3" strips of gypsum wallboard applied on each side at top plate and at mid-height with 5d nails. 1/2" 1/2 or 1/3 gypsum-sand plaster applied over 3/4" type X gypsum lath attached at right angles to channels with 3/4" Type S drywall screws, 3 per lath at each channel, and 5d coated nails, 1/4" long, 0.072" shank, 3/8" heads, 3 per lath at top plate.<br>Horizontal joints staggered 16" and vertical joints 6" on opposite sides. (LOAD-BEARING) | 3/4"<br>Approx. Weight: 16 psf<br>Fire Test: UC 2-15-66<br>Sound Test: RAL TL55-299, 6-24-66 |

| WP 3441     | Gypsum Wallboard, Mineral Fiber Insulation, Cementitious Backer Unit, Ceramic Tile, Wood Studs | One layer 1/2" thick proprietary cementitious backer unit applied parallel or at right angles to 2 x 4 wood studs 16" o.c. with 1/2" galvanized roofing nails or 1/4" wafer head screws 5/8" o.c. Ceramic tile, 1/4" thick, joints ground, installed with latex-modified portland cement mortar or ANSIA136.1 Type I organic adhesive. 3/4" mineral fiber insulation, 2.0 pcf, friction fit in stud space.<br>OPPOSITE SIDE: One layer 3/4" proprietary type X gypsum wallboard applied parallel or at right angles to studs with 3d cement coated nails, 1/4" long, 0.0915" shank, 1/4" heads, 5/8" o.c. As an alternate, one layer 1/2" thick proprietary cementitious backer unit applied with 1/2" galvanized roofing nails or 1/4" wafer head screws 5/8" o.c. and faced with ceramic tile (FSTC 37 when alternate is used.) (LOAD-BEARING) | 3/4"<br>Approx. Weight: 13 psf<br>Fire Test: UL R11270, 4-15-85, UL Design U339<br>Field Sound Test: USG B40314, 3-12-84; USG B40404, 4-4-84 |

**Proprietary Gypsum Board**

- American Gypsum Company - 5/8" FireBlock® Type X
- Lafaing North America Inc - 5/8" Firecheck® Type X
- Temple-Inland Forest Products Corporation - 5/8" Type X
- United States Gypsum Company - 5/8" SHEETROCK® Brand FIRECODE®<br>Core Gypsum Panels

*Contact the manufacturer for more detailed information on proprietary products.*
### Walls and Interior Partitions, Wood Framed

#### GA File No. WP 3510

**Generic**

- **1 Hour Fire**
- **35 to 39 STC Sound**

**Gypsum Wallboard, Wood Studs**

One layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 2 x 4 wood studs 24" o.c. with 6d coated nails, 17/8" long, 0.0915" shank, 1/4" heads, 7" o.c.

Joints staggered 24" on opposite sides. (LOAD-BEARING)

- **Thickness:** 47/8"
- **Approx. Weight:** 7 psf
- **Fire Test:** UL R3501-47, -48, 9-17-85,
  - UL Design U308;
  - UL R1319-129, 7-22-70,
  - UL Design U314
- **Sound Test:** NGC 2404, 10-14-70

#### GA File No. WP 3514

**Generic**

- **1 Hour Fire**
- **35 to 39 STC Sound**

**Gypsum Wallboard, Wood Studs**

One layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 2 x 4 wood studs 16" o.c. with 11/4" Type W drywall screws 12" o.c.

Joints staggered 16" on opposite sides. (LOAD-BEARING)

- **Thickness:** 43/4"
- **Approx. Weight:** 7 psf
- **Fire Test:** SWRI 01-4511-619, 8-19-92
- **Sound Test:** See WP 3520
  - (G&H NG-246FT, 7-2-65)

#### GA File No. WP 3520

**Generic**

- **1 Hour Fire**
- **35 to 39 STC Sound**

**Gypsum Wallboard, Wood Studs**

One layer 5/8" type X plain or predecorated gypsum wallboard applied parallel to each side of 2 x 4 wood studs 24" o.c. with 6d coated nails, 17/8" long, 0.0915" shank, 1/4" heads, 7" o.c. at joints and top and bottom plates and 3/4" beads of adhesive at intermediate studs.

Joints staggered 24" on opposite sides. (LOAD-BEARING)

- **Thickness:** 47/8"
- **Approx. Weight:** 7 psf
- **Fire Test:** FM WP 90, 8-21-67
- **Sound Test:** G&H NG-246FT, 7-2-65
### WALLS AND INTERIOR PARTITIONS, WOOD FRAMED

#### GA FILE NO. WP 3605

**GENERIC**

**1 HOUR FIRE**

**30 to 34 STC SOUND**

**GYPSUM WALLBOARD, WOOD STUDS**

One layer 5/8" type X plain or predecorated gypsum wallboard, water-resistant gypsum backing board, or gypsum veneer base applied parallel or at right angles to each side of 2 x 4 wood studs 16" o.c. with 6d coated nails, 1/4" long, 0.0315" shank, 1/4" heads. 7" o.c. Joints of square edge, bevel edge or predecorated wallboard may be left exposed.

Joints staggered 16" on opposite sides. (LOAD-BEARING)

- Thickness: 4/8" p.f.
- Approx. Weight: 7 psf
- Fire Test: UL R1319-4, -6, 8-17-52;
  UL R2717-39, 1-20-66;
  UL R3611-59, 3-15-66
- UL Design U305;
- UL Design W301

- Sound Test: OR, 64-8, 2-4-64

#### GA FILE NO. WP 3615

**PROPRIETARY**

**1 HOUR FIRE**

**30 to 34 STC SOUND**

**GLASS MAT GYPSUM BOARD, WOOD STUDS**

One layer 5/8" proprietary type X glass mat water-resistant gypsum backing board applied parallel or at right angles to 2 x 4 wood studs 16" o.c. with phosphate coated nails, 1/4" long. 1/4" diameter cupped heads, 8" o.c.

Joints staggered 16" on opposite sides and covered with 10x10 mesh glass tape and tile adhesive. (LOAD-BEARING)

**PROPRIETARY GYPSUM PANEL PRODUCT**

- G-P Gypsum 5/8" DensShield® Fireguard®

- Thickness: 4/3" p.f.
- Approx. Weight: 7 psf
- Fire Test: WHI-495-0853, 5-14-87;
  WHI-495-0854, 5-15-87
- Sound Test: SN 3605 (OR 64-8, 2-4-64)

#### GA FILE NO. WP 3620

**GENERIC**

**1 HOUR FIRE**

**30 to 34 STC SOUND**

**GYPSUM VENEER BASE, GYPSUM VENEER PLASTER, WOOD STUDS**

One layer 1/2" type X gypsum veneer base applied at right angles to each side of 2 x 4 wood studs 16" o.c. with 5d etched nails, 19/4" long, 0.099" shank, 1/4" heads, 8" o.c. 1/4" gypsum veneer plaster applied over each face.

Vertical joints staggered 16" and horizontal joints 12" on opposite sides. Sound tested without gypsum veneer plaster. (LOAD-BEARING)

- Thickness: 4/8" p.f.
- Approx. Weight: 7 psf
- Fire Test: UC, 1-12-66
- Sound Test: G&H IBI-35FT, 5-28-64

---

*Contact the manufacturer for more detailed information on proprietary products.*
WALLS AND INTERIOR PARTITIONS, WOOD FRAMED

GA FILE NO. WP 3640  
GYPSUM WALLBOARD, WOOD STUDS

One layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of either 2 x 3 or 2 x 4 wood studs, turned flatwise, 24" o.c. with 6d cement-coated nails, 1 1/4" long, 0.0915" shank, 1/4" heads, 7" o.c. (NLB)

Thickness: 2 5/8"
Approx. weight: 7 psf
Fire test: UL, 9-12-96.
UL Design U338

GA FILE NO. WP 3641  
GYPSUM WALLBOARD, WOOD STUDS

Base layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of either 2 x 3 or 2 x 4 wood studs, turned flatwise, 24" o.c. with 6d cement-coated nails, 1 1/4" long, 0.0915" shank, 1/4" heads, 7" o.c. Face layer: 1/4" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side with 8d cement-coated nails, 2 1/8" long, 0.112" shank, 3/8" heads, 8" o.c. (LOAD-BEARING)

Thickness: 4 5/8"
Approx. weight: 12 psf
Fire test: UL, 9-12-96.
UL Design U338

GA FILE NO. WP 3642  
GYPSUM WALLBOARD, WOOD STUDS

One layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to ONE SIDE of either 2 x 3 or 2 x 4 wood studs, turned flatwise, 24" o.c. with 6d cement-coated nails, 1 1/4" long, 0.0915" shank, 1/4" heads, 7" o.c.

Inner layer plywood applied with nails.

Second wall duplicate of first wall and separated by 1" air space. (NLB)

Thickness: 5 1/2"
Approx. weight: 10 psf
Fire test: UL, 9-12-96.
UL Design U339
WALLS AND INTERIOR PARTITIONS, WOOD FRAMED

GA FILE NO. WP 3643

GYPSUM WALLBOARD, WOOD STUDS

**GENERIC**

**1 HOUR FIRE**

Base layer 5/8" type X gypsum wallboard applied parallel or at right angles to each side of a double row of either 2 x 3 or 2 x 4 wood studs, turned flatwise, 24" o.c. on separate plates 1" apart with 6d cement-coated nails, 1 1/2" long, 0.0915" shank, 1/4" heads, 7" o.c. Face layer 5/8" type X gypsum wallboard applied parallel or at right angles to each side with 8d cement-coated nails, 2 1/4" long, 0.113" shank, 5/8" heads, 8" o.c. (LOAD-BEARING)

Thicknes: 6 3/8"
Approx. Weight: 13 psf
Fire Test: UL, 9-12-96
UL Design U339

GA FILE NO. WP 3644

GYPSUM WALLBOARD, WOOD STUDS, MINERAL FIBER INSULATION

**GENERIC**

**1 HOUR FIRE**

One layer 5/8" type X gypsum wallboard applied at right angles to each side of 2 x 4 wood studs 16" o.c. with 2-1/4" Type S or W drywall screws 12" o.c. 3/16" mineral fiber insulation, nominal 2.5 psf, friction fit in stud space.

Vertical joints staggered 16" o.c., horizontal joints staggered 24" o.c., on opposite sides.

Tested at 2,578 lbs per stud or 100 percent of design load. (LOAD-BEARING)

Thicknes: 4 3/4"
Approx. Weight: 7 1/2 psf
Fire Test: ITB 229-06170.1, 4-00

GA FILE NO. WP 3660

GYPSUM WALLBOARD, WOOD STUDS

**GENERIC**

**1 HOUR FIRE**

One layer 5/8" type X gypsum wallboard applied at right angles to each side of 2 x 6 wood studs 16" o.c. with 2-1/4" Type S or W drywall screws 7" o.c.

Vertical joints staggered 16" o.c., horizontal joints staggered 24" o.c., on opposite sides.

Tested at 5,156 lbs per stud or 100 percent of design load. (LOAD-BEARING)

Thicknes: 6 3/4"
Approx. Weight: 8 psf
Fire Test: ITB 229-22441.2, 10-99
Walls and Interior Partitions, Wood Framed

GA File No. WP 3661

Generic

Gypsum Wallboard, Wood Studs, Mineral Fiber Insulation

One layer ½" type X gypsum wallboard applied at right angles to each side of 2 x 6 wood studs 16" o.c. with 2½" Type S or W drywall screws 12" o.c. 5½" mineral fiber insulation, nominal 2.5pcf, friction fit in stud spaces.

Vertical joints staggered 16" o.c. Horizontal joints staggered 24" o.c. on opposite sides.

Tested at 5,156 lbs per stud or 100 percent of design load. (LOAD-BEARING)

Thickness: 6½"
Approx. Weight: 8½ lbs per sq ft
Fire Test: ITS J99-22441.1, 10-99

GA File No. WP 3810

Generic

Gypsum Wallboard, Wood Studs

Base layer ¾" type X gypsum wallboard or gypsum veneer base applied at right angles to 2 x 4 wood studs 24" o.c. with 6d coated nails, 1½" long, 0.0915" shank, ½" heads, 16" o.c. Face layer ½" type X gypsum wallboard or gypsum veneer base applied at right angles with 6d coated nails, 2½" long, 0.099" shank, ¾" heads, 8" o.c. Joints offset 24" from base layer joints.

Inner layer ½" type X gypsum wallboard or gypsum veneer base applied parallel to studs with 6d coated nails, 1½" long, 0.0915" shank, ¼" heads, 8" o.c.

Second wall duplicate of first wall and separated by 1" space. Walls independently loaded. STC 59 with 3½" glass fiber insulation friction fit in stud spaces both sides; STC 57 without glass fiber insulation. (LOAD-BEARING)

Thickness: 11"
Approx. Weight: 14 lbs per sq ft
Fire Test: FM WP 297, 1-6-73
Sound Test: RAL TL73-215, 7-13-73; RAL TL73-224, 7-30-73

GA File No. WP 3812

Generic

Gypsum Wallboard, Wood Studs

Base layer ¾" type X gypsum wallboard or gypsum veneer base applied at right angles to 2 x 4 wood studs 24" o.c. with 6d coated nails, 1½" long, 0.086" shank, ½" heads, 16" o.c. Face layer ½" type X gypsum wallboard or gypsum veneer base applied at right angles to studs over base layer and to top and bottom plates with 6d coated nails, 2½" long, 0.099" shank, ¾" heads, 8" o.c. Joints offset 24" from base layer joints.

Inner layer ½" type X gypsum wallboard or gypsum veneer base applied parallel with 6d coated nails, 1½" long, 0.0915" shank, ¼" heads, 8" o.c.

Second wall duplicate of first wall and separated by 1" space. Walls independently loaded. Sound tested with 9½" glass fiber insulation, 0.75pcf, friction fit in stud spaces. (LOAD-BEARING)

Thickness: 11½"
Approx. Weight: 15 lbs per sq ft
Fire Test: See WP 3810
(FM WP 297, 1-6-73)
Sound Test: Estimated Based on WP 3810
(RAL TL73-215, 7-13-73; RAL TL73-224, 7-30-73)
### Walls and Interior Partitions, Wood Framed

#### GA File No. WP 3620

**Generic**

**2 Hour Fire**

**55 to 59 STC Sound**

**Gypsum Wallboard, Wood Studs**

Base layer ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles to each side of double row of 2 x 4 wood studs 16" o.c. on separate plates 1" apart with 8d coated nails, ⅛" long, 0.085" shank, ⅛" heads, 24" o.c. **Face layer** ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles to each side with 8d coated nails, ⅛" long, 0.100" shank, ⅛" heads, 8" o.c.

Joints staggered 16" each layer and side. Sound tested with ⅛" glass fiber insulation stapled to studs in stud spaces on one side and with nails for base layer spaced 6" o.c. Horizontal bracing required at mid-height. (LOAD-BEARING)

**Thickness:** 10⅛"  
**Approx. Weight:** 13 psf  
**Fire Test:** See WP 4135  
**Sound Test:** NGC 3056, 4-7-70

#### GA File No. WP 3910

**Generic**

**2 Hour Fire**

**50 to 54 STC Sound**

**Gypsum Wallboard, Wood Studs**

Base layer ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles to each side of 2 x 4 wood studs 16" o.c., staggered 8" o.c. on 2 x 6 wood plates, with 8d coated nails, ⅛" long, 0.085" shank, ⅛" heads, 24" o.c. **Face layer** ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles to each side with 8d coated nails, ⅛" long, 0.113" shank, ⅛" heads, 8" o.c.

Joints staggered 16" each layer and side. Sound tested with nails for base layer spaced 6" o.c. Horizontal bracing required at mid-height. (LOAD-BEARING)

**Thickness:** 3"  
**Approx. Weight:** 13 psf  
**Fire Test:** See WP 4135  
**Sound Test:** NGC 2377, 5-19-70

#### GA File No. WP 4135

**Generic**

**2 Hour Fire**

**40 to 44 STC Sound**

**Gypsum Wallboard, Wood Studs**

Base layer ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles to each side of 2 x 4 wood studs 24" o.c. with 8d coated nails, ⅛" long, 0.085" shank, ⅛" heads, 24" o.c. **Face layer** ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles to each side with 8d coated nails, ⅛" long, 0.100" shank, ⅛" heads, 8" o.c.

Joints staggered 24" each layer and side. Sound tested with studs 16" o.c. and with nails for base layer spaced 6" o.c. (LOAD-BEARING)

**Thickness:** 5⅛"  
**Approx. Weight:** 12 psf  
**Fire Test:** FM WP 360, 9-27-74  
**Sound Test:** NGC 2363, 4-1-70
### WALLS AND INTERIOR PARTITIONS, WOOD FRAMED

<table>
<thead>
<tr>
<th>GA FILE NO. WP 4138</th>
<th>GENERIC</th>
<th>2 HOUR FIRE</th>
<th>40 to 44 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, WOOD STUDS</strong>&lt;br&gt;Base layer 5/8&quot; type X gypsum wallboard or veneer base applied parallel or at right angles to each side of 2 x 4 wood studs 16&quot; o.c. with 1-1/4&quot; Type W drywall screws 12&quot; o.c. Face layer 5/8&quot; type X gypsum wallboard or veneer base applied parallel or at right angles to each side with 1-1/4&quot; Type W drywall screws 12&quot; o.c. and offset 8&quot; from screws in base layer.&lt;br&gt;Joints staggered 16&quot; each layer and side. (LOAD-BEARING)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 61/4&quot;&lt;br&gt;Approx. Weight: 12 psf&lt;br&gt;Fire Test: SWRI 01-5520-614, 12-6-94&lt;br&gt;Sound Test: See WP 4135 (NGC 2363, 4-1-70)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 4230</th>
<th>GENERIC</th>
<th>2 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, WOOD STUDS, MINERAL FIBER INSULATION</strong>&lt;br&gt;Base layer 5/8&quot; type X gypsum wallboard applied at right angles to each side of 2 x 6 wood studs 24&quot; o.c. with 2-1/4&quot; Type S or W drywall screws 24&quot; o.c. Face layer 5/8&quot; type X gypsum wallboard applied at right angles to each side with 2-1/4&quot; Type S drywall screws 8&quot; o.c. 5/8&quot; mineral fiber insulation, nominal 3 psf, friction fit in stud space.&lt;br&gt;Joints staggered 24&quot; each layer and side.&lt;br&gt;Tested at 6,506 lbs per stud or 100 percent of design load. (LOAD-BEARING)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 8&quot;&lt;br&gt;Approx. Weight: 13 psf&lt;br&gt;Fire Test: ITS J20-06170.3, 12-00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This Space Left Blank
### Gypsum Wallboard, Steel Studs, Mineral Fiber Insulation, Cementitious Backer Unit

**Ceramic Tile**

One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to **ONE SIDE** of a double row of 1 1/2" 20 gage steel studs 10" o.c. with 1" Type S-12 drywall screws 8" o.c. at edges and 12" o.c. at intermediate studs. 5/8" gypsum board pieces 6" wide located not more than 48" o.c. used as cross braces fastened to stud pairs with two 1" Type S drywall screws at each end of brace. Optionally, 25 gage stud or runner pieces may be used as cross braces and attached with two 1/8" Type S drywall screws at each end. 1/16" mineral fiber insulation, 2 pcf, on each side in stud space.

**Opposite Side:** One layer 1/4" proprietary cementitious backer unit applied at right angles to studs with 1 1/4" Type S-12 wire head screws 8" o.c. Vertical joints staggered and covered with glass fiber mesh tape. Ceramic tile, 1/4" thick, joints grouted, installed with latex-modified portland cement mortar or ANSI A136.1 Type I organic adhesive. (NLB)

**Proprietary Gypsum Board**

<table>
<thead>
<tr>
<th>Company</th>
<th>Board Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Gypsum Company</td>
<td>5/8&quot; FireBloc® Type X</td>
</tr>
<tr>
<td>Lafarge North America Inc.</td>
<td>5/8&quot; Firecheck® Type X</td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td>1/8&quot; Type X</td>
</tr>
<tr>
<td>United States Gypsum Company</td>
<td>3/8&quot; SHEETROCK® Brand FIRECODE® Core Gypsum Panels</td>
</tr>
</tbody>
</table>

### Gypsum Wallboard, Steel Studs, Glass Fiber Insulation

**Proprietary Gypsum Board**

<table>
<thead>
<tr>
<th>Company</th>
<th>Board Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States Gypsum Company</td>
<td>3/8&quot; SHEETROCK® Brand FIRECODE® Core Gypsum Panels</td>
</tr>
</tbody>
</table>

### Gypsum Wallboard, Steel Studs

**Generic**

<table>
<thead>
<tr>
<th>Thickness</th>
<th>1 Hour Fire</th>
<th>53 to 54 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 1/4&quot;</td>
<td>7 psf</td>
<td>UL R4024-13, -14, 11-17-75, UL Design U420</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UL R3600, 04NKB1280, 11-04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RAL T36-155, 6-3-76</td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.
### CHASE WALLS, NONCOMBUSTIBLE

##### GA FILE NO. WP 5016

**GENERIC**

**1 HOUR FIRE**

Gypsum wallboard, steel studs, glass fiber insulation

- One layer 1/2" type X gypsum wallboard or gypsum veneer base applied parallel to a double row of 3/8" 20 gage steel studs 24" o.c. and not less than 2" apart with 1/4" type S-12 drywall screws 12" o.c. at edges, floor and ceiling runners, and intermediate studs. Each row of studs horizontally braced with 1 1/2" wide by 20 gage steel strap attached to the interior side of the studs at midheight with one 1/2" type S-12 panhead screw at each stud. 3/8" glass fiber insulation, 0.5 psf, on each side in stud space.

- Joints staggered 24" on opposite sides.

- Rating based on loading to not more than 80% of full design load. (LIMITED LOAD-BEARING)

| Thickness | 10 1/4" |
| Approx. Weight | 7 psf |
| Fire Test | UL R21113, 02NK44925, 5-13-03; UL Design V446, ULC Design W449 |
| Sound Test | 45C 2003596, 4-23-03 |

##### GA FILE NO. WP 5060

**PROPRIETARY**

**2 HOUR FIRE**

- Gypsum wallboard, steel studs, glass fiber insulation

- Base layer 1/4" proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to ONE SIDE of a double row of 3/8" 18 gage steel studs 16" o.c. and not less than 1" apart with 1" type S drywall screws 16" o.c. Face layer 1/4" proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to same side of studs with 1/4" type S drywall screws 12" o.c. Face layer vertical joints offset one stud cavity from base layer vertical joints. Face layer horizontal joints offset not less than 6" from base layer horizontal joints.

- OPPOSITE SIDE: Base layer 1/4" proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to studs with 1" type S drywall screws 16" o.c. Face layer 1/4" proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to same side of studs with 1/4" type S drywall screws 12" o.c. Face layer vertical joints offset one stud cavity from base layer vertical joints. Face layer horizontal joints offset not less than 6" from base layer horizontal joints. 3/8" glass fiber insulation, 0.5 psf, on one side in cavity.

- Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Horizontal joints need not be backed by framing. Horizontal joints on opposite sides need not be staggered. (NLB)

- PROPRIETARY GYPSUM BOARD

  - United States Gypsum Company - 1/4" SHEETROCK® Brand FIRECODE® Core Gypsum Panels

| Thickness | Minimum 8 1/2" |
| Approx. Weight | 9 psf |
| Fire Test | UL R1319, 96NKC4548, 10-21-96; UL Design U493 |
| Sound Test | USG STC-068619, 5-12-05 |

*Contact the manufacturer for more detailed information on proprietary products.*
### Chase Walls, Noncombustible

<table>
<thead>
<tr>
<th>GA File No. WP 5070</th>
<th>Proprietary*</th>
<th>2 Hour Fire</th>
<th>60 to 64 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs,</strong>&lt;br&gt;Mineral Fiber Insulation, Cementitious Backer Unit, Ceramic Tile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/4&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel on each side of a double row of 1 1/2&quot; 20 gage steel studs spaced 24&quot; o.c. with 1&quot; Type S-12 drywall screws 24&quot; o.c. 1/4&quot; gypsum board pieces 6&quot; wide located not more than 48&quot; o.c. used as cross braces fastened to stud pairs with two 1/2&quot; Type S drywall screws at each end of brace. Optionally, 25 gage stud or runner pieces may be used as cross braces and attached with two 1/2&quot; Type S drywall screws at each end. 1/4&quot; mineral fiber insulation, 2.0 psf, on each side in stud space. Face layer 1/4&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to ONE SIDE with 1/4&quot; Type S drywall screws 12&quot; o.c. Joints offset 24&quot; from base layer joints.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opposite Side: Face layer 1/4&quot; proprietary cementitious backers applied at right angles to studs with 1/4&quot; Type S-12 water-head screws 8&quot; o.c. Vertical joints offset 24&quot; from base layer vertical joints. Joints covered with glass fiber mesh tape. Ceramic tile 1/4&quot; thick, joints grooved, installed with latex-modified portland cement mortar or ANSI A118.1 Type I organic adhesive. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Proprietary Gypsum Board

- American Gypsum Company: 1/4" FireBlock® Type C
- Lafarge North America Inc.: 1/4" Firecheck® Type C
- National Gypsum Company: 1/4" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard
- Temple-Inland Forest Products Corporation: 1/4" TC-M
- United States Gypsum Company: 1/4" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels

### GA File No. WP 5105 | Generic | 2 Hour Fire | 55 to 59 STC Sound |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gypsum Wallboard, Steel Studs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/4&quot; type X gypsum wallboard or gypsum veneer base applied parallel to a double row of 1 1/2&quot; steel studs 24&quot; o.c. and not less than 1&quot; apart with 1&quot; Type S drywall screws 8&quot; o.c. at edges and 12&quot; o.c. at intermediate studs. 1/4&quot; gypsum board pieces 12&quot; long x not less than 4 1/2&quot; wide located at 1/4 points used as cross braces fastened to stud pairs with three 1&quot; Type S drywall screws at each end of brace. Optionally, 25 gage stud or runner pieces, not less than 4 1/2&quot; long, may be used as cross braces and attached with two No. 8 x 1 1/2&quot; self-drilling steel screws at each end. Where total cavity depth exceeds 3 1/2&quot;, cross braces shall be fabricated from 25 gage stud or runner pieces. Face layer 1/4&quot; type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1/4&quot; Type S drywall screws 8&quot; o.c. at joints and floor and ceiling runners and 12&quot; o.c. at intermediate studs. Joints staggered 24&quot; each layer and side. Sound basted with 3 1/2&quot; glass fiber insulation stapled in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thickness: 12"<br>Approx. Weight: 10 psf<br>Fla Test: UL R6024-13, -14, 11-17-76; UL R3860, 04N126128, 11-18-04; UL Design U420<br>Sound Test: NAL TL76-156, 6-7-76

*Contact the manufacturer for more detailed information on proprietary products.*
CHASE WALLS, NONCOMBUSTIBLE

**GA FILE NO. WP 5106**

**GENERIC**

**2 HOUR FIRE**

**55 to 59 STC SOUND**

**GYPSUM WALLBOARD, STEEL STUDS,**

**GLASS FIBER INSULATION**

Base layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel to a double row of 2 1/2" 20 gage steel studs 24" o.c. and not less than 2" apart with 1 1/4" Type S-12 drywall screws 12" o.c. at edges and intermediate studs. Each row of studs horizontally braced with 1 1/2" wide by 20 gage steel strap attached to the interior side of the studs at midheight with one 1/2" Type S-12 panhead screw at each stud. 2 1/8" glass fiber insulation, 0.5 pcf, on each side in stud space. Face layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1 1/4" Type S-12 drywall screws 12" o.c. at joints, floor and ceiling runners, and intermediate studs.

Joints staggered 24" each layer and side. (LOAD-BEARING)

**Thickness:** 1 1/4"

**Approx. Weight:** 10 psf

**Fire Test:**

UL 81113, 029K44925,
5-13-03,
UL Design VM26.

**Sound Test:**

NGC 2003007, 4-23-03

---

**GA FILE NO. WP 5130**

**GENERIC**

**2 HOUR FIRE**

**50 to 54 STC SOUND**

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel to a double row of 1 1/2" steel studs 24" o.c. and not less than 1" apart with 1" Type S drywall screws 6" o.c. at edges and 12" o.c. at intermediate studs. 5/8" gypsum board pieces 12" long x not less than 4 1/2" wide located at 1/3 points used as cross braces fastened to stud pairs with three 1" Type S drywall screws at each end of brace. Optionally 25 gage stud or runner pieces, not less than 4 1/2" long, may be used as cross braces and attached with two No. 8 x 1/2" self-drilling steel screws at each end. Where total cavity depth exceeds 9 1/2", cross braces shall be fabricated from 25 gage stud or runner pieces.

Face layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1 1/4" type S drywall screws 8" o.c. at joints and floor and ceiling runners and 12" o.c. at intermediate studs.

Joints staggered each layer and side. (NLB)

**Thickness:** 12"

**Approx. Weight:** 10 psf

**Fire Test:**

UL R4024-13, -14, 11-17-76;
UL R3660, 04NK28128,
11-08-04;
UL Design VM26

**Sound Test:**

RAL TL7-162, 6-11-76

---

This Space Left Blank
### CHASE WALLS, WOOD FRAMED

#### GYPSUM WALLBOARD, WOOD STUDS

**GA FILE NO. WP 5510**

**1 HOUR FIRE**

| Thickness: | 10" |
| Approx. Weight: | 9 psf |
| Fire Test: | See WP 3341 |
| (FM WP-147, 1-2-89) |
| Sound Test: | GA11 BW-3227, 4-22-68 |

**55 to 59 STC SOUND**

#### GYPSUM WALLBOARD, WOOD STUDS

**GA FILE NO. WP 5512**

**1 HOUR FIRE**

| Thickness: | 9 1/4" |
| Approx. Weight: | 8 psf |
| Fire Test: | See WP 3605 |
| (UL R1319-4, 6, 6-17-82; UL R2717-39, 1-20-66; UL R3501-52, 3-15-66; UL Design U308; ULC Design W301) |
| Sound Test: | Estimated |

**45 to 49 STC SOUND**

#### GYPSUM WALLBOARD, WOOD STUDS

**GA FILE NO. WP 5515**

**1 HOUR FIRE**

| Thickness: | 7 7/8" |
| Approx. Weight: | 8 psf |
| Fire Test: | See WP 3605 |
| (UL R1319-4, 6, 6-17-82; UL R2717-39, 1-20-66; UL R3501-52, 3-15-66; UL Design U308; ULC Design W301) |
| Sound Test: | Estimated |

**40 to 44 STC SOUND**

*Base layer 1/4" gypsum wallboard applied parallel to each side of double row of 2 x 4 wood studs 16" o.c., on separate plates spaced 1 1/2" apart with 4d coated nails, 1 1/2" long, 0.099" shank, 1/4" heads, 12" o.c. Joints staggered 16" on opposite sides. Face layer 1/8" type X plain or predecorated gypsum wallboard or gypsum veneer base applied parallel to each side with 1/8" beads of adhesive 16" o.c. and 5d coated nails, 1 1/2" long, 0.099" shank, 1/4" heads, 12" o.c. at top and bottom plates, 4d finish nails, 1 1/2" long, 0.072" shank, 0.105" heads, driven at a 45° angle 16" o.c. horizontally and 24" o.c. vertically. Joints offset 24" from base layer joints. Sound tested with 1 1/2" mineral fiber insulation in stud space. Horizontal bracing required at mid-height. (LOAD-BEARING)*

*One layer 1/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of double row of 2 x 4 wood studs 16" o.c. on separate plates 1" apart with 6d coated nails, 1 1/2" long, 0.0915" shank, 1/4" heads, 7" o.c. Joints staggered 16" on opposite sides. Horizontal bracing required at mid-height. (LOAD-BEARING)*

*One layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side of 2 x 4 wood studs 16" o.c. staggered 8" o.c. on 2 x 6 wood plates with 6d coated nails, 1 1/2" long, 0.0915" shank, 1/4" heads, 7" o.c. Joints staggered 24" on opposite sides. Horizontal bracing required at mid-height. (LOAD-BEARING)*
### CHASE WALLS, WOOD FRAMED

**GA FILE NO. WP 5520**  
**GENERIC**

#### GYPSUM WALLBOARD, WOOD STUDS

Base layer ¼" type X gypsum wallboard or gypsum veneer base applied at right angles to each side of double row of 2 x 4 wood studs 16" o.c. on separate plates 1" apart with 8d coated nails, 1½" long, 0.085" shank, ⅛" heads; 24" o.c. Face layer ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles to each side with 8d coated nails, 2½" long, 0.100" shank, ¼" heads; 8" o.c.

Joints staggered 16" each layer and side. Sound tested with 3½" glass fiber insulation stapled to studs in stud spaces on one side and with nails for base layer spaced 6" o.c. Horizontal bracing required at mid-height. (LOAD-BEARING)

| Thickness: | 10¾" |
| Approx. Weight: | 13 psf |
| Fire Test: | See WP 4135 (FM WP-360, 9-27-74) |
| Sound Test: | NGC 3655, 4-7-70 |

---

**GA FILE NO. WP 5530**  
**GENERIC**

#### GYPSUM WALLBOARD, WOOD STUDS

Base layer ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles to each side of 2 x 4 wood studs 16" o.c. staggered 8" o.c. on 2 x 6 wood plates with 8d coated nails, 1½" long, 0.085" shank, ⅛" heads; 24" o.c. Face layer ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles to each side with 8d coated nails, 2½" long, 0.113" shank, ¾" heads; 8" o.c.

Joints staggered 16" each layer and side. Sound tested with nails for base layer spaced 6" o.c. Horizontal bracing required at mid-height. (LOAD-BEARING)

| Thickness: | 9" |
| Approx. Weight: | 13 psf |
| Fire Test: | See WP 4135 (FM WP-360, 9-27-74) |
| Sound Test: | NGC 2377, 5-19-70 |

---

This Space Left Blank
## MOBILE AND OFFICE PARTITIONS

### GA FILE NO. WP 5010
**Proprietary**

**Gypsum Wallboard, Steel Studs**

- Base layer 3/8" gypsum wallboard applied parallel to each side of 1 1/8" steel studs 24" o.c. with 1" Type S drywall screws 12" o.c. at edges and ends only. Face layer 1/2" proprietary type X predecorated gypsum wallboard applied parallel to each side with proprietary clips 1/4" o.c. at edges and 1/2" Type S drywall screws 12" o.c. at floor and ceiling runners. Clips attached to studs with 1/4" Type S drywall screws.
- Joints staggered 24" o.c. each layer and side. Sound tested with 2¾" glass fiber insulation in stud space. (NLB)

**Proprietary Gypsum Board**

- SPF Canada Inc.
- 1/2" ProRoof® Type C Gypsum Panels

### GA FILE NO. WP 6010
**Generic**

**Gypsum Wallboard, Mineral Fiber Insulation, Steel Studs**

- One layer 1/4" type X predecorated gypsum wallboard applied parallel to each side of 2 1/2" steel studs 24" o.c. with 1" Type S drywall screws 30" o.c. at vertical joints. Aluminum battens snapped over 1/4" wide, 25 gage galvanized steel track at vertical joints attached with 1" Type S drywall screws 12" o.c. 2 1/2" aluminum base applied along bottom edge on steel base clips 24" o.c. applied with 1¼" Type S drywall screws. 2" mineral fiber insulation, 3.0 psf, in stud space.
- Joints staggered 24" on opposite sides. (NLB)

### GA FILE NO. WP 6020
**Generic**

**Gypsum Wallboard, Mineral Fiber Insulation, Steel Studs**

- One layer 1/4" type X predecorated gypsum wallboard applied parallel to each side of 2 1/2" steel studs 24" o.c. with 1" Type S drywall screws 30" o.c. at vertical joints and adhesive at intermediate studs. Aluminum battens snapped over 1/4" wide, 25 gage galvanized steel track at vertical joints attached with 1" Type S drywall screws 9" o.c. 2 1/2" aluminum base applied along bottom edge on steel base clips 24" o.c. applied with 1¼" Type S drywall screws. 2" mineral fiber insulation, 3.7 psf, in stud space.
- Joints staggered 24" on opposite sides. (NLB)

### GA FILE NO. WP 6025
**Generic**

**Gypsum Wallboard, Mineral Fiber Insulation, Steel Studs**

- One layer 1/4" type X gypsum wallboard applied parallel to each side of 2 1/2" steel studs 24" o.c. with 1" Type S drywall screws 12" o.c. at vertical joints and 1/2" beads of adhesive at intermediate studs. Aluminum battens applied over joints with 1" Type S drywall screws 12" o.c. 2" mineral fiber insulation, 3.8 psf, in stud space. 3¼" aluminum base applied along bottom edge on steel base clips 24" o.c. applied with 1¼" Type S drywall screws.
- Joints staggered 24" on opposite sides. (NLB)

### Contact Information
- **Thickness:** 3¾" (3 1/4"
- **Approx. Weight:** 7 psf
- **Fire Test:** UL 757-93, 7-27-70
- **Sound Test:** USG 17084, 5-18-70

*Contact the manufacturer for more detailed information on proprietary products.*
## MOBILE AND OFFICE PARTITIONS

### GA FILE NO. WP 6040
**GENERIC**

**GYPSUM WALLBOARD, STEEL STUDS**

One layer 1/8" type X predecorated gypsum wallboard applied parallel to each side of 2 1/8" steel studs 24" o.c. with 1/4" wide, 25 gage galvanized steel track fastened over each stud with 1/8" Type S drywall screws 5" o.c. Aluminum battens snapped over steel track and 2 1/2" aluminum base applied along bottom edge on steel base clips 24" o.c. applied with 1/4" Type S drywall screws.

Joints staggered 24" o.c. each side. Sound tested with 3" glass fiber insulation in stud space. STC 40 to 44 without glass fiber insulation. (NLB)

**1 HOUR FIRE**

**45 to 49 STC SOUND**

- Thickness: 3/8" 
- Approx. Weight: 7 psf 
- Fire Test: UL R2501 2B, 2C; 6-4-63; UL Design U405 
- Sound Test: GAH NG-145FT, 4-17-64; NG-146FT, 4-20-64

### GA FILE NO. WP 6070
**PROPRIETARY**

**GYPSUM WALLBOARD, STEEL STUDS**

One layer 24" or 30" wide 1/4" kerfed, beveled-edge proprietary gypsum wallboard applied parallel to each side of 2 1/2" H-studs 24" or 30" o.c. and 1 1/4" floor and ceiling runners with two 1 1/4" Type S drywall screws at floor and ceiling runners and stud flanges inserted in the kerfed panel edges. Aluminum trim strips screw attached 12" o.c. through panel into ceiling runner. An aluminum or steel one-piece combination runner and trim may be used in lieu of the steel ceiling runner and aluminum trim strips. Aluminum base trim may be used each side of wall with clip attachment.

Sound tested with 24" wide panels, one-piece ceiling runner and trim, and 1" mineral fiber insulation in stud space. STC 40 to 44 without mineral fiber insulation. (NLB)

**PROPRIETARY GYPSUM BOARD**

- United States Gypsum Company 
- 1/4" ULTRAWALL® Gypsum Panels (USG Insulations)

**1 HOUR FIRE**

**45 to 49 FSTC SOUND**

- Thickness: 3/8" 
- Approx. Weight: 7 psf 
- Fire Test: UC, 8-19-74; UC, 7-23-69; WHI-495-0120, 4-5-78; UL R1355, BSNK2228; 12-10-83; UL Design U427 
- Field Sound Test: BBN 70126, 12-22-73; BBN 701008, 11-5-70

### GA FILE NO. WP 6130
**GENERIC**

**GYPSUM WALLBOARD, STEEL STUDS**

One layer 30" wide 1/4" type X plain or predecorated gypsum wallboard applied parallel to each side of 2 1/2" steel studs 30" o.c. with 1 1/4" Type S drywall screws 30" o.c. Aluminum battens snapped over steel batten retainer strips at each stud and ceiling runner attached with 1 1/4" Type S drywall screws 9" o.c. and steel clips 24" o.c. at floor runner.

Sound tested with 2" glass fiber insulation in stud space. (NLB)

**1 HOUR FIRE**

**40 to 44 STC SOUND**

- Thickness: 3/4" 
- Approx. Weight: 5 1/2 psf 
- Fire Test: FM WP 109, 10-28-67 
- Sound Test: NGC 2218, 8-17-67

### GA FILE NO. WP 6135
**GENERIC**

**GYPSUM WALLBOARD, MINERAL FIBER INSULATION, STEEL STUDS**

One layer 1/8" type X plain or predecorated gypsum wallboard applied parallel to each side of 2 1/2" steel studs 24" o.c. with 1" Type S drywall screws 30" o.c. at vertical joints. Aluminum battens attached over each stud with 1" Type S drywall screws 12" o.c. 2" mineral fiber insulation, 2.63 psf, stapled 24" o.c. in stud space.

Joints staggered 24" on opposite sides. (NLB)

**1 HOUR FIRE**

**40 to 44 STC SOUND**

- Thickness: 3/8" 
- Approx. Weight: 6 psf 
- Fire Test: OSU T-4264, 2-9-88 
- Sound Test: KG 817, 11-5-68

*Contact the manufacturer for more detailed information on proprietary products.*
### METAL CLAD GYPSUM PANELS, MINERAL FIBER INSULATION, STEEL STUDS

One layer 30" wide metal faced ½" type X gypsum wallboard panels applied parallel to each side of 2½" fabricated steel studs 15" o.c. Metal cladding adhesively attached to wallboard. Studs fabricated from two members joined at webs with tabs and having steel flanges formed to provide spring receiving slots to receive edge flanges of cladding. Two layers 2¼" wide ½" type X gypsum wallboard strips attached to each side of stud webs. First strip attached with 1½" long Type S drywall screws 12 o.c. Second strip attached with 1½" long Type S drywall screws 24 o.c. and offset 6" from screws in first strip. 2" mineral fiber insulation, 3.8 pcf friction fit in stud cavities. Clad gypsum panels secured at vertical edges to studs by inserting ½" wide flanges of cladding into stud receiving slot; flanges of cladding are clipped 12" o.c. forming a ½" wide and ⅛" deep crisp to secure panels to studs. Panels attached to floor and ceiling runners with ⅞" Type S drywall screws located 4" from each corner and one in the middle at the bottom. Joints staggered 15" on opposite sides. (NLB)

### SOLID GYPSUM WALLBOARD

Face layer 24" wide ½" type X gypsum wallboard laminated parallel to each side of 1" gypsum coreboard. Face layer joints aligned on opposite sides and offset 9½" from coreboard joints to form an interlocking joint. Metal cap track 18 gauge 2¼" wide, 3" wide 20 gauge snap-in locking base. (NLB)

### SOLID GYPSUM WALLBOARD

Face layer 24" wide ½" gypsum wallboard laminated parallel to each side of 24" wide 1½" gypsum core fabricated from two layers ½" type X gypsum wallboard laminated together with adhesives over entire contact surfaces. Face layer joints aligned on opposite sides and offset 9½" from gypsum core joints to form an interlocking joint. Metal cap track 18 gauge 2¼" wide, 3" wide 20 gauge snap in locking base. (NLB)

### SEMI-SOLID GYPSUM WALLBOARD

Face layer 24" wide ½" type X gypsum wallboard laminated parallel to each side of 6" wide 1" gypsum coreboard studs. Face layer joints aligned on opposite sides and offset from stud edges 9½" to form an interlocking joint. Face layer attached to studs with 1½" long Type S screws 30" o.c. spaced 2" from joint on tongue edge and 4" from joint on groove edge. Panels mounted in floor and ceiling channels. (NLB)
### MOVABLE AND OFFICE PARTITIONS

<table>
<thead>
<tr>
<th>GA FILE NO. WP 6250</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
<th>35 to 39 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 1/2&quot; type X predecorated gypsum wallboard applied parallel to each side of 21/2&quot; steel studs 24&quot; o.c. with 1&quot; Type S drywall screws 30&quot; o.c. Aluminum baffles attached over each stud with 11/2&quot; Type S drywall screws 12&quot; o.c. and covered with plastic inserts. 4&quot; snap-on aluminum base applied to bottom edge of assembly. Joints staggered 24&quot; on opposite sides. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 3/8&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 5 psf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: OSU T-2598, 9-17-64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound Test: OR 64-65, 7-17-64</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 6254</th>
<th>PROPRIETARY</th>
<th>1 HOUR FIRE</th>
<th>35 to 39 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 1/2&quot; proprietary type X gypsum wallboard installed parallel to 21/2&quot; steel studs 24&quot; o.c. with proprietary clips at vertical joints, 1&quot; Type S drywall screws 8&quot; o.c. at floor and ceiling runners, and 6&quot; wide strips of adhesive 18&quot; o.c. at intermediate studs. Clips attached 10&quot; o.c. to studs at vertical joints with 11/2&quot; Type S panhead screws. One piece of 1/2&quot; proprietary type X gypsum board placed between the studs in stud cavity. Joints staggered 24&quot; on opposite sides. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BPB Canada Inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROPRIETARY GYPSUM BOARD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 31/2&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 6 psf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: WHI 495-2961, 2-12-85; WHI 495-2962, 2-12-85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound Test: BCL 472, 5-18-78</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 6525</th>
<th>PROPRIETARY</th>
<th>2 HOUR FIRE</th>
<th>50 to 54 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, MINERAL FIBER INSULATION, STEEL STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 24&quot; wide 11/4&quot; kerfed, beveled-edge proprietary gypsum wallboard applied parallel to ONE SIDE of 23/4&quot; wide H-studs and 11/4&quot; floor and ceiling runners with two 11/4&quot; Type S drywall screws at floor and ceiling runners and stud flanges inserted in kerfed panel edges. 11/4&quot; mineral fiber insulation, 3.0 psf, in stud space. OPPOSITE SIDE: Base layer 24&quot; wide 11/4&quot; kerfed, beveled-edge proprietary gypsum wallboard applied parallel to studs with two 11/4&quot; Type S drywall screws at floor and ceiling runners and stud flanges inserted in kerfed panel edges. Face layer 24&quot; wide 11/4&quot; kerfed, beveled-edge proprietary gypsum wallboard applied parallel to studs over 2&quot; wide 11/4&quot; gypsum board spacer strips at floor and ceiling runners and 11/4&quot; Z-splines in the kerfed panel edges. Spacer strips attached with 11/4&quot; Type S drywall screws 24&quot; o.c. Face layer attached to floor and ceiling runners with two 21/4&quot; Type S drywall screws per panel. Z-splines attached to H-studs with screws 24&quot; o.c. 11/4&quot; wide metal trim strips screw-attached both faces at ceiling runner.(NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROPRIETARY GYPSUM BOARD</td>
<td>United States Gypsum Company</td>
<td>1/4&quot; ULTRAWALL® Gypsum Panels (USC Interiors)</td>
<td></td>
</tr>
<tr>
<td>Thickness: 41/2&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 12 psf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL R1319-130, 4-27-73, UL Design U416</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound Test: RAL T70-198, 4-8-70</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
### Shaft Walls

#### GA File No. WP 6800

**Proprietary**

**Gypsum Wallboard, Steel C-T Studs**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling runners with ½" section of 2½" steel C-T studs between panels.

OPPOSITE SIDE: One layer ½" proprietary type X gypsum wallboard applied parallel to studs with 1" Type S drywall screws 12" O.C.

Sound tested with horizontal resilient channels 24" O.C. and 2½" glass fiber friction fit in stud space. (NLB)

**Proprietary Gypsum Board**

- ½" Flame Cur® Super "C"/®
- 1" Pabcore® Gypsum Liner Board

**Physical Properties**

- Thickness: 3½"
- Approx. Weight: 7 psf
- Fire Test: WHI-405-1303, 7-19-96
- Sound Test: NAL TL90-28, 2-13-96

#### GA File No. WP 6905

**Proprietary**

**Gypsum Wallboard, Steel I Studs**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling runners with ½" section of 2½" steel I studs between panels.

OPPOSITE SIDE: One layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to studs with 1" Type S drywall screws 12" O.C.

Sound tested with 1½" glass fiber insulation friction fit in stud space. (NLB)

**Proprietary Gypsum Board**

- ½" Gold Bond® Brand FIRE-SHIELD® Gypsum Wallboard
- 1" Gold Bond® Brand FIRE-SHIELD® Shafliner

**Physical Properties**

- Thickness: 3½"
- Approx. Weight: 7 psf
- Fire Test: UL R3501, 99NK22748, 9-15-93; 97NK24041, 7-14-97; UL Design U499;
  FM WP-755,2-27-85
- Sound Test: NGC 2542, 5-11-76

#### GA File No. WP 7000

**Proprietary**

**Gypsum Wallboard, Steel C-T Studs**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling runners with ½" section of 2½" proprietary C-T steel studs between panels.

OPPOSITE SIDE: One layer ½" proprietary type X gypsum wallboard applied parallel to studs with 1" Type S drywall screws 8" O.C. at edges and 12" O.C. at intermediate studs. (NLB)

**Proprietary Gypsum Board**

- ½" ToughRock® Fireguard®
- 1" ToughRock® Fireguard® Shafliner

**Physical Properties**

- Thickness: 3½"
- Approx. Weight: 7 psf
- Fire Test: GET, 1-7-74;
  ITS, 8-30-01;
  IT5 Design GPWA 60-01
- Sound Test: Estimated

*Contact the manufacturer for more detailed information on proprietary products.*
### SHAFT WALLS

<table>
<thead>
<tr>
<th>GA FILE NO. WP 7001</th>
<th>PROPRIETARY*</th>
<th>1 HOUR FIRE</th>
<th>35 to 39 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL C-T STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling J runners with T section of 2½" proprietary C-T steel studs between panels.

**OPPOSITE SIDE:** One layer ¾" proprietary type X gypsum wallboard applied parallel to studs with 1" Type S drywall screws 8" o.c. at edges and 12" o.c. at intermediate studs. (NLB)

**PROPRIETARY GYPSUM PANEL PRODUCTS**

- G-P Gypsum
  - ¾" ToughRock® Fireguard®
  - 1" DensGlass® Ultra Shaftliner

| Thickness: | 3½" |
| Approx. Weight: | 7 psf |
| Fire Test: | CET, 1-7-74; ITS, 8-30-61; ITS Design GPWA 60-1 |
| Sound Test: | Estimated |

---

<table>
<thead>
<tr>
<th>GA FILE NO. WP 7008</th>
<th>PROPRIETARY*</th>
<th>1 HOUR FIRE</th>
<th>35 to 39 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL C-H STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling J runners with H section of 2½" proprietary vented C-H steel studs between panels.

**OPPOSITE SIDE:** One layer ¾" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to studs with 1" Type S drywall screws 12" o.c.

**STC estimate based on 1" mineral fiber insulation in stud space. (NLB)**

**PROPRIETARY GYPSUM BOARD**

- American Gypsum Company
  - ¾" FireBlok® Type X
- BPB America Inc.
  - ¾" ProRoof® Type C Gypsum Panels
- Lafarge North America Inc.
  - ¾" Firecheck® Type C
- PABCO Gypsum
  - ¾" FLAME CURB® Type X
- Temple-Inland Forest Products Corporation
  - ¾" Type X
- United States Gypsum Company
  - ¾" SHEETROCK® Brand FIRECODE®
  - Core Gypsum Panels
  - 1″ SHEETROCK® Brand Gypsum Liner Panels

| Thickness: | 3½" |
| Approx. Weight: | 8 psf |
| Fire Test: | UL RS 13-69, E-8-38, UL Design U489 |
| Sound Test: | Estimated |

---

<table>
<thead>
<tr>
<th>GA FILE NO. WP 7020</th>
<th>PROPRIETARY*</th>
<th>1 HOUR FIRE</th>
<th>35 to 39 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL SLOTTED I STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling runners with sub-flange section of 2½" steel I stud between panels. Also fire tested using 2½" steel C-T studs.

**OPPOSITE SIDE:** One layer ¾" proprietary type X gypsum wallboard applied parallel to studs with 1" Type S drywall screws 8" o.c. at edges and 12" o.c. at intermediate studs.

**STC estimate based on 1" glass fiber insulation in stud space. (NLB)**

**PROPRIETARY GYPSUM BOARD**

- BPB America Inc.
  - ¾" ProRoof® Type C Gypsum Panels
  - 1" ProRoof® Shaftliner

| Thickness: | 3½" |
| Approx. Weight: | 7 psf |
| Fire Test: | WHI-851-0306.1, 10-2, 3, 4, & 5-89; GET 1-7-74 |
| Sound Test: | Estimated |

*Contact the manufacturer for more detailed information on proprietary products.*
### SHAFT WALLS

#### GA FILE NO. WP 7051

**Gypsum Wallboard, Steel C-H or C-T Studs**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling J runners with T section of 2½" steel C-H or C-T studs between panels.

OPPOSITE SIDE: Base layer ½" proprietary type X gypsum wallboard applied at right angles to studs with 1" Type S drywall screws 24° o.c. Face layer ½" proprietary type X gypsum wallboard applied parallel to studs with 1½" Type S drywall screws 12° o.c.

Sound tested with 1½" glass fiber insulation in stud space. (NLB)

**Proprietary Gypsum Board**

- American Gypsum Company: ½" FireBloc® TYPE C
- National Gypsum Company: ½" Gold Bond® Brand FIRE-SHIELD C®
- PABCO Gypsum: ½" FLAME CURB® Super C™
- Temple-Inland Forest Products Corporation: ½" TG-C
- 1" Silent Guard™ Gypsum Liner Board

Thickness: 3½"

Approx. Weight: 9 psf

Fire Test: UL R7094, 93NK0151, 9-14-93,

Sound Test: RAL TL93-161, 7-1-93

---

#### GA FILE NO. WP 7052

**Gypsum Wallboard, Steel C-H or C-T Studs**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling J runners with T section of 2½" steel C-H or C-T studs between panels. Face layer ½" proprietary type X gypsum wallboard applied parallel to studs with vertical joints midway between studs and laminated to proprietary gypsum panels with 4" wide strips of taping compound at wallboard perimeter and vertical centerline. 1½" Type G drywall screws 24° o.c. located ½" back from wallboard edges and at vertical centerline.

OPPOSITE SIDE: Base layer ½" proprietary type X gypsum wallboard applied at right angles to studs with 1" Type S drywall screws 24° o.c. Face layer ½" proprietary type X gypsum wallboard applied parallel to studs with 1½" Type S drywall screws 12° o.c.

Sound tested with 1½" glass fiber insulation in stud space. (NLB)

**Proprietary Gypsum Board**

- American Gypsum Company: ½" FireBloc® TYPE C
- PABCO Gypsum: ½" FLAME CURB® Super C™
- Temple-Inland Forest Products Corporation: ½" TG-C
- 1" Silent Guard™ Gypsum Liner Board

Thickness: 4"

Approx. Weight: 11 psf

Fire Test: See WP 7051

Sound Test: See WP 7051

---

#### GA FILE NO. WP 7053

**Gypsum Wallboard, Steel C-H Studs, Mineral Fiber Insulation**

One layer 1" x 24" proprietary type X gypsum liner panels inserted between 4" floor and ceiling J runners with H section of 4" proprietary vented C-H steel studs between panels. 3" proprietary mineral fiber insulation, 2.0 psf, in stud space. When wall height exceeds liner panel length, liner panels are butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing.

OPPOSITE SIDE: One layer ¼" proprietary type X gypsum wallboard applied parallel or at right angles to studs with 1¼" Type S drywall screws 8" o.c. at vertical edges and 12" o.c. at intermediate studs when installed parallel to studs or 8" o.c. at vertical joints and intermediate studs when applied at right angles to studs. Horizontal joints need not be backed by steel framing. (NLB)

**Proprietary Gypsum Board**

- United States Gypsum Company: ¾" SHEETROCK® Brand ULTRACODE®
- Core Gypsum Panels: 1" SHEETROCK® Brand Gypsum Liner Panels

Thickness: 4½"

Approx. Weight: 8 psf

Fire Test: UL R1319, 97NK33240, 11-20-97,

Field Sound Test: SA-910913, 9-12-91

---

*Contact the manufacturer for more detailed information on proprietary products.*
### SHAFT WALLS

<table>
<thead>
<tr>
<th>GA FILE NO. WP 7056</th>
<th>PROPRIETARY*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM BOARD, SLOTTED STEEL I STUDS</strong></td>
<td></td>
</tr>
<tr>
<td>One layer 1&quot; x 24&quot; proprietary type X gypsum panels inserted between 2½&quot; floor and ceiling runners with lab-flange section of 2½&quot; slotted steel I studs between panels. Also fire tested using 2½&quot; steel C-T studs.</td>
<td></td>
</tr>
<tr>
<td><strong>OPPOSITE SIDE:</strong> Base layer ½&quot; proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to studs with 1 Type S drywall screws 24&quot; o.c. Face layer ½&quot; proprietary type X gypsum wallboard on veneer base applied parallel to studs with 1½&quot; Type S drywall screws 12&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>Sound tested with horizontal resilient channels 24&quot; o.c. and 1&quot; glass fiber insulation friction fit in stud space. (N.L.B)</td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
</tr>
<tr>
<td>BPB America Inc.</td>
<td>- ½&quot; ProRock® Type C Gypsum Panels</td>
</tr>
<tr>
<td></td>
<td>- 1&quot; ProRock® Shaftliner</td>
</tr>
<tr>
<td><strong>2 HOUR FIRE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>50 to 54 STC SOUND</strong></td>
<td></td>
</tr>
<tr>
<td>Thickness: 4&quot;</td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 9 psf</td>
<td></td>
</tr>
<tr>
<td>Fire Test:</td>
<td></td>
</tr>
<tr>
<td>See WP 7058</td>
<td></td>
</tr>
<tr>
<td>(WHI 495-0528, 7-12-83;</td>
<td></td>
</tr>
<tr>
<td>WHI 495-0556, 11-1-83;</td>
<td></td>
</tr>
<tr>
<td>WHI 495-1227, 2-10-93;</td>
<td></td>
</tr>
<tr>
<td>WHI 495-1244, 6-30-93)</td>
<td></td>
</tr>
<tr>
<td>Sound Test:</td>
<td></td>
</tr>
<tr>
<td>Estimated, see WP 7057</td>
<td></td>
</tr>
<tr>
<td>(WEAL 84-107, 3-16-84)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 7057</th>
<th>PROPRIETARY*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, SLOTTED STEEL I STUDS</strong></td>
<td></td>
</tr>
<tr>
<td>One layer 1&quot; x 24&quot; proprietary type X gypsum panels inserted between 2½&quot; floor and ceiling runners with lab-flange section of 2½&quot; slotted steel I studs between panels. One layer ½&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1½&quot; Type S drywall screws 12&quot; o.c. Also fire tested using 2½&quot; steel C-T studs.</td>
<td></td>
</tr>
<tr>
<td>Sound tested with horizontal resilient channels 24&quot; o.c. and 1&quot; glass fiber insulation friction fit in stud space. (N.L.B)</td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
</tr>
<tr>
<td>BPB America Inc.</td>
<td>- ½&quot; ProRock® Type C Gypsum Panels</td>
</tr>
<tr>
<td></td>
<td>- 1&quot; ProRock® Shaftliner</td>
</tr>
<tr>
<td><strong>2 HOUR FIRE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>50 to 54 STC SOUND</strong></td>
<td></td>
</tr>
<tr>
<td>Thickness: 4&quot;</td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 9 psf</td>
<td></td>
</tr>
<tr>
<td>Fire Test:</td>
<td></td>
</tr>
<tr>
<td>See WP 7059</td>
<td></td>
</tr>
<tr>
<td>(WHI 495-0509, 11-4-83;</td>
<td></td>
</tr>
<tr>
<td>WHI 495-0570, 11-7-83;</td>
<td></td>
</tr>
<tr>
<td>WHI 495-1225, 2-8-83;</td>
<td></td>
</tr>
<tr>
<td>WHI 495-1245, 7-1-83)</td>
<td></td>
</tr>
<tr>
<td>Sound Test:</td>
<td></td>
</tr>
<tr>
<td>WEAL 84-107, 3-16-84)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. WP 7060</th>
<th>PROPRIETARY*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL I STUDS</strong></td>
<td></td>
</tr>
<tr>
<td>One layer 1&quot; x 24&quot; proprietary type X gypsum panels inserted between 2½&quot; floor and ceiling runners with lab-flange section of 2½&quot; steel I studs between panels.</td>
<td></td>
</tr>
<tr>
<td><strong>OPPOSITE SIDE:</strong> Base layer ¾&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to studs with 1½&quot; Type S drywall screws 24&quot; o.c. Face layer ¾&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel to studs with 1½&quot; Type S drywall screws 12&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>Sound tested with horizontal resilient channels 24&quot; o.c. and 1½&quot; glass fiber insulation friction fit in stud space. (N.L.B)</td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
</tr>
<tr>
<td>National Gypsum Company</td>
<td>- ¾&quot; Gold Bond® Brand FIRE-SHIELD® Gypsum Wallboard</td>
</tr>
<tr>
<td></td>
<td>- 1½&quot; Gold Bond® Brand FIRE-SHIELD® Shaftliner</td>
</tr>
<tr>
<td><strong>2 HOUR FIRE</strong></td>
<td></td>
</tr>
<tr>
<td><strong>50 to 54 STC SOUND</strong></td>
<td></td>
</tr>
<tr>
<td>Thickness: 4½&quot;</td>
<td></td>
</tr>
<tr>
<td>Approx. Weight: 9 psf</td>
<td></td>
</tr>
<tr>
<td>Fire Test:</td>
<td></td>
</tr>
<tr>
<td>UC ES-7408, 11-21-75</td>
<td></td>
</tr>
<tr>
<td>(Rev 6-76)</td>
<td></td>
</tr>
<tr>
<td>Sound Test:</td>
<td></td>
</tr>
<tr>
<td>KAL 437362, 11-3-76</td>
<td></td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
**SHAFT WALLS**

### GA FILE NO. WP 7061

**GYPSUM WALLBOARD, STEEL I STUDS**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling runners with tab-flange section of 2½" steel I studs between panels. One layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to each side with 1½" Type S drywall screws 12" o.c.

Sound tested with horizontal resilient channels 24" o.c. and ½" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

<table>
<thead>
<tr>
<th>Thickness:</th>
<th>4½&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Weight:</td>
<td>9 psf</td>
</tr>
<tr>
<td>Fire Test:</td>
<td>UC ES-7407, 1-22-76</td>
</tr>
<tr>
<td>Sound Test:</td>
<td>KGL 407563, 11-4-76</td>
</tr>
</tbody>
</table>

### GA FILE NO. WP 7062

**GYPSUM WALLBOARD, STEEL C-H, C-T, OR I STUDS**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling runners with tab-flange section of 2½" steel C-H, C-T, or I studs between panels. One layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side with 1½" Type S drywall screws 12" o.c.

Sound tested with horizontal resilient channels 24" o.c. and ½" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

<table>
<thead>
<tr>
<th>Thickness:</th>
<th>4&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Weight:</td>
<td>9 psf</td>
</tr>
<tr>
<td>Fire Test:</td>
<td>See WP 7069</td>
</tr>
<tr>
<td>(UL R3501, 93NK22748, 9-15-93, 97NK4586, 1-30-97; 97NK2247, 2-4-97; UL Design U498; FM WP-545, 12-22-81)</td>
<td></td>
</tr>
<tr>
<td>Sound Test:</td>
<td>BBN NGC 2510, 4-15-82</td>
</tr>
</tbody>
</table>

### GA FILE NO. WP 7064

**GYPSUM WALLBOARD, STEEL C-H, C-T, OR I STUDS**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling runners with tab-flange section of 2½" steel C-H, C-T, or I studs between panels.

**OPPOSITE SIDE:** Base layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to studs with 1½" Type S drywall screws 24" o.c. Face layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied either parallel to studs with 1½" Type S drywall screws 12" o.c. or at right angles to studs with 1½" Type S drywall screws 8° o.c. at wall perimeter and vertical joints and 12° o.c. at intermediate studs.

Sound tested with horizontal resilient channels 24" o.c. and ½" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

<table>
<thead>
<tr>
<th>Thickness:</th>
<th>4&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approx. Weight:</td>
<td>9 psf</td>
</tr>
<tr>
<td>Fire Test:</td>
<td>See WP 7060</td>
</tr>
<tr>
<td>(UL R3501, 93NK22748, 9-15-93, UL Design U497; FM WP-836, 10-14-81; WHI-651-0500, 3-22-89 &amp; 7-18-89)</td>
<td></td>
</tr>
<tr>
<td>Sound Test:</td>
<td>BBN NGC 2609, 4-15-82</td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
# Shaft Walls

## Gypsum Wallboard, Steel C-T Studs

### 2 Hour Fire

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Thickness</th>
<th>Approx. Weight</th>
<th>Fire Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1” G-P Gypsum</td>
<td>3½”</td>
<td>9 psf</td>
<td>ITS, 8-30-01, ITS Design GP/VA 120-02, ITS Design GP/VA 120-01</td>
</tr>
</tbody>
</table>

### 45 to 49 STC Sound

- See WP 7097 (RAL TL89-380, 11-8-89)

## Proprietary Gypsum Panel Products

### G-P Gypsum

- ½” ToughRock® Fireguard® C
- 1” DensGlass® Ultra Shieldliner™

### Additional Notes

- Joints staggered 24” on opposite sides. Sound tested with 1” glass fiber insulation friction fit in stud space. (NLB)

## Contact the manufacturer for more detailed information on proprietary products.
### GA FILE NO. WP 7077

**GYPSUM WALLBOARD, STEEL C-H STUDS**

One layer 1" x 24" proprietary Type X gypsum panels inserted between 2½" floor and ceiling runners with tab-flange section of 2½" steel C-H studs between panels. One layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to studs on each side with 1" Type S drywall screws 12" o.c.

Sound tested with 1½" glass fiber insulation friction fit in stud space. (NLB)

#### PROPRIETARY GYPSUM BOARD

| Thickness: | 3½" |
| Approx. Weight: | 8½ lbs |
| Fire Test: | WHI 495-0991, 12-9-77; WHI 495-0995, 12-16-77 |
| Sound Test: | WHI F2, 3-13-78 |

### GA FILE NO. WP 7078

**GYPSUM WALLBOARD, STEEL C-T OR 1 STUDS**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling runners with tab-flange section of 2½" steel C-T or 1 stud between panels.

OPPOSITE SIDE: Base layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to studs with 1" Type S drywall screws 24" o.c.

Face layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to base layer with 1½" Type S drywall screws 12" o.c.

Sound tested with 2½" glass fiber insulation friction fit in stud space. (NLB)

#### PROPRIETARY GYPSUM BOARD

| Thickness: | 3½" |
| Approx. Weight: | 8½ lbs |
| Fire Test: | WHI 495-0991, 12-9-77; WHI 495-0995, 12-16-77 |
| Sound Test: | WHI F2, 3-13-78 |

### GA FILE NO. WP 7079

**GYPSUM WALLBOARD, STEEL C-H, C-T, OR 1 STUDS**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling runners with tab-flange section of 2½" steel C-H, C-T, or 1 stud between panels. One layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side with 1" Type S drywall screws 12" o.c.

Sound tested with 1½" glass fiber insulation friction fit in stud space. (NLB)

#### PROPRIETARY GYPSUM BOARD

| Thickness: | 3½" |
| Approx. Weight: | 9 lbs |
| Fire Test: | UL R3501, 93NK2748, 9-15-83; 97NK4528, 1-30-97; 97NK5247, 2-4-97; UL Design U439; FM WP-545, 12-22-81 |
| Sound Test: | NGC 2617, 7-27-82 |

*Contact the manufacturer for more detailed information on proprietary products.*
### SHAFT WALLS

**GA FILE NO. WP 7080**

<table>
<thead>
<tr>
<th>PROPRIETARY*</th>
<th>2 HOUR FIRE</th>
<th>45 to 49 STC SOUND</th>
</tr>
</thead>
</table>

**GYPSUM WALLBOARD, STEEL C-H, C-T, OR I STUDS**

One layer 1" x 24" proprietary type X gypsum panels inserted between 21/4" floor and ceiling runners with tab-flange section of 21/2" steel C-H, C-T, or I studs between panels.

OPPOSITE SIDE: Base layer 1/4" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to studs with 1" Type S drywall screws 24" o.c. Face layer 1/4" proprietary type X gypsum wallboard or gypsum veneer base applied either parallel to studs with 1/4" Type S drywall screws 12" o.c. or at right angles to studs with 1/4" Type S drywall screws 8" o.c. at wall perimeter and vertical joints and 12" o.c. at intermediate studs.

Sound tested with 11/4" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

- American Gypsum Company - 1/2" Fireblock® Type C
- Lafarge North America Inc. - 1/2" Firecheck® Type C
- National Gypsum Company - 1" Gold Bond® Brand FIRE-SHIELD C™
- Gypsum Wallboard - 1" Gold Bond® Brand FIRE-SHIELD® Stabiliner
- Temple-Inland Forest Products Corporation - 1/2" TG-C

**GA FILE NO. WP 7081**

<table>
<thead>
<tr>
<th>PROPRIETARY*</th>
<th>2 HOUR FIRE</th>
<th>45 to 49 FSTC SOUND</th>
</tr>
</thead>
</table>

**GYPSUM WALLBOARD, CEMENTITIOUS BACKER UNITS, STEEL C-H STUDS**

One layer 1" x 24" proprietary type X gypsum liner panels inserted between 21/4" floor and ceiling runners with H section of 21/2" 20 gage proprietary channel C-H steel studs between panels. 11/4" mineral fiber insulation in stud space. When wall height exceeds liner panel length, liner panels are buttted to extend to the full height of the wall. Horizontal joint need not be backed by steel framing.

OPPOSITE SIDE: Base layer 1/4" proprietary type X gypsum wallboard applied parallel or at right angles to studs with 1" long Type S drywall screws 24" o.c. when applied parallel to studs or 15" o.c. when applied at right angles to studs. Face layer 1/4" or 1/2" proprietary cementitious backer units applied parallel or at right angles to studs with 1 1/2" long Type S wafer head screws spaced 8" o.c. Vertical joints offset on stud cavity from gypsum wallboard joints. Horizontal joints offset not less than 12" from gypsum wallboard joints. (NLB)

**PROPRIETARY GYPSUM BOARD**

- United States Gypsum Company - 1/2" SHEETROCK® Brand FIRECODE® Core Gypsum Panels
- 1" SHEETROCK® Brand Gypsum Liner Panels

**GA FILE NO. WP 7082**

<table>
<thead>
<tr>
<th>PROPRIETARY*</th>
<th>2 HOUR FIRE</th>
<th>45 to 49 STC SOUND</th>
</tr>
</thead>
</table>

**GYPSUM BOARD, SLOTTED STEEL I STUDS**

One layer 1" x 24" proprietary type X gypsum panels inserted between 21/4" floor and ceiling runners with tab-flange section of 21/2" slotted steel I studs between panels.

OPPOSITE SIDE: Base layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to studs with 1" Type S drywall screws 24" o.c. Face layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to studs with 1/2" Type S drywall screws 12" o.c.

Sound tested with 11/4" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

- BPB Americas Inc. - 1/2" ProRoc™ Type C Gypsum Panels
- 1" ProRoc® Shaftliner
- G-P Gypsum - 1/4" ToughRock® Fireguard® C
- 1" ToughRock® Fireguard® Shaftliner
- PABCO Gypsum - 1/4" FLAME CURB® Type XXX
- 1" PABCORE® Gypsum Liner Board

*Contact the manufacturer for more detailed information on proprietary products.*
### GA FILE NO. WP 7084

**Gypsum Wallboard, Steel C-H or C-T Studs**

One layer 1" x 24" proprietary type X gypsum panels inserted between 21/2" floor and ceiling joists with the flange section of 21/2" steel C-H studs between panels. One layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1" Type S drywall screws 12" o.c.

Sound tested with 1/2" glass fiber insulation friction fit in stud space. (NLB)

**Proprietary Gypsum Board**

- American Gypsum Company: 1/2" FireBlock® Type C
- National Gypsum Company: 1/2" Gold Bond® Brand FIRE-SHIELD C™
- Temple-Inland Forest Products Corporation: 1/2" FLAME CURB® Super C™

**Thickness:** 3/4 "

**Approx. Weight:** 9 psf

**Fire Test:** UL 723-87, 7-12-83

**Sound Test:** WEAL 84-106, 3-15-84

### GA FILE NO. WP 7095

**Gypsum Wallboard, Steel C-H Studs**

One layer 1" x 24" proprietary type X gypsum panels inserted between 21/2" floor and ceiling joists with the flange section of 21/2" proprietary want-id C-H steel studs between panels. OPPOSITE SIDE: Base layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to studs with 1" Type S drywall screws 24" o.c. Face layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to studs with 1/2" Type S drywall screws 12" o.c. Joints offset 24" o.c. from base layer joints.

Sound tested with 1" mineral fiber insulation in cavity. (NLB)

**Proprietary Gypsum Board**

- American Gypsum Company: 1/2" FireBlock® Type C
- Lafarge North America Inc.: 1/2" Fireblock® Type C
- Temple-Inland Forest Products Corporation: 1/2" TG-C
- United States Gypsum Company: 1/2" SHEETROCK® Brand FIRECODE® C

**Thickness:** 3 1/4 "

**Approx. Weight:** 6 psf

**Fire Test:** UL R1319, 82N27432.

**Field Sound Test:** USN 760706, 7-15-75

*Contact the manufacturer for more detailed information on proprietary products.*
### SHAFT WALLS

**GA FILE NO. WP 7096**

**GYPSCUM WALLBOARD, STEEL C-T STUDS**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling inners with T section of 2½" steel C-T studs between panels.

**OPPOSITE SIDE:** Base layer ½" proprietary type X gypsum wallboard applied at right angles to studs with ½" Type S drywall screws 24" o.c. and 8" from floor and ceiling runners. Face layer ½" proprietary type X gypsum wallboard applied parallel to studs with 1½" Type S drywall screws 12" o.c. and 3" from floor and ceiling runners. Joints offset 24" from base layer joints.

Sound tested with 1" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSCUM BOARD**

<table>
<thead>
<tr>
<th>G-P Gypsum</th>
<th>½&quot; ToughRock® Fireguard® C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lafarge North America Inc.</td>
<td>½&quot; Firecheck® Type C</td>
</tr>
<tr>
<td>National Gypsum Company</td>
<td>½&quot; Gold Bond® Brand FIRE-SHIELD®</td>
</tr>
<tr>
<td>Gypsum Wallboard</td>
<td>1½&quot; Gold Bond® Brand FIRE-SHIELD®</td>
</tr>
</tbody>
</table>

| Thickness: | 3½" |
| Approx. Weight: | 9 psf |
| Fire Test: | WHI 405-179, 5-12-82 |
| Test: | ITS Design GPWA 120-01; |
| Test: | WHI 495-1187, 5-29-92; |
| Test: | WHI 495-1189, 6-22-82; |
| Test: | WHI 495-1224, 5-17-93; |
| Test: | WHI 495-1404/1405/1408/ |
| Test: | 1409, 5-15-98; |
| Test: | ITS Design LGWA 120-21 |

**GA FILE NO. WP 7097**

**GYPSCUM WALLBOARD, STEEL C-T STUDS**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling inners with T section of 2½" steel C-T studs between panels. One layer ½" proprietary type X gypsum wallboard applied parallel to each side with 1½" Type S drywall screws 12" o.c.

Joints staggered 24" on opposite sides. Sound tested with 1" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSCUM BOARD**

<table>
<thead>
<tr>
<th>G-P Gypsum</th>
<th>½&quot; ToughRock® Fireguard® C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lafarge North America Inc.</td>
<td>½&quot; Firecheck® Type C</td>
</tr>
<tr>
<td>National Gypsum Company</td>
<td>½&quot; Gold Bond® Brand FIRE-SHIELD®</td>
</tr>
<tr>
<td>Gypsum Wallboard</td>
<td>1½&quot; Gold Bond® Brand FIRE-SHIELD®</td>
</tr>
</tbody>
</table>

| Thickness: | 3½" |
| Approx. Weight: | 9 psf |
| Fire Test: | WHI 495-1192, 5-15-92; |
| Test: | WHI 495-1200, 12-17-92; |
| Test: | ITS Design GPWA 120-02; |
| Test: | WHI 495-1201, 9-24-92; |
| Test: | WHI 495-1223, 3-3-93; |
| Test: | WHI 495-1406/1407/1410/ |
| Test: | 1411, 5-22-98; |
| Test: | ITS Design LGWA 120-20 |

**GA FILE NO. WP 7098**

**GYPSCUM BOARD, STEEL C-T OR SLOTTED I STUDS**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling inners with tee-flange section of 2½" steel C-T or slotted I studs between panels.

**OPPOSITE SIDE:** Base layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to studs with ½" Type S drywall screws 24" o.c. Face layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to studs with 1½" Type S drywall screws 12" o.c.

Sound tested with 1" glass fiber friction fit in stud space. (NLB)

**PROPRIETARY GYPSCUM BOARD**

<table>
<thead>
<tr>
<th>BPE America Inc.</th>
<th>½&quot; ProRock® Type C Gypsum Panels</th>
</tr>
</thead>
<tbody>
<tr>
<td>1½&quot; ProRock® Shaftliner</td>
<td></td>
</tr>
</tbody>
</table>

| Thickness: | 3½" |
| Approx. Weight: | 9 psf |
| Fire Test: | WHI 495-0528, 7-12-83; |
| Test: | WHI 495-056, 11-1-83; |
| Test: | WHI 495-1227, 2-10-93; |
| Test: | WHI 495-1244, 6-30-93 |

**Sound Test:** See WP 7099 (WEAL 84-108, 3-6-84)

*Contact the manufacturer for more detailed information on proprietary products.*
**SHAFT WALLS**

### GYPSUM WALLBOARD, STEEL C-T OR SLOTTED I STUDS

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling runners with tab-fangle section of 2½" steel C-T or slotted I studs between panels. One layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1" Type S drywall screws 12" o.c.

Sound tested with 1" glass fiber friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

<table>
<thead>
<tr>
<th>Material</th>
<th>Thickness</th>
<th>Approx. Weight</th>
<th>Fire Test</th>
<th>Sound Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPB America Inc.</td>
<td>3½&quot;</td>
<td>9 psf</td>
<td>WHI 495-0569, 11-4-83;</td>
<td></td>
</tr>
<tr>
<td>½&quot; ProRock® Type C Gypsum Panels</td>
<td></td>
<td></td>
<td>WHI 495-0570, 11-7-83;</td>
<td></td>
</tr>
<tr>
<td>¼&quot; ProRock® Shalfrliner</td>
<td></td>
<td></td>
<td>WHI 495-1225, 2-8-93;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WHI 495-1249, 7-1-83;</td>
<td></td>
</tr>
</tbody>
</table>

### GYPSUM WALLBOARD, STEEL C-H STUDS

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling runners with H section of 2½" proprietary vented C-H steel studs between panels. One layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1" Type S drywall screws 12" o.c.

Joints staggered 24" on opposite sides. (NLB)

**PROPRIETARY GYPSUM BOARD**

<table>
<thead>
<tr>
<th>Material</th>
<th>Thickness</th>
<th>Approx. Weight</th>
<th>Fire Test</th>
<th>Sound Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Gypsum Company</td>
<td>3½&quot;</td>
<td>9 psf</td>
<td>UL R1319; R11633,</td>
<td></td>
</tr>
<tr>
<td>Lafarge North America Inc.</td>
<td></td>
<td></td>
<td>879K21484, 9-14-87,</td>
<td></td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td></td>
<td></td>
<td>UL Design U467</td>
<td></td>
</tr>
<tr>
<td>United States Gypsum Company</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>½&quot; Fireblend® Type C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>½&quot; Firecheck® Type C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⅛&quot; TG-C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHEETROCK® Brand FIRECODE® C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Gypsum Panels</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHEETROCK® Brand Gypsum Liner Panels</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### GYPSUM WALLBOARD, STEEL STUDS

Base layer ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles to ONE SIDE ONLY of ⅛" steel studs 24" o.c. with 1" Type S drywall screws 12" o.c. Second layer ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles with two ⅛" Type S drywall screws per board. Third layer ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles with two ⅛" Type S drywall screws per board and one ⅛" Type S drywall screws placed midway between studs at floor and ceiling runners. Steel strips 0.020" x ⅛" wide vertically applied over third layer at vertical joints and intermediate studs with ⅛" Type S drywall screws 12" o.c. Fourth layer ⅛" type X gypsum wallboard or gypsum veneer base applied at right angles to steel strips with 1" Type S drywall screws 8" o.c.

Joints offset 24" between layers. (NLB)

**GENERIC**

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Limiting Height</th>
<th>Approx. Weight</th>
<th>Fire Test</th>
<th>Sound Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>4⅛&quot;</td>
<td>120&quot;</td>
<td>9.5 psf</td>
<td>GET, 4-13-70</td>
<td>KG 634, 4-1-73</td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
# Shaft Walls

## Solid Gypsum Wallboard

One layer ⅞" type X gypsum wallboard or gypsum veneer base applied parallel to each side of vertically erected 1" gypsum board panels (solid or laminated) with laminating compound combed over the entire contact surface. Panel supported by steel runners at top and bottom and horizontal bracing angles of No. 22 gage galvanized steel ¾" x 1⅛" spaced 50° o.c. or less on shaft side. (NLB)

†Limiting height shown is based on interior partition exposure conditions. Short wall exposure conditions may require reduction of limiting height.

| Thickness | 2½" |
| Limiting Height | 110°† |
| Approx. Weight | 9 psf |
| Fire Test | UL R1319-88, 74, 12-29-64, UL Design US505 |
| Sound Test | Estimated |

## Gypsum Wallboard, Steel C-T Studs

One layer 1" x 24" proprietary type X gypsum panels inserted between 21½" floor and ceiling J runners with T section of 2½" metal C-T studs between panels.

OPPOSITE SIDE: Base layer ½" proprietary type X gypsum wallboard applied at right angles to studs with 1" Type S drywall screws 24" o.c. and 3" from floor and ceiling runners. Face layer ½" proprietary type X gypsum wallboard applied parallel to studs with 1¾" Type S drywall screws 12" o.c. and 6" from floor and ceiling runners. (NLB)

### Proprietary Gypsum Board

| Lafarge North America Inc. |
| - 1½" Firecheck® Type C |
| - 1 1/2" Firecheck® Shaftliner |
| National Gypsum Company |
| - ⅝" Gold Bond® Brand FIRE-SHIELD™ Gypsum Wallboard |
| - 1" Gold Bond® Brand FIRE-SHIELD® Shaftliner |

| Thickness | 3½" |
| Approx. Weight | 9 psf |
| Fire Test | WHI 495-1198, 9-22-82; WHI 485-1224, 2-5-93; WHI 495-1404/1405/1408/1409, 5-15-98; ITS Design LGWA 120-01 |

## Gypsum Wallboard, Steel C-T Studs

One layer 1" x 24" proprietary type X gypsum panels inserted between 21½" floor and ceiling J runners with T section of 2½" steel C-T studs between panels. One layer ½" proprietary type X gypsum wallboard applied parallel to each side with 1" Type S drywall screws 12" o.c. and 6" from floor and ceiling runners.

Joists staggered 24" on opposite sides. (NLB)

### Proprietary Gypsum Board

| Lafarge North America Inc. |
| - 1½" Firecheck® Type C |
| - 1 1/2" Firecheck® Shaftliner |
| National Gypsum Company |
| - ⅝" Gold Bond® Brand FIRE-SHIELD™ Gypsum Wallboard |
| - 1" Gold Bond® Brand FIRE-SHIELD® Shaftliner |

| Thickness | 3½" |
| Approx. Weight | 9 psf |
| Fire Test | WHI 485-1201, 9-24-92; WHI 485-1223, 2-3-93; WHI 495-1406/1407/1410/1411, 5-22-98; ITS Design LGWA 120-02 |

*Contact the manufacturer for more detailed information on proprietary products.*
**Shaft Walls**

**GA File No. WP 7254**

**Gypsum Wallboard, Steel L Studs**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2 1/4" floor and ceiling J runners with tab-flange section of 2 1/4" steel L studs between panels.

OPPOSITE SIDE: Base layer 1/4" proprietary type X gypsum wallboard applied at right angles to studs with 1" Type S drywall screws 24" o.c. Face layer 1/2" proprietary type X gypsum wallboard applied parallel to studs with 1 1/2" Type S drywall screws 12" o.c. (NLB)

**Proprietary Gypsum Board**

- American Gypsum Company - 1/4" FireBlock® Type C
- - 1/2" TG-C
- Temple-Inland Forest Products Corporation - 1" Silent Guard® Gypsum Liner Board

Thickness: 3 1/2"
Approx. Weight: 9 psf
Fire Test: UL R14196, 04NK4991, 2-10-04
UL Design V453 - System A

**GA File No. WP 7255**

**Gypsum Wallboard, Steel L Studs**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2 1/4" floor and ceiling J runners with tab-flange section of 2 1/4" steel L studs between panels. One layer 1/2" proprietary type X gypsum wallboard applied parallel to each side with 1" Type S drywall screws 12" o.c. (NLB)

**Proprietary Gypsum Board**

- American Gypsum Company - 1/2" FireBlock® Type C
- - 1/2" TG-C
- Temple-Inland Forest Products Corporation - 1" Silent Guard® Gypsum Liner Board

Thickness: 3 1/2"
Approx. Weight: 9 psf
Fire Test: UL R14196, 04NK4991, 2-10-04
UL Design V453 - System B

**GA File No. WP 7451**

**Gypsum Wallboard, Metal C-T Studs**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2 1/4" floor and ceiling J runners with T section of 2 1/4" steel C-T studs between panels.

OPPOSITE SIDE: Base layer 5/8" proprietary type X gypsum wallboard applied at right angles to studs with 1 1/4" Type S drywall screws 24" o.c. Second layer 5/8" proprietary type X gypsum wallboard applied at right angles to studs with 1 1/4" Type S drywall screws 15" o.c. at studs and 1 1/2" Type G drywall screws 12" o.c. placed 2" back on either side of vertical joints. Face layer 5/8" proprietary type X gypsum wallboard applied parallel to studs with 1 1/4" Type S drywall screws 12" o.c. at studs and 1 1/2" Type G drywall screws 12" o.c. placed 2" back on either side of horizontal joints.

Sound test with 1" glass fiber insulation friction fit in stud space. (NLB)

**Proprietary Gypsum Board**

- G-P Gypsum - 5/8" ToughRock® Fireguard® C
- - 1" ToughRock® Fireguard® Shaftliner

Thickness: 4 1/4"
Approx. Weight: 12 psf
Fire Test: WH-495-1195, 6-26-92
ITS Design DG/8A 180-01
Sound Test: See WP 7086 (RAL TL83-379, 11-7-89)

*Contact the manufacturer for more detailed information on proprietary products.*
**SHAFT WALLS**

**GA FILE NO. WP 7452**

**GYPSUM WALLBOARD, METAL C-T STUDS**

One layer 1" x 24" proprietary type X gypsum panels inserted between 2½" floor and ceiling J runners with T section of 2½" steel C-T studs between panels.

OPPOSITE SIDE: Base layer 5/8" proprietary type X gypsum wallboard applied at right angles to studs with 1" Type S drywall screws 24" o.c. Second layer 5/8" proprietary type X gypsum wallboard applied at right angles to studs with 1 5/8" Type S drywall screws 16" o.c. at studs and 1 1/4" Type G drywall screws 16" o.c. placed 2" back on either side of vertical joints. Face layer 5/8" proprietary type X gypsum wallboard applied parallel to studs with 2½" Type S drywall screws 12" o.c. at studs and 1 1/2" Type G drywall screws 12" o.c. placed 2" back on either side of horizontal joints.

Sound tested with 1" glass fiber insulation friction fit in stud space. (NLB)

**PROPRIETARY GYPSUM PANEL PRODUCTS**

| G-P Gypsum | - 5/8" ToughRock® Fireguard® C |
| - 1" DenseGlass® Ultra Shladier™ |

**GA FILE NO. WP 7491**

**GYPSUM WALLBOARD, FURRING CHANNELS, STEEL C-H STUDS**

One layer 1" x 24" proprietary type X gypsum liner panels inserted between 2½" floor and ceiling runners with H section of 2½" proprietary verted C-H steel studs between panels. When wall height exceeds liner panel length, liner panels are butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing.

OPPOSITE SIDE: First layer 5/8" proprietary type X gypsum wallboard applied parallel or at right angles to studs with 1" Type S drywall screws spaced 24" o.c. when applied parallel to studs or 16" o.c. when applied at right angles to studs. Second layer 5/8" proprietary type X gypsum wallboard applied parallel or at right angles to studs with 1 5/8" Type S drywall screws spaced 24" o.c. when applied parallel to studs or 16" o.c. when applied at right angles to studs. Face layer 5/8" proprietary type X gypsum wallboard applied parallel or at right angles to studs with 2½" Type S drywall screws spaced 16" o.c. when applied parallel to studs or 12" o.c. when applied at right angles to studs. Screws offset 6" from screws in layer below. Horizontal joints in adjacent layers offset not less than 12". Horizontal joints need not be backed by steel framing. Vertical joints centered over studs and offset 24" between adjacent layers. (NLB)

**PROPRIETARY GYPSUM BOARD**

United States Gypsum Company - 5/8" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels
- 1" SHEETROCK® Brand Gypsum Liner Panels

**3 HOUR FIRE**

**45 TO 49 STC SOUND**

| Thickness: 4½" |
| Approx. Weight: 12 psf |
| Fire Test: ITS, 9-30-01, ITS Design CP/WA 180-01 |
| Sound Test: See WP 7096 (RAL TL69-379, 11-7-89) |

*Contact the manufacturer for more detailed information on proprietary products.*
SHAFT WALLS

GA FILE NO. WP 7690

GYPSUM WALLBOARD, FURRING CHANNELS,
STEEL C-H STUDS

One layer 1\texttimes 24" proprietary type X gypsum liner panels inserted between 2\texttimes 8" floor and ceiling runners with H section of 2\texttimes 6" proprietary vented C-H steel studs between panels. When wall height exceeds liner panel length, liner panels are butted to extend to the full height of the wall. Horizontal joints need not be backed by steel framing.

OPPOSITE SIDE: First layer 1/2" proprietary type X gypsum wallboard applied parallel or at right angles to studs with 1\texttimes 12" Type S drywall screws 24" o.c. Second layer 1/2" proprietary type X gypsum wallboard applied parallel or at right angles to studs with 1\texttimes 12" Type S drywall screws 12" o.c. Horizontal joints need not be backed by steel framing. When second layer is applied parallel to studs, vertical joints shall be centered over studs and offset not less than 12" from base layer joints; otherwise all joints shall be offset not less than 12". Rigid furring channels 24" o.c. applied at right angles to studs with 2" Type S-12 pan head screws. Screws alternate from top flange to bottom flange at each stud intersection. Third layer 1/2" proprietary type X gypsum wallboard applied at right angles to channels with 1\texttimes 12" Type S drywall screws 12" o.c. Face layer 1/2" proprietary type X gypsum wallboard applied parallel or at right angles to channels with 2\texttimes 12" Type S drywall screws 12" o.c. Joints offset 24" from third layer joints. When face layer is applied parallel to studs, vertical joints shall be centered over studs and offset not less than 24" from base layer joint; otherwise all joints shall be offset not less than 12" (NLB).

PROPRIETARY GYPSUM BOARD

United States Gypsum Company
- 3/4" SHEETROCK® Brand ULTRACODE®
  Core Gypsum Panels
- 1" SHEETROCK® Brand Gypsum Liner Panels

GA FILE NO. WP 7691

GYPSUM WALLBOARD, FURRING CHANNELS,
STEEL C-H, C-T, OR I STUDS

One layer 1\texttimes 24" proprietary type X gypsum panels inserted between 4" floor and ceiling runners with tab-flange section of 4" steel C-H, C-T, or I studs between panels.

OPPOSITE SIDE: First layer 3/4" proprietary type X gypsum wallboard applied parallel to studs with 1\texttimes 12" Type S drywall screws 12" o.c. Second layer 3/4" proprietary type X gypsum wallboard applied parallel to studs with 1\texttimes 12" Type S drywall screws 12" o.c. and to the first layer with 1\texttimes 12" Type G drywall screws 8" o.c. on both sides of horizontal joints. Third layer 3/4" proprietary type X gypsum wallboard applied parallel to studs with 2\texttimes 12" Type S drywall screws 12" o.c. and to the second layer with 1\texttimes 12" Type G drywall screws 12" o.c. vertically and centered between the studs, and spaced 8" o.c. on both sides of horizontal joints. Rigid furring channels spaced 16" o.c. applied at right angles to studs with 2\texttimes 12" Type S drywall screws alternating top flange to bottom flange at each stud intersection. Fourth layer 1\texttimes 4" proprietary type X gypsum wallboard applied at right angles to channels with 1\texttimes 12" Type S drywall screws 12" o.c. in the field of the board and 8" o.c. on either side of horizontal joints centered on the channels. Face layer 1\texttimes 4" proprietary type X gypsum wallboard applied at right angles to channels with 1\texttimes 12" Type S drywall screws 12" o.c. in the field of the board and 8" o.c. on either side of horizontal joints centered on the channels, and in the fourth layer with 1\texttimes 12" Type G drywall screws 10" o.c. along the vertical joints and centered between the furring channels. Vertical joints and horizontal butt joints offset 24" between layers. (NLB)

PROPRIETARY GYPSUM BOARD

National Gypsum Company
- 1/2" Gold Bond® Brand FIRE-SHIELD C™
  Gypsum Wallboard
- 1" Gold Bond® Brand FIRE-SHIELD®
  Shaft Liner

*Contact the manufacturer for more detailed information on proprietary products.*
### EXTERIOR WALLS

#### GA FILE NO. WP 8802

**Proprietary**

**1 Hour Fire**

**Gypsum Wallboard, Mineral Fiber Insulation, Cementitious Backer Units, Steel Studs**

**Exterior Side:** One layer ⅝" proprietary cementitious backer units applied parallel to 3½" 20 gauge steel studs 16" o.c. with 1" corrosion resistant Type 5-12 washer head screws 6" o.c. A weather resistant barrier must be installed behind the cementitious backer unit. 3" mineral fiber friction fit in stud space.

**Interior Side:** One layer ¾" proprietary Type X gypsum wallboard or gypsum veneer base applied parallel to studs with 1" Type S-12 drywall screws 6" o.c. at vertical joints and floor and ceiling runners and 12" o.c. at intermediate studs. Joints taped, ⅛" of gypsum veneer plaster when gypsum veneer base is used. Lateral support for framing members as required. (LOAD-BEARING)

**Proprietary Gypsum Board**

United States Gypsum Company
- ⅝" SHEETROCK® Brand FIRECODE® Core Gypsum Panels

**Specifications:**
- **Thickness:** ⅝"
- **Approx. Weight:** 7 psf
- **Fire Test:** UL R12262, 96NK4276, 5-1-96, UL Design U404

#### GA FILE NO. WP 8804

**Proprietary**

**1 Hour Fire**

**Gypsum Wallboard, Steel Studs, Mineral Fiber Insulation, Fiber-Cement Board**

**Exterior Side:** One layer ¾" proprietary fiber-cement board applied parallel to 3½" steel studs 16" o.c. with 1" No.8-18 x 0.123" head diameter ribbed bugle head screws 6" o.c. 3½" mineral fiber insulation batts or blankets, 3.0 psf, in stud space.

**Interior Side:** One layer ¾" proprietary Type X gypsum wallboard applied parallel to studs with 1" Type S drywall screws 6" o.c. at edges and 12" o.c. at intermediate framing. (NLB)

**Proprietary Gypsum Board**

BPB America Inc.
- ⅝" Fre/Red® Type X Gypsum Panels

**Specifications:**
- **Thickness:** ⅝"
- **Approx. Weight:** 7.5 psf
- **Fire Test:** CPL 11710-62783, 2-13-92

#### GA FILE NO. WP 8805

**Proprietary**

**1 Hour Fire**

**Gypsum Wallboard, Glass Mat Gypsum Substrate, Steel Studs**

**Exterior Side:** One layer ¾" proprietary Type X glass mat gypsum substrate (sheeting) applied parallel or at right angles to 3½" steel studs 24" o.c. with 1" Type S corrosion resistant screws 6" o.c. at vertical studs and 12" o.c. at perimeter runners. Joints caulked with flexible, non-hardening building sealant or covered with weather exposed cladding or finish system.

**Interior Side:** One layer ¾" proprietary Type X glass mat gypsum substrate, glass mat water-resistant gypsum backing board, gypsum wallboard, water-resistant gypsum backing board, or gypsum veneer base applied parallel or at right angles to studs with 1" Type S drywall screws 6" o.c. at studs and 12" o.c. at floor and ceiling runners. (NLB)

**Proprietary Gypsum Panel Product**

G-P Gypsum
- ⅝" DensGlass Cold® Fireguard®

**Specifications:**
- **Thickness:** ⅝"
- **Approx. Weight:** 6 psf
- **Fire Test:** CTC 2171-3996, 7-12-90

*Contact the manufacturer for more detailed information on proprietary products.*
### Exterior Walls

**Gypsum Wallboard, Glass Mat Gypsum Substrate, Steel Studs, Mineral or Glass Fiber Insulation**

**Exterior Side:** One layer 1/4" proprietary type X glass mat gypsum substrate (sheathing) applied parallel to 1/2" 20 gage steel studs 24" o.c. with 1" Type S-12, self-drilling, corrosion resistant, bugle head, drywall screws 12" o.c. Studs attached to both vertical legs of floor and ceiling runners either by welding or with 1/2" Type S-12 pan head screws. Mineral or glass fiber insulation friction fit into the stud space. Exterior cladding to be attached through glass mat gypsum panel to studs.

**Interior Side:** One layer 1/4" proprietary type X gypsum board applied parallel to studs with 1" Type S-12 drywall screws 12" o.c.

**Bracing:** Lateral bracing spaced not over 40" o.c. shall be 1" by 18 gage steel strap attached to each side or channel bracing attached to each stud with a clip angle. For studs with holes or punch-outs in the web the "Q" factor shall be determined by means of stub column tests. Tested at 100 percent of design load. (LOAD-BEARING)

**Proprietary Gypsum Panel Products**

- BPG America Inc.
  - 2/3" ProRock® Type X Gypsum Panels
  - 2/3" GlasRock® Sheathing Type X
- BPG Canada Inc.
  - 2/3" ProRock® Type X Gypsum Panels
- G-P Gypsum
  - 2/3" ToughRock® Fireguard®
  - 2/3" DensGlass Gold® Fireguard®

---

**GA File No. WP 8105**

**Gypsum Wallboard, Gypsum Sheathing, Wood Studs**

**Exterior Side:** One layer 48" wide 3/8" type X gypsum sheathing applied parallel to 2 x 4 wood studs 24" o.c. with 1/2" galvanized roofing nails 4" o.c. at vertical joints and 7" o.c. at intermediate studs and top and bottom plates. Joints of gypsum sheathing may be left untreated. Exterior cladding to be attached through sheathing to studs.

**Interior Side:** One layer 5/8" type X gypsum wallboard, water-resistant gypsum backing board, or gypsum veneer base applied parallel or at right angles to studs with 6d coated nails, 1/2" long, 0.0915" shank, 1/2" heads, 7" o.c. (LOAD-BEARING)

**Generic**

**Thickness:** Varies

**Approx. Weight:** 7 psf

**Fire Test:** See WP 3510
- UL R3510-47, 4-8, 9-17-65,
- UL Design U399,
- UL R1319-129, 7-22-70,
- UL Design U314

---

*Contact the manufacturer for more detailed information on proprietary products.*
## Exterior Walls

### Gypsum Wallboard, Gypsum Sheathing, Fiber-Cement Siding, Wood Studs

**Exterior Side:** Base layer 5/8" proprietary type X gypsum sheathing applied parallel to 2 x 4 wood studs 16" o.c. with 1¼" galvanized roofing nails 4" o.c. at vertical joints and 7" o.c. at intermediate studs and top and bottom plates. Joints of gypsum sheathing may be left untreated. Face layer ¼" proprietary fiber-cement siding fastened through sheathing to studs. 3¼" unfractured glass fiber friction fit in stud space.

**Interior Side:** One layer ¾" proprietary type X gypsum wallboard, water-resistant gypsum backing board, or gypsum veneer base applied parallel or at right angles to studs with 6d coated nails, 1½" long, 0.0915" shank, 1½" heads, 7" o.c. (Load-bearing)

### Proprietary Gypsum Panel Products

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
<th>Thickness</th>
<th>Approx. Weight</th>
<th>Fire Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPB America</td>
<td>5/8&quot; ProRoc® Type X Gypsum Panels</td>
<td>5/8&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5/8&quot; ProRoc® Sheathing Type X Gypsum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G-P Gypsum</td>
<td>5/8&quot; DensArmor® Plus Interior Guard</td>
<td>5/8&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lafarge North America Inc.</td>
<td>5/8&quot; Fireguard®</td>
<td>5/8&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5/8&quot; Fireblock® Type X</td>
<td>5/8&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Gypsum Company</td>
<td>5/8&quot; Gold Bond® Brand FIRE-SHIELD®</td>
<td>5/8&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gypsum Wallboard</td>
<td>5/8&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5/8&quot; Gold Bond® Brand FIRE-SHIELD®</td>
<td>5/8&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PABCO Gypsum</td>
<td>5/8&quot; FLAME CURB® Type X</td>
<td>5/8&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td>5/8&quot; Type X</td>
<td>5/8&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5/8&quot; Type X Sheathing</td>
<td>5/8&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Gypsum Wallboard, Glass Mat Gypsum Substrate, Resilient Channels, Mineral or Glass Fiber Insulation, Wood Studs

**Exterior Side:** One layer 9/16" proprietary type X glass mat gypsum substrate (sheathing) applied parallel or at right angles to 2 x 4 wood studs 16" o.c. with 1½" galvanized nails 7" o.c. 3" mineral or glass fiber insulation in stud space. Exterior cladding to be attached through glass mat gypsum substrate to studs.

**Interior Side:** Resilient channels 24" o.c. attached at right angles to studs with one 1¼" Type W drywall screw at each stud. One layer 9/16" proprietary type X gypsum board applied at right angles to channels with Type S or S-12 drywall screws 8" o.c.

Joints staggered on opposite sides. (Load-bearing)

### Proprietary Gypsum Panel Products

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPB America Inc.</td>
<td>9/16&quot; ProRoc® Type X Gypsum Panels</td>
</tr>
<tr>
<td>BPB Canada Inc.</td>
<td>9/16&quot; GlassRock® Sheathing Type X</td>
</tr>
</tbody>
</table>

### Gypsum Wallboard, Steel Studs, Polymer Modified Exterior Insulation & Finish System

**Exterior Side:** One layer 9/16" type X gypsum sheathing applied parallel to 3½" 18 gauge steel studs 16" o.c. with #6 x 1¼" self-drilling, corrosion resistant, bugle head, drywall screws 8" o.c. at edges and ends and 12" o.c. at intermediate studs. Polymer modified exterior insulation & finish system applied over sheathing. 2" maximum foam plastic thickness.

**Interior Side:** One layer 9/16" type X gypsum wallboard applied parallel to studs with #6 x 1¼" self-drilling, bugle head, drywall screws 8" o.c. at edges and ends and 12" o.c. at intermediate studs. (NLB)

*Contact the manufacturer for more detailed information on proprietary products.*
**EXTERIOR WALLS**

**GA FILE NO. WP 8123**

**GENERIC**

**GYPSUM WALLBOARD, STEEL STUDS,**
**POLYMER BASED EXTERIOR INSULATION & FINISH SYSTEM**

**EXTERIOR SIDE:** One layer ⅛" type X gypsum sheathing applied parallel to 3⅛" 18 gage steel studs 24" o.c. with ⅛"x1⅛" self-drilling, corrosion resistant, bugle head, drywall screws 8" o.c. at edges and ends and 12" o.c. at intermediate studs. Polymer based exterior insulation & finish system applied over sheathing. 4" maximum foam plastic thickness.

**INTERIOR SIDE:** One layer ⅛" type X gypsum wallboard applied parallel to studs with ⅛"x1⅛" self-drilling, bugle head, drywall screws 8" o.c. at edges and ends and 12" o.c. at intermediate studs. (NLB)

- **Thickness:** 5⅛" - 9" Varies
- **Approx. Weight:** 7 psf
- **Fire Test:** SWRI 01-4409-001(c), 1-24-82

---

**GA FILE NO. WP 8126**

**PROPRIETARY**

**GYPSUM WALLBOARD, FOAM PLASTIC BOARDS,**
**WOOD STUDS, EXTERIOR CLADDING**

**EXTERIOR SIDE:** Base layer ⅛" proprietary type X gypsum sheathing applied parallel or at right angles to 2 x 4 wood studs 16" o.c. with 6d cement-coated or common nails or ⅛" Type W drywall screws 7" o.c. Second layer maximum ⅛" proprietary faced polystyrene foam plastic sheathing applied parallel to studs with 3" galvanized roofing nails 8" o.c. at perimeter and 12" o.c. at intermediate studs. Face layer exterior siding, fiber-cement siding, masonry veneer, stucco, or exterior insulation and finish system (EIFS).

**INTERIOR SIDE:** ⅛" proprietary type X gypsum wallboard applied at right angles to studs with 6d cement-coated or common nails or ⅛" Type W drywall screws 7" o.c. Unfaced 3⅛" glass fiber, 0.72 psf, friction-fit in stud space. (LOAD-BEARING)

**PROPRIETARY GYPSUM BOARD**

- **American Gypsum Company**
  - ⅛" FireBlock® Type X
- **BPB America Inc.**
  - ⅛" Exterior Sheathing Type X
  - ⅛" ProRock® Sheathing Type X
  - Gypsum Panels
- **Lafarge North America Inc.**
  - ⅛" ProRock® Type X Gypsum Panels
  - ⅛" Firecheck® Sheathing Type X
  - Gypsum Sheathing
- **Temple-Inland Forest Products Corporation**
  - ⅛" Firecheck® Type X
  - ⅛" Type X Sheathing
- **National Gypsum Company**
  - ⅛" Gold Bond® Brand FIRE-SHIELD® Gypsum Sheathing
  - ⅛" Gold Bond® Brand FIRE-SHIELD® Gypsum Wallboard

- **Thickness:** Varies
- **Approx. Weight:** 6 psf
- **Fire Test:** UL 2637, 94NK19440, 6-28-86, UL Design U354

---

*Contact the manufacturer for more detailed information on proprietary products.*
### EXTERIOR WALLS

#### GA FILE NO. WP 8130

**GYPSON WALLBOARD, CLASS MAT GYPSON SUBSTRATE, WOOD STUDS**

**EXTERIOR SIDE:** One layer 5/8" proprietary type X glass mat gypsum substrate (sheathing) applied parallel or at right angles to 2 x 4 to 3 wood studs 16" o.c. with galvanized roofing nails, 1/4" long, 0.128" shank, 1/4" head, 7" o.c. Exterior surface covered with weather exposed cladding or finish system.

**INTERIOR SIDE:** One layer 5/8" proprietary type X glass mat gypsum substrate, glass mat water-resistant gypsum backing board, gypsum wallboard, water-resistant gypsum backing board, or gypsum veneer base applied parallel or at right angles to studs with 6d coated nails, 17/8" long, 0.0915" shank, 1/4" heads, 7" o.c. Joints staggered on opposite sides. (LOAD-BEARING)

**Thickness:** 4¾"

**Approx. Weight:** 7½ psf

**Fire Test:** WHI-495-0702, 8-7-85; WHI-495-0703, 8-6-85; UL R2717, 89N3419, 8-29-89

**Load-Bearing**

**PROPRIETARY GYPSUM PANEL PRODUCTS**

<table>
<thead>
<tr>
<th>American Gypsum Company</th>
<th>5/8&quot; FireBloc® Type X</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-P Gypsum</td>
<td>5/8&quot; DensGlass Gold® Fireguard®</td>
</tr>
<tr>
<td>Lafarge North America Inc.</td>
<td>5/8&quot; Firecheck® Type X</td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td>5/8&quot; Type X</td>
</tr>
</tbody>
</table>

#### GA FILE NO. WP 8131

**GYPSON WALLBOARD, WOOD STUDS, MINERAL FIBER INSULATION, WOOD STRUCTURAL PANELS, CEMENTOUS BACKER UNITS**

**EXTERIOR SIDE:** Base layer 1/4" wood structural panels applied parallel to 2 x 4 wood studs 16" o.c. with 10d galvanized nails 6" o.c. at edges and at top and bottom plates and 12" o.c. at intermediate studs. Weather resistant barrier applied over panels. Face layer 1/4" proprietary cementitious backer units applied parallel or at right angles to studs with 17/8" long corrosion resistant screws 8" o.c.

**INTERIOR SIDE:** One layer 5/8" proprietary type X gypsum wallboard applied parallel or at right angles to studs with either 6d cement coated nails, 17/8" long 7" o.c. or 17/8" long Type S or Type W drywall screws 8" o.c. 3" mineral fiber insulation, 5.0 psf, friction fit in stud space. (LOAD-BEARING)

**Thickness:** 6¼"

**Approx. Weight:** 14 psf

**Fire Test:** UL R1319, 97N14997, 4-25-97

**Load-Bearing**

**PROPRIETARY GYPSUM BOARD**

| United States Gypsum Company | 5/8" SHEETROCK® Brand FIRECODE® Core Gypsum Panels |

#### GA FILE NO. WP 8132

**GYPSON WALLBOARD, CLASS MAT GYPSON SUBSTRATE, WOOD STUDS**

**EXTERIOR SIDE:** One layer 5/8" proprietary type X glass mat gypsum substrate (sheathing) applied parallel or at right angles to 2 x 4 wood studs 16" o.c. with galvanized roofing nails, 17/8" long, 0.128" shank, 1/4" head, 7" o.c. Exterior surface covered with weather exposed cladding or finish system.

**INTERIOR SIDE:** One layer 5/8" proprietary type X glass mat gypsum substrate, glass mat water-resistant gypsum backing board, gypsum wallboard, water-resistant gypsum backing board, or gypsum veneer base applied parallel or at right angles to studs with 6d coated nails, 17/8" long, 0.0915" shank, 1/4" heads, 7" o.c. Joints staggered on opposite sides. (LOAD-BEARING)

**Thickness:** 4¾"

**Approx. Weight:** 7½ psf

**Fire Test:** WHI-495-0702, 8-7-85; WHI-495-0703, 8-6-85; UL R2717, 89N3419, 8-29-89

**Load-Bearing**

**PROPRIETARY GYPSUM PANEL PRODUCT**

| G-P Gypsum | 5/8" DensArmor® Plus Fireguard® Interior Guard |

*Contact the manufacturer for more detailed information on proprietary products.*
EXTERIOR WALLS

GA FILE NO. WP 8202
GYPSCUM WALLBOARD, STEEL STUDS,
POLYMER BASED EXTERIOR INSULATION & FINISH SYSTEM

EXTERIOR SIDE: Base layer 5/8" type X gypsum sheathing applied parallel to 3 1/4" 18 gage steel studs 16" o.c. with #8x1 1/4" self-drilling, corrosion resistant, bugle head, drywall screws 24" o.c. Face layer 5/8" type X gypsum sheathing applied parallel to studs with #8x1 1/4" self-drilling, corrosion resistant, bugle head, drywall screws 8" o.c. at edges and ends and 12" o.c. at intermediate studs. Polymer based exterior insulation & finish system applied over sheathing. 4" maximum foam plastic thickness.

INTERIOR SIDE: Base layer 5/8" type X gypsum wallboard applied parallel to studs with #8x1/2" self-drilling, bugle head, drywall screws 24" o.c. Face layer 5/8" type X gypsum wallboard applied parallel to studs with #6x1/4" self-drilling, bugle head, drywall screws 8" o.c. at edges and ends and 12" o.c. at intermediate studs.

Joints staggered on each layer and side. (NLB)

Thickness: 7" - 10 1/4" Varies
Approx. Weight: 12 psf
Fire Test: SWRI 01-4409-001(e), 4-27-92

---

GA FILE NO. WP 8203
GYPSCUM WALLBOARD, GLASS MAT GYPSCUM SUBSTRATE,
STEEL STUDS, MINERAL OR GLASS FIBER INSULATION

EXTERIOR SIDE: Base layer 5/8" proprietary type X glass mat gypsum substrate (sheathing) applied parallel to 3 1/4" 20 gage steel studs 24" o.c. with 1" Type S-12, self-drilling, corrosion resistant, bugle head, drywall screws 12" o.c. Studs attached to each side of floor and ceiling runners by welding or with 1/2" Type S-12 pan head screws. Face layer 5/8" proprietary type X glass mat gypsum substrate (sheathing) applied parallel to studs with 1/4" Type S-12, self-drilling, corrosion resistant, bugle head, drywall screws 12" o.c. Mineral or glass fiber insulation friction fit into the stud space. Exterior cladding to be attached through glass mat gypsum panel to studs.

INTERIOR SIDE: Base layer 5/8" proprietary type X gypsum board applied parallel to studs with 1" Type S-12 drywall screws 12" o.c. Face layer 5/8" proprietary type X gypsum board applied parallel to studs with 1/4" Type S-12 drywall screws 12" o.c.

Joints staggered 24" each layer and side.

Bracing: Lateral bracing spaced not over 40" o.c. shall be 1" by 18 gage steel straps attached to each side or channel bracing attached to each stud with a clip angle. For studs with holes or punch-cuts in the web the "Q" factor shall be determined by means of stub column tests. Tasted at 80 percent of design load. (LOAD-BEARING)

PROPRIETARY GYPSUM PANEL PRODUCTS

- PB America Inc. 5/8" ProRock® Type X Gypsum Panels
- 5/8" GlasRock® Sheathing Type X
- PB Canada Inc. 5/8" ProRock® Type X Gypsum Panels
- 5/8" ToughRock® Fireguard®
- O-P Gypsum 5/8" DensGlass Gold® Fireguard®

---

*Contact the manufacturer for more detailed information on proprietary products.*
### EXTERIOR WALLS

**GA FILE NO. WP 8205**

**PROPRIETARY***

**2 HOUR FIRE**

**GYPSUM WALLBOARD, MINERAL FIBER INSULATION, CEMENTITEOUS BACKER UNIT, METAL STUD**

**EXTERIOR SIDE:** Base layer ¼" proprietary type X gypsum sheathing applied parallel to 3½" 20 gauge steel studs 16" o.c. with 1" Type S-12 drywall screws 24" o.c. Face layer ½" proprietary type X gypsum sheathing applied parallel to framing with 1½" Type S-12 drywall screws 12" o.c. or ½" proprietary cementitious backer unit applied parallel or at right angles to framing with 1½" Type S-12 washer head screws 8" o.c.

**INTERIOR SIDE:** Base layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied parallel to framing with 1" Type S-12 drywall screws 24" o.c. Face layer ½" proprietary cementitious backer unit applied parallel or at right angles to framing with 1½" Type S-12 washer head screws 8" o.c. Joints finished, 3" mineral fiber friction fit in stud space.

Joints staggered each layer and side. Weather resistant barrier must be installed behind the cementitious backer unit on the exterior side. (NLB)

**PROPRIETARY GYPSUM BOARD**

<table>
<thead>
<tr>
<th>Company</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lafarge North America Inc.</td>
<td>¾&quot; Firecheck® Type C</td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td>5½&quot; Sheathing Type TG-C</td>
</tr>
<tr>
<td>United States Gypsum Company</td>
<td>½&quot; Type Tg-C</td>
</tr>
<tr>
<td></td>
<td>½&quot; SHEETROCK® Brand FIRECODE® C</td>
</tr>
<tr>
<td></td>
<td>Core Gypsum Sheathing</td>
</tr>
<tr>
<td></td>
<td>½&quot; SHEETROCK® Brand FIRECODE® C</td>
</tr>
<tr>
<td></td>
<td>Core Gypsum Panels</td>
</tr>
</tbody>
</table>

**GA FILE NO. WP 8250**

**PROPRIETARY***

**2 HOUR FIRE**

**GYPSUM WALLBOARD, STEEL STUDS, GYPSUM SHEATHING, METAL LATH, CEMENT-LIME STUCCO, MINERAL FIBER INSULATION**

**EXTERIOR SIDE:** One layer ½" gypsum sheathing applied at right angles to 3½" 20 gauge steel studs 16" o.c. Self-furring metal lath, 3.4 lb, attached through sheathing to studs with 1½" Type S-12 drywall screws 8" o.c. 1" portland cement-lime stucco applied over lath.

**INTERIOR SIDE:** One layer ½" foil backed proprietary type X gypsum wallboard or gypsum veneer base applied parallel to studs with 1½" Type S-12 drywall screws 6" o.c. 3" mineral fiber insulation, 2.0 pcf, in stud space. (NLB)

**PROPRIETARY GYPSUM BOARD**

<table>
<thead>
<tr>
<th>Company</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States Gypsum Company</td>
<td>¾&quot; SHEETROCK® Brand FIRECODE® C</td>
</tr>
<tr>
<td></td>
<td>Core Foil-Back Gypsum Panels</td>
</tr>
</tbody>
</table>

**GA FILE NO. WP 8325**

**GENERIC***

**2 HOUR FIRE**

**GYPSUM WALLBOARD, STEEL STUDS, METAL LATH, PERLITE-CEMENT LIME PLASTER**

**EXTERIOR SIDE:** 1½" x 17 gauge galvanized woven wire self-furring paper backed lath attached to 3½" 20 gauge steel studs 16" o.c. with ½" Type S-12 pan head screws 6" o.c. 1" 6:1:1 perlite-Portland cement-lime plaster applied over lath.

**INTERIOR SIDE:** One layer ¼" type X gypsum wallboard or gypsum veneer base applied parallel to studs with 1½" Type S-12 drywall screws 12" o.c. 3½" 6:1:1 perlite-Portland cement-lime back plaster spray applied in stud space.

Achieved 4 hours when tested from cement side. (NLB)

**Thickness:** 5½"  
**Approx. Weight:** 14 psf  
**Fire Test:** OSU 5845, 5-7-75

*Contact the manufacturer for more detailed information on proprietary products.*
## Exterior Walls

### GA File No. WP 8410

**Generic**

**Exterior Side:** Base layer 1/2" gypsum sheathing applied parallel or at right angles to 2 x 4 wood studs 16" o.c. with 1 3/4" galvanized roofing nails, 0.125" shank, 7/16" heads, 6" o.c. Face layer 2" x 4" x 8" clay brick with 1" air space between brick and exterior sheathing. No. 20 gauge galvanized wire ties attached to each stud with 8d coated nails, 2" long, 0.113" shank, 3/16" head, at every 6th course of bricks.

**Interior Side:** Base layer 1/4" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to studs with 8d coated nails, 2½" long, 0.113" shank, ½" head, 8" o.c. Face layer 1/2" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to studs with 8d coated nails, 2½" long, 0.113" shank, ½" head, 8" o.c. (LOAD-BEARING)

**Thickness:** 10 1/4"

**Fire Test:**
- UL 1505-1, 2, 4-22-65,
- UL Design U302
- ULC Design U302

### GA File No. WP 8415

**General**

**Exterior Side:** Base layer 1/4" type X gypsum sheathing applied parallel or at right angles to 2 x 4 wood studs 24" o.c. with 8d coated nails, 7/16" long, 0.085" shank, 1/8" head, 24" o.c. Face layer 1/8" type X gypsum sheathing applied parallel or at right angles to studs with 8d coated nails, 2½" long, 0.100" shank, 1/8" head, 8" o.c. Exterior cladding attached through sheathing to studs.

**Interior Side:** Base layer 1/4" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to studs with 8d coated nails, 1½" long, 0.085" shank, 1/8" head, 24" o.c. Face layer 1/8" type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to studs with 8d coated nails, 2½" long, 0.100" shank, 1/8" head, 8" o.c.

Joints staggered 24" each layer and side. (LOAD-BEARING)

**Thickness:** 5 1/8" without exterior cladding

**Fire Test:**
- See WP 4135
- (FM WP 368, 9-27-74)

### GA File No. WP 8416

**Proprietary**

**Exterior Side:** Base layer 5/8" proprietary type X glass mat gypsum substrate (sheathing) applied parallel or at right angles to 2 x 4 wood studs 15" o.c. with 7/16", 0.0915" shank, 1/4" head, galvanized roofing nails 6" o.c. Face layer 5/8" proprietary type X glass mat gypsum substrate (sheathing) applied parallel or at right angles to studs to with 2½", 0.113" shank, ½" head, galvanized roofing nails 8" o.c. Exterior cladding to be attached through glass mat gypsum panel to studs.

**Interior Side:** Base layer 5/8" proprietary type X gypsum board applied parallel or at right angles to studs with 1½", 0.0915" shank, 1/4" head 6" o.c. Face layer 5/8" proprietary type X gypsum board applied parallel or at right angles to studs with 2½", 0.113" shank, ½" head nails 8" o.c.

Joints staggered 16" each layer and side. (LOAD-BEARING)

**Thickness:** 6 1/4"

**Approx. Weight:** 12 psf

**Fire Test:**
- Based on UL R366/UL 16137, 2-4-02,
- UL Design U301

**Proprietary Gypsum Panel Products**

- BPB America Inc. - 5/8" Proflo® Type X Gypsum Panels
- 5/8" Glass/Rock® Sheathing Type X
- 5/8" Proflo® Type X Gypsum Panels

*Contact the manufacturer for more detailed information on proprietary products.*
EXTERIOR WALLS

GA FILE NO. WP 8417

GYPSUM WALLBOARD, WOOD STUDS, GYPSUM SHEATHING, CEMENT STUCCO

EXTERIOR SIDE: Base layer 5/8" proprietary type X gypsum sheathing applied parallel or at right angles to 2 x 4 wood studs 16" o.c. with 1¾", 0.125" shank, #6" head galvanized roofing nails 3" o.c. or 2" Type S drywall screws 2" o.c. Pre-furred wire stucco netting applied over gypsum sheathing with 1¼" x 1" steel staples 7" o.c. Portland cement stucco, 3/4", applied over stucco netting.

INTERIOR SIDE: Base layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to studs with 1¾" Type S drywall screws 12" o.c. Face layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to studs with 2" Type S drywall screws 12" o.c. Joints staggered 16" each layer and side. (LOAD-BEARING)

PROPRIETARY GYPSUM BOARD

National Gypsum Company
- ¾" Gold Bond® Brand FIRE-SHIELD®
  Gypsum Wallboard
- ¾" Gold Bond® Brand FIRE-SHIELD®
  Gypsum Sheathing

GA FILE NO. WP 8420

WOOD STUDS, CEMENT STUCCO, WIRE MESH, GYPSUM WALLBOARD

EXTERIOR SIDE: Base layer 5/8" type X gypsum sheathing applied parallel to 2 x 6 fire retardant treated wood studs 16" o.c. with 6d coated nails, 1¾", long, 0.0915" shank, ¾" heads, 12" o.c. and covered with a single layer fire resistant protective weather retarder paper stapled along each edge at 16" o.c. Galvanized self-furring wire mesh applied over sheathing with 8d galvanized roofing nails, 2¾", long, 0.113" shank, ¾" heads, 6" o.c. Cement-stucco applied over wire mesh in two ½" thick coats with bonding agent applied between coats.

INTERIOR SIDE: Base layer 5/8" type X gypsum wallboard or gypsum veneer base applied parallel to studs with 6d coated nails, 1¾", long, 0.0915" shank, ¾" heads, 12" o.c. Face layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to studs with 6d coated nails, 2¾", long, 0.113" shank, ¾" heads, 6" o.c. at edges and 12" o.c. at intermediate studs. (LOAD-BEARING)

This Space Left Blank

*Contact the manufacturer for more detailed information on proprietary products.
### GA FILE NO. WP 9010

**METAL CLAD EXTERIOR WALLS**

**GYPสม WALLBOARD, STEEL LINER, STEEL FACIA, GLASS FIBER INSULATION**

Coated steel interlocking interior liner panels attached to top and bottom supporting angles with 5/8"-14纲的 screws. 1/2" glass fiber insulation batts, 0.6 pcf, applied horizontally. 16 gage coated steel hat-shaped subgirts 1/2" deep x 2 1/2" wide with 1/8" legs screw attached to legs of liner panels and to top and bottom supporting angles. Subgirts spaced horizontally 3" from top and bottom of liner panels with intermediate subgirts spaced 36" maximum, 48" minimum. Base layer 5/8" type X gypsum wallboard applied at right angles to subgirts with 1/4" Type S-12 drywall screws spaced 12" from vertical edges. Second layer 1/8" type X gypsum wallboard applied at right angles to subgirts with 1/4" Type S-12 drywall screws spaced 6" from vertical joints into each subgirt. Joints offset 26" from base layer joints. 16 gage hat-shaped metal coated steel subgirts 7/8" deep x 2 1/2" wide with 1/8" legs attached horizontally to first subgirts and gypsum wallboard with 5/8"-14纲的 screws 24" o.c. Exterior steel or protected steel facing units of various shapes attached vertically to subgirts with U-shaped, coated, 18 gage spring steel clips hooked over lips of facing units and screw attached to subgirts with 5/8"-14纲的 screws. Facing units secured along vertical joints with 5/8"-12纲的 screws 18" o.c. 24" wide steel liner panels and 12" wide steel facia units are 1 1/2" deep and 20 gage. (NLB)

**GA FILE NO. WP 9020**

**GYPสม WALLBOARD, GYPSUM SHEATHING, RIGID FURRING CHANNELS, STEEL GIRTS, STEEL WALL PANELS**

**EXTERNAL SIDE:** Base layer 5/8" type X gypsum sheathing applied at right angles to horizontal, 6" to 12" deep, "Z" or "C" shaped, 0.056" to 0.120" thick steel girts 40" o.c. with 1/4" Type S-12 drywall screws 8" o.c. Face layer minimum 26 gage steel exterior wall panels applied at right angles to girts with 1/2" long, No. 12-14 self-drilling Screws 12" o.c. Joints offset 6" from gypsum sheathing joints.

**INTERIOR SIDE:** Base layer 5/8" type X gypsum wallboard applied parallel at right angles to rigid furring channels 24" o.c. with 1" Type S drywall screws 24" o.c. Furring channels attached at right angles to girts with two 3/8" long, Type S-12 panhead screws at each girt. Face layer 5/8" type X gypsum wallboard applied parallel at right angles to channels with 1/4" Type S drywall screws 12" o.c. Joints offset 24" from base layer joints. (LOAD-BEARING)

**GA FILE NO. WP 9021**

**GYPสม WALLBOARD, RIGID FURRING CHANNELS, STEEL GIRTS, STEEL WALL PANELS**

**EXTERNAL SIDE:** Minimum 26 gage steel exterior wall panels applied at right angles to horizontal, 6" to 12" deep, "Z" or "C" shaped, 0.056" to 0.120" thick steel girts 40" o.c. with 1/2" long, No. 12-14 self-drilling screws 12" o.c.

**INTERIOR SIDE:** Base layer 5/8" type X gypsum wallboard applied parallel at right angles to rigid furring channels 24" o.c. with 1" Type S drywall screws 24" o.c. Furring channels attached at right angles to girts with two 3/8" long, Type S-12 panhead screws at each girt. Second layer 5/8" type X gypsum wallboard applied parallel at right angles to channels with 1/4" Type S drywall screws 12" o.c. Joints offset 24" from base layer joints. Face layer 5/8" type X gypsum wallboard applied parallel at right angles to channels with 1/4" Type S drywall screws 12" o.c. Joints offset 24" from second layer joints. (LOAD-BEARING)
# METAL CLAD EXTERIOR WALLS

## GA FILE NO. WP 9060
**GENERIC**
**1 HOUR FIRE**

**GYPSUM WALLBOARD, STEEL FURRING CHANNELS,**
**STEEL PANELS, GLASS FIBER INSULATION**

Steel furring channels 24" o.c. attached at right angles to legs of exterior panels with 1" Type S drywall screws 10" o.c.

**EXTERIOR SIDE:** Exterior panels consist of fluted steel wall panels, 24 gauge steel, 16" wide, having J shaped 2" deep legs which interlock along vertical edges. 3" glass fiber insulation 1.0 pcf friction fit in panel cavity.

**INTERIOR SIDE:** Base layer ¾" type X gypsum wallboard or gypsum veneer base attached with 1" Type S drywall screws 12" o.c. at right angles to steel furring channels. Face layer ¾" type X gypsum wallboard or gypsum veneer base laminated at right angles to furring channels and attached with ⅞" Type S drywall screws 12" o.c. at top and bottom edges. Alternately, base layer applied with 1" Type S drywall screws 24" o.c. at vertical joints and face layer applied with ⅞" Type S drywall screws 12" o.c. Face layer joints offset 16" from base layer joints. (NLB)

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Approx. Weight</th>
<th>Fire Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>¾&quot;</td>
<td>7 psf</td>
<td>FM WP 155-1, 1-31-69; FM WP 167-1, 9-18-69</td>
</tr>
</tbody>
</table>

## GA FILE NO. WP 9200
**GENERIC**
**2 HOUR FIRE**

**GYPSUM WALLBOARD, GYPSUM SHEATHING, RIGID FURRING CHANNELS, STEEL GIRTS, STEEL WALL PANELS**

**EXTERIOR SIDE:** Base layer ¾" type X gypsum sheathing applied at right angles to horizontal, 6" to 12" deep, Z or "C" shaped, 0.056" to 0.120" thick steel girts 48" o.c. with 1¼" Type S-12 drywall screws 8" o.c. Face layer minimum 26 gauge steel exterior wall panels applied at right angles to girts with 1½" long, No. 12-14 self-drilling screws 12" o.c. Joints offset 6" from gypsum sheathing joints. Interior layer ¾" type X gypsum wallboard applied parallel or at right angles to rigid furring channels 24" o.c. with 1" Type S drywall screws 24" o.c. Furring channels attached at right angles to girts with two ¾" long, Type S-12 panhead screws at each girt. Second layer ¾" type X gypsum wallboard applied parallel or at right angles to channels with ⅞" Type S drywall screws 12" o.c. Joints offset 24" from base layer joints. (LOAD-BEARING)

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Approx. Weight</th>
<th>Fire Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varies</td>
<td>9.5 psf</td>
<td>UL R7406, R4024; 96N936592; S-23-99; UL Design V421</td>
</tr>
</tbody>
</table>

## GA FILE NO. WP 9205
**GENERIC**
**2 HOUR FIRE**

**GYPSUM WALLBOARD, GYPSUM SHEATHING, RIGID FURRING CHANNELS, STEEL GIRTS, STEEL WALL PANELS**

**EXTERIOR SIDE:** Base layer ¾" type X gypsum sheathing applied at right angles to horizontal, 6" to 12" deep, Z or "C" shaped, 0.056" to 0.120" thick steel girts 48" o.c. with 1¼" Type S-12 drywall screws 8" o.c. Second layer ¾" type X gypsum sheathing applied at right angles to girts with 1½" type S-12 drywall screws 8" o.c. Vertical joints offset 24" from base layer joints. Face layer minimum 26 gauge steel exterior wall panels applied at right angles to girts with 2½" long, No. 12-14 self-drilling screws 12" o.c. Joints offset 6" from gypsum sheathing joints. (LOAD-BEARING)

**INTERIOR SIDE:** Base layer ¾" type X gypsum wallboard applied parallel or at right angles to rigid furring channels 24" o.c. with 1" Type S drywall screws 24" o.c. Furring channels attached at right angles to girts with two ¾" long, Type S-12 panhead screws at each girt. Face layer ¾" type X gypsum wallboard applied parallel or at right angles to channels with ⅞" Type S drywall screws 12" o.c. Joints offset 24" from base layer joints. (LOAD-BEARING)

<table>
<thead>
<tr>
<th>Thickness</th>
<th>Approx. Weight</th>
<th>Fire Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varies</td>
<td>9.5 psf</td>
<td>UL R7406, R4024; 96N936592; S-23-99; UL Design V421</td>
</tr>
</tbody>
</table>
METAL CLAD EXTERIOR WALLS

GA FILE NO. WP 9205

GYPSUM WALLBOARD, RIGID FURRING CHANNELS, STEEL GIRTS, STEEL WALL PANELS

EXTERIOR SIDE: Minimum 26 gage steel exterior wall panels applied at right angles to horizontal, 6" to 12" deep, 2" or "C" shaped, 0.050" to 0.120" thick steel girts 48" o.c. with 1/2" long, No. 12-14 self-drilling screws 12" o.c.

INTERIOR SIDE: Base layer 1/4" type X gypsum wallboard applied parallel or at right angles to rigid furring channels 24" o.c. with 1" Type S drywall screws 24" o.c. Furring channels attached at right angles to girts with two 3/4" long, Type S-12 panhead screws at each girt. Second layer 1/4" type X gypsum wallboard applied parallel or at right angles to channels with 1/4" Type S drywall screws 12" o.c. Joints offset 24" from base layer joints. Third layer 1/4" type X gypsum wallboard applied parallel or at right angles to channels with 1/4" Type S drywall screws 12" o.c. Joints offset 24" from second layer joints. Steel straps, 0.020" x 1 1/2" wide, vertically applied over third layer at vertical joints and intermediate channels with 2" Type S drywall screws 12" o.c. Face layer 1/4" type X gypsum wallboard applied parallel or at right angles to steel straps with 1" Type S drywall screws 6" o.c. Joints offset 24" from third layer joints. (LOAD-BEARING)

Thickness: Various
Approx. Weight: 9.5 psf
Fire Test: UL R7405, R4024; 886366522; 8-23-99
UL Design V4Z1

GA FILE NO. WP 9225

SOLID GYPSUM WALLBOARD, METAL FACINGS, GLASS FIBER INSULATION

Coated steel interlocking interior side panels attached to top and bottom supporting angles with 5/16"-14 steel screws. 1/4" glass fiber insulation batts, 0.6 psf, applied horizontally. 16 gage coated steel hat-shaped subgirts 3/8" deep x 2 1/2" wide with 5/16" legs screws attached to lips of inner panels and to top and bottom supporting angles. Subgirts spaced horizontally 3" from top and bottom of inner panels with intermediate subgirt spaced 36" minimum, 48" maximum. Base layer 1/4" type X gypsum wallboard applied at right angles subgirts with 1/4" Type S-12 drywall screws spaced 12" from vertical joints. Second layer 1/4" type X gypsum wallboard applied at right angles to subgirts with 1/4" Type S-12 drywall screws spaced 6" from vertical joints into each subgirt. Joints offset 24" from base layer joints. Third layer 1/4" type X gypsum wallboard applied with 1/4" Type S drywall screws spaced 12" from vertical joints and over subgirts. Joints offset 6" from second layer joints. 18 gage hat-shaped metal coated steel subgirts 3/8" deep x 3" wide with 5/16" legs attached horizontally to first subgirt over gypsum wallboard with 2" Type S-12 drywall screws 24" o.c. Exterior steel or precast steel facing units of various shapes attached vertically to subgirts with U-shaped, coated, 14 gage spring steel clips hooked over lips of facing units and screw attached to subgirts with 3/4"-12 steel screws. Facing units secured along vertical joints with 9/16"-12 steel screws 18" o.c. 24" wide steel inner panels and 12" wide steel facing units are 1 1/2" deep x 20 gage. (NLB)

Thickness: 5/8"-6"
Fire Test: UL R4013-15, 1-3-71,
UL Design U602

GA FILE NO. WP 9325

GYPSUM WALLBOARD, STEEL FURRING CHANNELS, METAL PANELS, GLASS FIBER INSULATION

Steel furring channels 24" o.c. applied at right angles to legs of exterior panels with 1" Type S drywall screws 16" o.c.

EXTERIOR SIDE: Exterior panels consist of flush steel wall panels, 24 gage steel, 16" wide, having J shaped 3" deep legs which interlock along vertical edges. 3" glass fiber insulation, 1.0 psf, friction fit in panel cavity.

INTERIOR SIDE: Base layer 1/4" type X gypsum wallboard or gypsum veneer base applied at right angles to furring channels with 1" Type S drywall screws 24" o.c. Second layer 1/4" type X gypsum wallboard or gypsum veneer base applied at right angles to furring channels with 1/4" Type S drywall screws 24" o.c. Vertical joints offset 18" from base layer joints. Steel furring channels placed over the layer directly over the first row of furring channels and attached thereto with 1/4" Type S drywall screws 18" o.c. Third layer 1/4" type X gypsum wallboard or gypsum veneer base applied at right angles to furring channels with 1/4" Type S drywall screws 24" o.c. Face layer 1/4" type X gypsum wallboard or gypsum veneer base applied at right angles to furring channels with 1/4" Type S drywall screws 12" o.c. (LOAD-BEARING)

Thickness: 5/8"-6"
Approx. Weight: 11 psf
Fire Test: FM WP 150-2, 11-15-68
AREA SEPARATION WALLS

GA FILE NO. ASW 1000

GYPSUM WALLBOARD, STEEL H STUDS
Two layers 1" x 24" proprietary type X gypsum panels inserted between 2" floor and ceiling runners with 2" steel H studs between adjacent pairs of gypsum panels. (NLB)
A ¾" minimum air space must be maintained between steel components and adjacent framing (as indicated by dashed lines in sketch). As an alternate to an air space, the steel components are covered with 6" wide battens of ½" gypsum board or 1" mineral fiber insulation. As an alternate to battens, one or both faces of the separation wall are covered with 1/²" mineral fiber insulation stapled to the gypsum liner panels or ½" regular gypsum board screw attached to the steel components.

Sound tested with 2 x 4 stud wall faced with ½" regular gypsum wallboard each side of assembly and 5/₈" mineral fiber in stud space on both sides.

PROPRIETARY GYPSUM BOARD
United States Gypsum Company
1" SHEETROCK® Brand Gypsum Linear Panels
Thickness: 3½"
Approx. Weight: 9 psf
Fire Test: UL R1315, 89NK28766, 5-14-90; UL Design U336
Sound Test: RAL TL89-350, 9-12-88

GA FILE NO. ASW 1001

GYPSUM WALLBOARD, STEEL H STUDS
Two layers 1" x 24" proprietary type X gypsum panels inserted between floor and ceiling runners with 2" steel H stud between adjacent pairs of gypsum panels. (NLB)
A ¾" minimum air space must be maintained between steel components and adjacent framing (as indicated by dashed lines in sketch). As an alternate to an air space, the steel components are covered with 6" wide battens of ½" type X gypsum wallboard or full sheets of ½" type X gypsum wallboard screw attached to the steel components.

Sound tested with 2 x 4 stud wall faced with ½" regular gypsum wallboard each side of assembly and 3½" glass fiber in stud space on both sides.

PROPRIETARY GYPSUM BOARD
G-P Gypsum
1" ToughRock® Fireguard® Shaftliner
Thickness: 3½"
Approx. Weight: 9-½ psf
Fire Test: WHI 495-1290, 11-15-94; ITS Design GPWA 120-04; UL R2717, 04NK3315, 8-15-04; UL Design U373
Sound Test: RAL TL89-383, 11-10-89

GA FILE NO. ASW 1002

GYPSUM WALLBOARD, STEEL H STUDS
Two layers 1" x 24" proprietary type X gypsum panels inserted between floor and ceiling runners with 2" steel H stud between adjacent pairs of gypsum panels. (NLB)
A ¾" minimum air space must be maintained between steel components and adjacent framing (as indicated by dashed lines in sketch). As an alternate to an air space, the steel components are covered with 6" wide battens of ½" type X gypsum wallboard or full sheets of ½" type X gypsum wallboard screw attached to the steel components.

Sound tested with 2 x 4 stud wall faced with ½" regular gypsum wallboard each side of assembly and 3½" glass fiber in stud space on both sides.

PROPRIETARY GYPSUM PANEL PRODUCT
G-P Gypsum
1" DensGlass® Ultra Sheathliner™
Thickness: 3½"
Approx. Weight: 9-½ psf
Fire Test: WHI 495-1290, 11-15-94; ITS Design GPWA 120-04; UL R2717, 04NK0315, 8-18-04; UL Design U373
Sound Test: See ASW 1001
(RAL TL89-383, 11-10-89)

*Contact the manufacturer for more detailed information on proprietary products.
**GA FILE NO. ASW 1003**

**GYPSUM WALLBOARD, STEEL STUDS**

Two layers 1" x 24" proprietary type X gypsum panels inserted between floor and ceiling runners with 2" steel stud between adjacent pairs of gypsum panels. (NLB)

A ¾" minimum air space must be maintained between steel components and adjacent framing (as indicated by dashed lines in sketch).

Sound tested with 2 x 4 stud wall faced with ½" regular gypsum wallboard each side of assembly and 3½" glass fiber insulation in stud space on both sides.

**PROPRIETARY GYPSUM BOARD**

8PB America Inc. - 1" ProRoo® Shaftliner

| Thickness: 3½" |
| Approx. Weight: 9-½ psf |
| Fire Test: UL RB701, 99NK43912, 6-1-00, UL Design U366 |
| Sound Test: RAL TL00-175, 12-6-00 |

---

**GA FILE NO. ASW 1004**

**GYPSUM WALLBOARD, STEEL STUDS**

Two layers 1" x 24" proprietary type X gypsum panels inserted between 2" floor and ceiling runners with 2" steel stud between adjacent pairs of gypsum panels. (NLB)

A ¾" minimum air space must be maintained between steel components and adjacent framing (as indicated by dashed lines in sketch).

Sound tested with 2 x 4 stud wall faced with ½" regular gypsum wallboard each side of system and 3½" glass fiber insulation in stud space on both sides.

**PROPRIETARY GYPSUM BOARD**

American Gypsum Company - 1" SHAFT LINER

Temple-Inland Forest Products Corporation - 1" Silent Guard Gypsum Liner Board

| Thickness: 3½" |
| Approx. Weight: 9.5 psf |
| Fire Test: UL R8337 (R15683, R14186), 04NK19014, 10-28-04, UL Design U375 |
| Sound Test: RAL TL05-149, 7-13-05 |

---

**GA FILE NO. ASW 1005**

**GYPSUM WALLBOARD, STEEL STUDS**

Two layers 1" x 24" proprietary type X gypsum panels inserted between 2" floor and ceiling runners with 2" steel stud between adjacent pairs of gypsum panels. (NLB)

A ¾" minimum air space must be maintained between steel components and adjacent framing (as indicated by dashed lines in sketch). As an alternate, the steel components may be covered with 5" wide battens or full sheets of ½" type X gypsum wallboard.

Sound tested with 2 x 4 stud wall faced with ½" gypsum wallboard each side of system and 3½" glass fiber insulation in stud space.

**PROPRIETARY GYPSUM BOARD**

National Gypsum Company - 1" Gold Bond® Brand FIRE-SHIELD® Shaftliner

| Thickness: 3½" |
| Approx. Weight: 9 psf |
| Fire Test: UL R3501, 92NK28896, 8-7-93, UL Design U347 |
| Sound Test: NGC 2620, 2-3-86 |

*Contact the manufacturer for more detailed information on proprietary products.*
## AREA SEPARATION WALLS

### GA FILE NO. ASW 1100

**GENERIC**

**2 HOUR FIRE**

**50 to 54 FSTC SOUND**

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 1/2" type X gypsum wallboard or gypsum veneer base applied parallel to each side of 1 1/2" steel studs 24" o.c. with 1" Type S drywall screws 12" o.c. Face layer 1/2" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1/4" Type S drywall screws 12" o.c.

Joints staggered 24" each layer and side. Sound tested with 1 1/2" mineral fiber insulation in stud space. (NLB)

- **Thickness:** 3 1/2"  
- **Approx. Weight:** 9 psf  
- **Fire Test:** UC, 12-7-64  
- **Field Sound Test:** ACI 1131a, 7-14-64

### GA FILE NO. ASW 1105

**GENERIC**

**2 HOUR FIRE**

**50 to 54 STC SOUND**

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 1/2" type X gypsum wallboard or gypsum veneer base applied parallel to each side of 2 1/2" steel studs 24" o.c. with 1" Type S drywall screws 24" o.c. Face layer 1/2" type X gypsum wallboard or gypsum veneer base applied parallel to each side with 1/4" Type S drywall screws 12" o.c.

Joints staggered 24" each layer and side. Sound tested with 1 1/2" mineral fiber insulation in stud space. (NLB)

- **Thickness:** 4 1/2"  
- **Approx. Weight:** 9 psf  
- **Fire Test:** UC, 9-7-64  
- **Sound Test:** CK 654-40, 9-7-65

### GA FILE NO. ASW 1200

**PROPRIETARY**

**2 HOUR FIRE**

**45 to 49 STC SOUND**

**GYPSUM WALLBOARD, STEEL C-T STUDS**

One layer 1" x 24" proprietary type X gypsum panels or proprietary wallboard 12" o.c. Face layer 1/2" proprietary type X gypsum wallboard or proprietary C-T steel studs between panels. One layer 1/2" proprietary type X gypsum wallboard applied at right angles to each side with 1" Type S drywall screws 8" o.c.

Joints staggered 24" on opposite sides. STC estimated with 1" thick glass fiber insulation stapled in stud space. (NLB)

- **Thickness:** 3 1/2"  
- **Approx. Weight:** 9 psf  
- **FIRE Test:** See WP 7097  
  - (WHI 495-1182, 5-15-92; WHI 495-1220, 12-17-92; ITS Design GP/NA 120-02)  
- **Sound Test:** See WP 7097  
  - (RAL TL, 390, 11-8-89)

*Contact the manufacturer for more detailed information on proprietary products.*
### Area Separation Walls

#### GA File No. ASW 1201

**Proprietary**

**Gypsum Wallboard, Steel C-T Studs**

One layer 1" x 24" proprietary Type X gypsum panels inserted between 2½" floor and ceiling J runnels with T section of 2½" proprietary G-T steel studs between panels. One layer ½" proprietary Type X gypsum wallboard applied at right angles to each side with 1" Type S drywall screws 8" o.c.

Joints staggered 24" on opposite sides. STC estimated with ½" thick glass fiber insulation stapled in stud space. (NLB)

<table>
<thead>
<tr>
<th>PROPRIETARY GYPSUM PANEL PRODUCTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-P Gypsum</td>
</tr>
<tr>
<td>- ½&quot; ToughRock® Fireguard®</td>
</tr>
<tr>
<td>- 1&quot; DensGlass® Ultra Sheathliner</td>
</tr>
</tbody>
</table>

- Thickness: 3½"
- Approx. Weight: 9 psf
- Fire Test: See WP 7097
  - WH 495-1192, 5-15-92;
  - WH 495-1220, 12-17-92;
  - ITS Design CPWA 120-02)
- Sound Test: See WP 7097
  - (RAL TL89-380, 11-8-89)

#### GA File No. ASW 1205

**Proprietary**

**Gypsum Wallboard, Steel C-H Studs**

One layer 1" x 24" proprietary Type X gypsum panels inserted between 2½" floor and ceiling J runnels with T section of 2½" proprietary vented C-H steel studs between panels. One layer ½" proprietary Type X gypsum wallboard or gypsum veneer base applied to each side with 1" Type S drywall screws 12" o.c.

Sound tested with ½" mineral fiber insulation, 3.0 psf, in stud space. (NLB)

**Proprietary Gypsum Board**

- American Gypsum Company - ½" FireBloc® Type C
- Lafarge North America Inc. - ½" Firecheck® Type C
- Temple-Inland Forest Products Corporation - ½" TG-C
- United States Gypsum Company - ½" SHEETROCK® Brand FIRECODE®
  - Core Gypsum Panels
  - 1" SHEETROCK® Brand Gypsum Liner Panels

- Thickness: 4"
- Approx. Weight: 9 psf
- Fire Test: UL 26-73;
  - UL R11633/87N(21494)
  - R1379, 9-14-87
  - UL Design U467
- Sound Field Test: BBN 750/75, 7-16-75

#### GA File No. ASW 1206

**Proprietary**

**Gypsum Wallboard, Steel C-H or C-T Studs**

One layer 1" x 24" proprietary Type X gypsum panels inserted between 2½" floor and ceiling J runnels with T section of 2½" steel C-H or C-T studs between panels. One layer ½" proprietary Type X gypsum wallboard applied parallel to each side with 1" Type S drywall screws 12" o.c.

Sound tested with 1½" glass fiber insulation friction fit in stud space. (NLB)

**Proprietary Gypsum Board**

- American Gypsum Company - ½" FireBloc® TYPE C
  - 1" SHAFT LINER
- PABCO Gypsum - ½" FLAME CURB® Super "C"™
  - 1" PABCO® Gypsum Liner Board
- Temple-Inland Forest Products Corporation - ½" TG-C
  - 1" Silent Guard™ Gypsum Liner Board

- Thickness: 3½"
- Approx. Weight: 9 psf
- Fire Test: UL RT034, 93N953151
  - UL Design U429
- Sound Test: RAL-TL3-182, 7-2-93

*Contact the manufacturer for more detailed information on proprietary products.*
### AREA SEPARATION WALLS

<table>
<thead>
<tr>
<th>GA FILE NO. ASW 1215</th>
<th>PROPRIETARY*</th>
<th>2 HOUR FIRE</th>
<th>45 to 49 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL I STUDS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 1&quot; x 24&quot; proprietary type X gypsum panels inserted between 2½&quot; floor and ceiling runners with lab-flange section of 2½&quot; steel I studs between panels. One layer ½&quot; proprietary type X gypsum wallboard or gypsum veneer base applied parallel or at right angles to each side with 1&quot; Type S d'Ywall screws 12&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sound tested with 1½&quot; glass fiber insulation friction fit in stud space. (NLB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Gypsum Company</td>
<td>- ½&quot; Gold Bond® Brand FIRE-SHIELD® Gypsum Wallboard</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 1&quot; Gold Bond® Brand FIRE-SHIELD® Shaftliner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 3½&quot;</td>
<td>Approx. Weight: 9 psf</td>
<td>Fire Test: UL R3501, 92NK22749, 9-15-93; 97NK5247, 2-4-97; UL Design U499; FM WP-545, 12-22-01</td>
<td>Sound Test: NGC 2617, 7-27-82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. ASW 1500</th>
<th>PROPRIETARY*</th>
<th>2 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL H STUDS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two layers 1&quot; x 24&quot; proprietary type X gypsum panels inserted between 2&quot; floor and ceiling runners with H studs between adjacent pairs of gypsum panels. A ½&quot; minimum air space must be maintained between steel components and adjacent framing (as indicated by dashed lines in sketch). As an alternate to an air space, the steel components are covered with 6&quot; wide batts or full sheets of ½&quot; type X gypsum board screwed to the steel components. (NLB)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lafarge North Americas Inc.</td>
<td>- 1&quot; Firecheck® Shaftliner</td>
<td></td>
</tr>
<tr>
<td>Thickness: 3½&quot;</td>
<td>Approx. Weight: 9 psf</td>
<td>Fire Test: WHI-495-1396/1398, 6-26-08; ITS Design LSWA 120-03</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. ASW 2600</th>
<th>PROPRIETARY*</th>
<th>3 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL H STUDS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two layers 1&quot; x 24&quot; proprietary type X gypsum panels inserted between 2&quot; floor and ceiling runners with 2½&quot; steel H studs between adjacent pairs of gypsum panels. 2½&quot; mineral fiber insulation, 3.0 psf, applied over each side and stapled to gypsum panels. (NLB)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States Gypsum Company</td>
<td>- SHEETROCK® Brand Gypsum Liner Panels</td>
<td></td>
</tr>
<tr>
<td>Thickness: 6&quot;</td>
<td>Approx. Weight: 9.8 psf</td>
<td>Fire Test: WHI-495-0393, 1-14-82</td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
## Floor-Ceiling Systems, Noncombustible

### GA File No. FC 1105 - Generic

**Gypsum Wallboard, Steel Joists, Concrete Slab**

One layer 1/2" type X gypsum wallboard or gypsum veneer base applied at right angles to 3/8" steel studs 24" o.c. with 1/2" drywall screws 12" o.c. Studs tied with double strand 18 gauge wire 6" o.c. to steel joists 24" o.c. supporting 7/8" rib metal lath and 2" concrete slab. (One hour restrained and unrestrained.)

- **Approx. Ceiling Weight:** 2 psf
- **Fire Test:** FM FC-134, 12-16-64
- **Sound Test:** See FC 2030 (NGC 4075, 3-25-65)

### GA File No. FC 1110 - Generic

**Gypsum Wallboard, Steel Joists, Concrete Slab**

One layer 1/2" type X gypsum wallboard or gypsum veneer base applied at right angles to rigid furring channels 24" o.c. with 1/2" Type S drywall screws 12" o.c. in field. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 52" long with screws 6" o.c. Furring channels were tied to open web steel joists 24" o.c. supporting 7/8" rib metal lath or 4½" deep 28 gage corrugated steel and 2" concrete slab measured from top of flutes. (Passed 60 minute fire test restrained and unrestrained.)

- **Approx. Ceiling Weight:** 2 psf
- **Fire Test:** UL R2717-30, 6-12-64, UL Design G502

### GA File No. FC 1130 - Generic

**Gypsum Wallboard, Steel Joists, Concrete Slab**

One layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to 3/8" or 6" steel studs 18" o.c. with 1/2" Type S drywall screws 12" o.c. Studs placed horizontally to form ceiling envelope without direct attachment to joists except at stud ends. At end joint locations a 5/4" long backing stud is attached to the continuous stud with six 6½" long self tapping screws 10" o.c. Studs with a stud sleeve on one end inserted in runners around side walls suspended by ¾" x 1" steel straps from open web steel bar joists 24" o.c. supporting 7/8" rib metal lath and 2" concrete slab.

Maximum span for 3/8" studs is 11'10" at 18" o.c. and for 6" studs is 12'10" at 18" o.c.

- **Approx. Ceiling Weight:** 2.5 psf
- **Fire Test:** OSU 1-594, 11-5-66

### GA File No. FC 1141 - Generic

**Gypsum Wallboard, Resilient Channels, Steel Channel Joists, Concrete Slab**

Base layer 1/2" type X gypsum wallboard applied at right angles to resilient furring channels 24" o.c. with 11/4" Type S drywall screws 12" o.c. Resilient furring channels applied at right angles to channel shaped, minimum 8½" deep, 18 gauge galvanized steel joists 24" o.c. with 7/8" Type S-12 drywall screws at each joint. Base layer butt joints staggered 48" in adjacent courses. Face layer 1/2" type X gypsum wallboard applied at right angles to channels with end joints located midway between channels. Face layer attached to channels with 11/6" Type S drywall screws 12" o.c. End joints attached to base layer with 11/6" Type G screws 12" o.c. placed 11/8" back from either side of end joints. Face layer edge joints offset 24" from base layer edge joints. Face layer end joints offset 36" from base layer end joints. Joists supporting 9½ deep 30 gage corrugated steel deck and 1½" (measured from top of flutes) concrete slab.

- **Approx. Ceiling Weight:** 4 psf
- **Fire Test:** NRCC B-4216.1, 3-3-05, Assembly FF-40
FLOOR-CEILING SYSTEMS, NONCOMBUSTIBLE

GA FILE NO. FC 1142

GYPSUM WALLBOARD, RESILIENT CHANNELS, STEEL CHANNEL JOISTS, GLASS FIBER INSULATION, CONCRETE SLAB

Base layer 1/2" type X gypsum wallboard applied at right angles to resilient furring channels 24" o.c. with 1 1/4" Type S drywall screws 12" o.c. Resilient furring channels applied at right angles to channel shaped, minimum 8" deep, 18 gage galvanized steel joists 16" o.c. with 1/4" Type S-12 drywall screws at each joint. Base layer butt joints staggered 48" in adjacent courses. Face layer 1/2" type X gypsum wallboard applied at right angles to channels with end joints located midway between channels. Face layer attached to channels with 1/2" Type S drywall screws 12" o.c. End joints attached to base layer with 1/2" Type G screws 12" o.c. placed 1/2" back from either side of end joints. Face layer edge joints offset 24" from base layer edge joints. Face layer end joints offset 36" from base layer and joints. Joints supported 3/4" deep 30 gage corrugated steel deck and 1" (measured from top of flutes) concrete slab, 3/8" glass fiber batt insulation, 0.64 psf, in joint space.

1 HOUR FIRE

Approx. Ceiling Weight: 4 psf
Fire Test: NRCC B-4216.1, 3-3-05, Assembly FF-43

GA FILE NO. FC 1143

GYPSUM WALLBOARD, RESILIENT CHANNELS, STEEL CHANNEL JOISTS, MINERAL FIBER INSULATION, CONCRETE SLAB

Base layer 1/8" type X gypsum wallboard applied at right angles to resilient furring channels 24" o.c. with 1 1/4" Type S drywall screws 12" o.c. Resilient furring channels applied at right angles to channel shaped, minimum 8" deep, 18 gage galvanized steel joists 16" o.c. with 1/4" Type S-12 drywall screws at each joint. Base layer butt joints staggered 48" in adjacent courses. Face layer 1/2" type X gypsum wallboard applied at right angles to channels with end joints located midway between channels. Face layer attached to channels with 1/2" Type S drywall screws 12" o.c. End joints attached to base layer with 1/2" Type G screws 12" o.c. placed 1/2" back from either side of end joints. Face layer edge joints offset 24" from base layer edge joints. Face layer end joints offset 36" from base layer and joints. Joints supported 3/4" deep 30 gage corrugated steel deck and 1" (measured from top of flute) concrete slab, 3/8" glass fiber insulation, 0.64 psf, or 3/8" mineral fiber batt insulation, 2.2 psf, in joint space.

1 HOUR FIRE

Approx. Ceiling Weight: 4 psf
Fire Test: NRCC B-4216.1, 3-3-05, Assemblies FF-44 & FF-53

GA FILE NO. FC 1144

GYPSUM WALLBOARD, STEEL CHANNEL JOISTS, CONCRETE SLAB

Base layer 1/2" type X gypsum wallboard applied at right angles to channel shaped, minimum 8" deep, 18 gage galvanized steel joists 24" o.c. with 1 1/4" Type S-12 drywall screws 12" o.c. Base layer butt joints staggered 48" in adjacent courses. Face layer 1/2" type X gypsum wallboard applied at right angles to joists with end joints located midway between joists. Face layer attached to joists with 1/4" Type S-12 drywall screws 12" o.c. End joints attached to base layer with 1/2" Type G screws 12" o.c. placed 1/2" back from either side of end joints. Face layer edge joints offset 24" from base layer edge joints. Face layer end joints offset 36" from base layer and joints. Joints supporting 3/4" deep 30 gage corrugated steel deck and 1" (measured from top of flutes) concrete slab.

1 HOUR FIRE

Approx. Ceiling Weight: 4 psf
Fire Test: NRCC B-4216.1, 3-3-05, Assembly FF-54

GA FILE NO. FC 1145

GYPSUM WALLBOARD, RESILIENT CHANNELS, STEEL JOISTS, CONCRETE SLAB

One layer 1/8" type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. with 1 1/4" Type S drywall screws 12" o.c. set back 2" from edges. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 60" long with screws 12" o.c. Furring channels applied at right angles to 6" x 1 1/2" flanged 18 gage steel channel joists 24" o.c. with two 3/8" Type S-12 drywall screws at each joint. Joists supporting 25 gage corrugated metal deck and 2" (measured from top of flutes) light weight, 105 psf, concrete slab. (One hour unrestricted.)

1 HOUR FIRE

Approx. Ceiling Weight: 2 psf
Fire Test: FM FC 245-1, 1-27-77
# Floor-Ceiling Systems, Noncombustible

## GA File No. FC 1180
### Generic

**Steel Joists, Concrete Slab, Metal Lath, Gypsum Plaster**

3/8" 12-1-3 gypsum-sand plaster applied over 3/8" rib metal lath wire tied with 18 gage wire 5" o.c. to open web steel joists 24" o.c. supporting 3/8" rib metal lath and 2" concrete slab. (Passed 90 minute fire test.)

Approx. Ceiling: 1 Hour
Weight: 4 psf
Fire Test: BMS 92/43, 10-7-42

## GA File No. FC 1181
### Proprietary*

**Steel Joists, Concrete Slab, Glass Mat Gypsum Panel**

One layer 3/8" proprietary type X glass mat gypsum panel applied at right angles to rigid furring channels 24" o.c. with 1" Type S drywall screws 12" o.c. Gypsum panel and joints located midway between continuous channels and attached to additional pieces of channel 60" long with screws 12" o.c. Furring channels attached with 18 gage wire ties to open web steel joists 24" o.c. supporting 3/8" rib metal lath and 2" concrete slab.

**Proprietary Gypsum Panel Product**

BPB America Inc. - 3/8" GlasRoc® Sheathing Type X

Approx. Ceiling: 2.5 psf
Fire Test: UL R3662/F15187, 2-4-02, UL Design G501

## GA File No. FC 1290
### Proprietary*

**Steel Joists, Concrete Slab, Metal Lath, Gypsum Tiles**

Nominal 24" x 48" x 3/8" proprietary type X gypsum wallboard lay-in panels supported by steel suspension system suspended from steel open web joists supporting 3/8" rib metal lath and 21/2" concrete slab. (1/2 hour restrained and unrestrained.)

**Proprietary Gypsum Board**

National Gypsum Company - 3/8" Gridstone® Brand Ceiling Panels

Approx. Ceiling: 2.5 psf
Fire Test: FM JJ, 0FSQ7.AC, 7-17-80, FM FC-300

## GA File No. FC 2030
### Generic

**Steel Joists, Concrete Slab, Gypsum Wallboard**

One layer 3/8" type X gypsum wallboard or gypsum veneer base applied at right angles to rigid furring channels 24" o.c. with 1" Type S drywall screws 12" o.c. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 54" long with screws 12" o.c. Furring channels attached with 18 gage wire ties 48" o.c. to open web steel joists 24" o.c. supporting 3/8" rib metal lath or 1/4 deep 28 gage corrugated steel and 21/2" concrete slab measured from top of flutes. Furring channels may be attached to 1/2" cold rolled carrying channels 48" o.c. suspended from joists by 8 gage wire hangers not over 48" o.c. (Two hour restrained and unrestrained.)

(See GA File No. BM 3310)

Approx. Ceiling: 2 Hour
Weight: 2 psf
Fire Test: UL R3501-28, 2-7-64, UL Design G514; ULC Design IS 11
Sound Test: NGC 4075, 3-25-69

*Contact the manufacturer for more detailed information on proprietary products.
### FLOOR-CEILING SYSTEMS, NONCOMBUSTIBLE

**GA FILE NO. FC 2116**

**GENERIC**

**2 HOUR FIRE**

**GYPSUM WALLBOARD, STEEL CHANNEL JOIST, CONCRETE SLAB**

Base layer 5/16" type X gypsum wallboard or veneer base applied at right angles to channel shaped, minimum 7 1/4" deep. 18 gauge galvanized steel joists 24" o.c. with 1" Type S-12 drywall screws 12" o.c. End joints located midway between joists and staggered between rows. Face layer 5/16" type X gypsum wallboard or veneer base applied at right angles to joists with 1/2" Type S-12 drywall screws 12" o.c. placed 2" from edges and 1 1/2" Type G drywall screws 12" o.c. placed 2" back on either side of end joints. End joints located midway between joists and joints offset 2" from base layer joints. Joints supporting 28 gauge corrugated metal deck and 2 1/2" concrete slab measured from the bottom of flutes. Joints braced at midspan with continuous 2" wide, 18 gauge galvanized steel strips attached to the bottom flange of each joint with one 1/4" Type S-12 penhead screw.

Approx. Ceiling Weight: 5 psf
Fire Test: FM FC 224-2, 6-19-75

---

**GA FILE NO. FC 2120**

**GENERIC**

**2 HOUR FIRE**

**CONCRETE SLAB, PAN JOISTS, GYPSUM WALLBOARD**

One layer 5/4" type X gypsum wallboard or gypsum veneer base applied at right angles to rigid furring channels 24" o.c. with 1" Type S drywall screws 8" o.c. Gypsum board end joints located over continuous channels and attached to additional pieces of channel 54" long located midway between continuous channels at end joints. Furring channels 24" o.c. suspended from 2 1/2" precast reinforced concrete joists 35" o.c. with 21 gauge galvanized steel hanger strips fastened to sides of joints. Joints 2" deep, 10°.

Approx. Ceiling Weight: 3 psf
Fire Test: PCA 1281-1, 10-67

---

**GA FILE NO. FC 2130**

**PROPRIETARY**

**2 HOUR FIRE**

**STEEL JOISTS, CONCRETE SLAB, GYPSUM WALLBOARD**

One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to rigid furring channels 24" o.c. with 1" Type S drywall screws 12" o.c. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 62" long with screws 12" o.c. Furring channels attached with 18 gauge wire ties to open web steel joists 24" o.c. supporting 5/8" rib metal lath and 2" concrete slab. (Two hours restrained and unrestrained.)

**PROPRIETARY GYPSUM BOARD**

- American Gypsum Company
- BPR America Inc.
- G-P Gypsum
- Lafarge North America Inc.
- National Gypsum Company
- PABCC Gypsum
- Temple-Inland Forest Products Corporation
- 5/8" FireBlock® TYPE X
- 5/8" ProRock® Type C Gypsum Panels
- 5/8" TeghRock® Fireguard® C
- 5/8" Firecheck® Type C
- 5/8" Gold Bond® Brand FIRE-SHIELD C™
- Gypsum Wallboard
- 5/8" FLAME CURB® Super C™
- 5/8" Type X

Approx. Ceiling Weight: 2.5 psf
Fire Test: UL R2717-43, 7-29-66,
UL Design G505,
ULC Design 6512

---

**GA FILE NO. FC 2160**

**GENERIC**

**2 HOUR FIRE**

**STEEL JOISTS, CONCRETE SLAB, METAL LATH, GYPSUM PLASTER**

5/8" gypsum-vermiculite plaster or 7/8" gypsum-wood fiber plaster applied over 5/8" rib metal lath wire tied with 10 gauge wire 6" o.c. to open web steel joists 24" o.c. supporting 5/8" rib metal lath and 2" concrete slab.

Approx. Ceiling Weight: 3 psf
Fire Test: BM R02-43, 10-7-42

*Contact the manufacturer for more detailed information on proprietary products.*
### FLOOR-CEILING SYSTEMS, NONCOMBUSTIBLE

#### GA FILE NO. FC 2170
**STANDARD**

**STEEL JOISTS, CONCRETE SLAB, METAL LATH, GYPSUM PLASTER**

- 3/8" 1:1 gypsum-sand wood-fibered plaster applied over 3.4 lb. metal lath tied 6" o.c. with 18 gauge wire 6" o.c. to 3/4" cold rolled channels 13 1/2" o.c. Channels wire tied with 16 gauge wire to open web steel joists 24" o.c. supporting 1/4" rib metal lath and 2 1/2" concrete slab.

*Approx. Ceiling Weight: 4 psf
Fire Test: UL R5429-1, 6-23-66*

#### GA FILE NO. FC 2190
**proprietary**

**STEEL JOISTS, CONCRETE SLAB, METAL LATH, GYPSUM TILES**

Nominal 24" x 24" x 1/8" proprietary type X gypsum wallboard lay-in panels supported by steel suspension system suspended from steel open web joists supporting 1/6" rib metal lath and 2 1/2" concrete slab. (Two hour restrained and unrestrained.)

**proprietary gypsum board**

- American Gypsum Company: 1/4" FireBlock® Type C
- BPB America Inc.: 1/4" ProRock® Type C Gypsum Panels
- Lafarge North America Inc.: 1/4" Firecheck® Type C
- National Gypsum Company: 1/4" Gridstone® Brand Ceiling Panels
- Temple-Inland Forest Products Corporation: 1/4" SHEETROCK® Brand ClimatePlus™ Gypsum Lay-In Panels

*Approx. Ceiling Weight: 2.5 psf
Fire Test: UL R1319-136, 6-16-70; UL R3501, 32N2886, 9-15-93; UL Design G222*

#### GA FILE NO. FC 3012
**proprietary**

**STEEL JOISTS, CONCRETE SLAB, GYPSUM WALLBOARD**

One layer 9/16" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to furring channels 24" o.c. (double channels at end joints) with 1" type S drywall screws. 1/2" o.c. 9/16" x 2 1/4" type X gypsum wallboard strips over belt joints. Furring channels wire tied to open web steel gus 24" o.c. supporting 1/6" rib metal lath and 2 1/2" concrete slab. (Three hour restrained and unrestrained.)

*(See GA File No. BM 3212)*

**proprietary gypsum board**

- American Gypsum Company: 5/8" FireBlock® Type C
- BPB America Inc.: 5/8" ProRock® Type C Gypsum Panels
- BPB Canada Inc.: 5/8" ProRock® Type C Gypsum Panels
- G+P Gypsum: 5/8" ToughRock® Fireguard® C
- Lafarge North America Inc.: 5/8" Firecheck® Type C
- National Gypsum Company: 5/8" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard
- Temple-Inland Forest Products Corporation: 5/8" SHEETROCK® Brand FIRECIRCLE® Cere Gypsum Panels
- PA&CO Gypsum: 5/8" FLAME CURB® Super C™
- United States Gypsum Company: 5/8" SHEETROCK® Brand FIRECIRCLE® Cere Gypsum Panels

*Approx. Ceiling Weight: 5 psf
Fire Test: UL R1319-79, 4-14-65
(Rev. 4-4-77) UL R3501, B661K2103, 11-27-82
Based on UL R3560-7, -8, 11-12-97; UL R27-17-61; 6-18-87;
UL Design G512
Sound Test: Est. see FC 2030
(NGC 407F, 3-25-63)*

*$Contact the manufacturer for more detailed information on proprietary products.*
### FLOOR-CEILING SYSTEMS, NONCOMBUSTIBLE

<table>
<thead>
<tr>
<th>GA FILE NO.</th>
<th>FC 3140</th>
<th>GENERIC</th>
<th>3 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEEL JOISTS, METAL LATH, GYPSUM PLASTER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4&quot; 1:2:1:3 gypsum-vermiculite plaster or 7/8&quot; mat-lam fiber gypsum plaster applied over 3.4 lb. metal lath wire tied with 18 gage wire 5&quot; o.c. to open web steel joists 24&quot; o.c. supporting 9/16&quot; rib metal lath and 2½&quot; concrete slab.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Ceiling Weight:</td>
<td>4 psf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test:</td>
<td>BMS 92/43, 10-7-42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO.</th>
<th>FC 3150</th>
<th>GENERIC</th>
<th>3 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONCRETE SLAB, CELLULAR STEEL DECK, METAL LATH, GYPSUM PLASTER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>½&quot; thick mill-mixed gypsum-perlite plaster applied over 3.4 lb. metal lath wire tied to ¾&quot; cold rolled channels 12&quot; o.c. wire tied to 1½&quot; cold rolled channels 48&quot; o.c. suspended 16&quot; with 8 gage steel wire 36&quot; o.c. from 2&quot; concrete slab over 3&quot; cellular steel deck supported by steel beam. (Three hour restrained and unrestrained.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Ceiling Weight:</td>
<td>2.5 psf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test:</td>
<td>UL R357/46, 7-25-57, UL Design A403</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO.</th>
<th>FC 4120</th>
<th>GENERIC</th>
<th>4 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEEL JOISTS, CONCRETE SLAB, METAL LATH, GYPSUM PLASTER</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/8&quot; 1:2:1:3 gypsum-vermiculite plaster applied over 3/4&quot; rib metal lath wire tied 5&quot; o.c. to open web steel joists 24&quot; o.c. supporting 9/16&quot; rib metal lath and 2½&quot; concrete slab.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approx. Ceiling Weight:</td>
<td>5 psf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test:</td>
<td>BMS 92/43, 10-7-42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This Space Left Blank
### FLOOR-CEILING SYSTEMS, STEEL FRAMED, WOOD FLOOR

#### GA FILE NO. FC 4340

**Gypsum Wallboard, Steel Channel Joists, Plywood Floor**

Base layer 1/2" type X gypsum wallboard applied at right angles to resilient furring channels 16" o.c. with 1 1/4" type S drywall screws 12" o.c. Resilient furring channels applied at right angles to channel shaped, minimum 6" deep, 18 gage galvanized steel joists 16" o.c. with 3/4" Type S-12 drywall screws. Face layer 1/8" type X gypsum wallboard applied at right angles to channels with end joints located midway between channels. Face layer attached to channels with 1 1/4" Type S drywall screws 12" o.c. End joints attached to base layer with 1 1/2" Type G screws 12" o.c. placed 1 1/2" back from either side of end joints. Joints offset 24" from base layer joints. 3/8" glass fiber batt insulation in joint space. Floor of 1/4" T & G edge plywood applied at right angles to joists with 1 1/4" No. 10 bugle head screws, pilot tip 5" o.c. and end joints and 12" o.c. at intermediate joists. STC tested with 1/4" carpet applied over a 3/8" foam pad.

**1 Hour Fire**

**50 to 54 STC Sound**

- Approx. Ceiling
- Weight: 4 psf
- Fire Test: NRCC A-4219.A, 4-29-98, Assembly FF-23
- Sound Test: NRCC B-3163.2, 3-15-01
- IIC & Test: 89; NRCC B-3163.2, 3-15-01

#### GA FILE NO. FC 4370

**Gypsum Wallboard, Steel Channel Joists, Plywood Floor**

Base layer 1/2" type X gypsum wallboard applied at right angles to resilient furring channels 16" o.c. with 1 1/4" type S drywall screws 12" o.c. Resilient furring channels applied at right angles to channel shaped, minimum 6" deep, 18 gage galvanized steel joists 16" o.c. with 3/4" Type S-12 drywall screws. Face layer 1/8" type X gypsum wallboard applied at right angles to channels with end joints located midway between channels. Face layer attached to channels with 1 1/4" Type S drywall screws 12" o.c. End joints attached to base layer with 1 1/2" Type G screws 12" o.c. placed 1 1/2" back from either side of end joints. Joints offset 24" from base layer joints. 3/4" glass fiber batt insulation in joint space. Floor of 1/4" T & G edge plywood applied at right angles to joists with 1 1/4" No. 10 bugle head screws, pilot tip 5" o.c. and end joints and 12" o.c. at intermediate joists.

**1 Hour Fire**

**45 to 49 STC Sound**

- Approx. Ceiling
- Weight: 4 psf
- Fire Test: NRCC A-4219.A, 4-29-98, Assembly FF-23
- Sound Test: NRCC B-3163.1, 3-15-01
- IIC & Test: 39; NRCC B-3163.1, 3-15-01

#### GA FILE NO. FC 4490

**Steel Channel Joists, Gypsum Wallboard**

Base layer 5/8" type X gypsum wallboard applied at right angles to channel shaped steel joists 24" o.c. with 1 1/4" type S drywall screws 24" o.c. Face layer 3/8" type X gypsum wallboard or gypsum veneer base applied at right angles to joists with 1 1/8" type S drywall screws 12" o.c. at joints and intermediate joints and 1 1/2" Type G drywall screws 12" o.c. placed 2" back on either side of end joints. Joints offset 24" from base layer joints. Steel joints supporting 5/8" wood structural panels applied at right angles to joists with screws. Ceiling provides one hour fire resistance protection for framing.

**1 Hour Fire**

**35 to 39 STC Sound**

- Approx. Ceiling
- Weight: 5 psf
- Fire Test: FM FC 172, 2-25-72; ITS, 8-6-98
- Sound Test: Estimated
FLOOR-CEILING SYSTEMS, STEEL FRAMED, WOOD FLOOR

GA FILE NO. FC 4502

STEEL CHANNEL JOISTS, PLYWOOD FLOOR,
GYPSUM WALLBOARD CEILING

Base layer 1/4" proprietary type X gypsum wallboard applied at right angles to channel shaped, minimum 7" deep, 18 gage galvanized steel joints 24" o.c. with 1" Type S-12 drywall screws 8" o.c. at butt joints and 12" o.c. at intermediate joints. Face layer 1/2" proprietary type X gypsum wallboard applied at right angles to joints with 1/2" Type G drywall screws at butt joints between joints and 1/4" Type S-12 drywall screws 12" o.c. at intermediate joints. Joints offset from base layer joints. Steel joints supporting 1/2" T & G edge plywood floor applied at right angles to joints with 1 1/4" No. 6-20 S-12 point screws 6" o.c. to floor perimeter and end joints and 10" o.c. at intermediate joints. For alternate floor systems, consult manufacturer.

PROPRIETARY GYPSUM BOARD

American Gypsum Company - 1/2" FireBlog® TYPE C
BPB America Inc. - 1/2" ProRock® Type C Gypsum Panels
G-P Gypsum - 1/2" ToughRock® Fireguard® C
LaFargeNorth America Inc. - 1/2" Firecheck® Type C
National Gypsum Company - 1/2" Gold Bond® Brand FIRE-SHIELD C™
Gypsum Wallboard
PABCO Gypsum - 1/2" FLAME CURB® Super "C"™
Temple-Inland Forest Products Corporation - 1/2" TG-C
United States Gypsum Company - 1/2" SHEETROCK® Brand FIRECODE® C
Core Gypsum Panels

GA FILE NO. FC 4503

GYPSUM WALLBOARD, STEEL CHANNEL JOISTS,
PLYWOOD FLOOR

Base layer 1/4" type X gypsum wallboard applied at right angles to channel shaped, minimum 6" deep, 18 gage galvanized steel joints 24" o.c. with 1" Type S-12 drywall screws 24" o.c. Face layer 1/4" type X gypsum wallboard applied at right angles to joints with 1/4" Type S-12 drywall screws 12" o.c. at end joints and Intermediate joints and 1/2" Type G screws 12" o.c. placed 3" back from either side of end joints and staggered 6" from Type S-12 screws at joint. Joints offset 24" from base layer joints.

Floor of 3/4" T & G edge plywood applied at right angles to joints with 1 1/4" No. 6 Phillips head screws with 3/4" pilot tip 6" o.c. and end joints and 12" o.c. at Intermediate joints.

GA FILE NO. FC 4504

GYPSUM WALLBOARD, STEEL CHANNEL JOISTS,
WOOD STRUCTURAL PANEL FLOOR

Base layer 1/2" type X gypsum wallboard applied at right angles to channel shaped, minimum 8" deep, 16 gage galvanized steel joints 16" o.c. with 1/4" Type S-12 drywall screws 12" o.c. Base layer butt joints staggered 48" in adjacent courses. Face layer 1/4" type X gypsum wallboard applied at right angles to joints with end joints located midway between joints. Face layer attached to joints with 1/4" Type S-12 drywall screws 12" o.c. End joints attached to base layer with 1/2" Type G screws 12" o.c. placed 1/2" back from either side of end joints. Face layer edge joints offset 24" from base layer edge joints. Face layer end joints offset 36" from base layer end joints. Joints supporting 3/4" nominal wood structural panel floor with long edges T & G attached at right angles to joints with 1 1/4" No. 10 bugle head screws with 3/4" pilot tip 8" o.c. at end joints and 12" o.c. at intermediate joints.

1 HOUR FIRE

Approx. Ceiling
Weight: 4 psf
Fire Test: FM FC 205-1, 11-16-73

1 HOUR FIRE

Approx. Ceiling
Weight: 4 psf
Fire Test: NRCC-8-4216.1, 3-3-05, Assembly FF-51

*Contact the manufacturer for more detailed information on proprietary products.
### FLOOR-CEILING SYSTEMS, STEEL FRAMED, WOOD FLOOR

#### STEEL TRUSSES, RESILIENT CHANNELS, MINERAL OR GLASS

**FIBER INSULATION, GYPSUM WALLBOARD**

One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels with 1 1/4" Type S drywall screws 12" o.c. Resilient channels spaced 12" o.c. when insulation is used or 16" o.c. when no insulation is used. Gypsum board end joints attached with screws 12" o.c. to additional pieces of channel 60" long located 3" back on either side of end joint. Resilient channels applied at right angles to bottom chord of light-gage steel trusses 48" o.c. with 1/2" Type S-12 screws. Optional glass fiber or mineral fiber batt or loose fill insulation applied directly over gypsum board. Trusses supporting 2 1/2" wood structural panel subfloor applied at right angles to trusses with construction adhesive and mechanical fasteners 12" o.c. and 4 1/2" wood structural panel underlayment applied at right angles to trusses with mechanical fasteners 12" o.c. Joints staggered between underlayment and subfloor.

**PROPRIETARY GYPSUM BOARD**

National Gypsum Company - 5/8" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard

**Approx. Ceiling Weight:** 3 psf

**Fire Test:** UL R3501, 01NK49964, 9-5-02

**UL Design** L565

#### WOOD FLOOR, STEEL CHANNEL JOISTS, GYPSUM WALLBOARD, RIGID FURRING CHANNELS

Base layer 5/8" type X gypsum wallboard applied at right angles to channel shaped, minimum 8" deep, 18 gage galvanized steel joists 24" o.c. with 1 1/4" Type S-12 drywall screws 12" o.c. Second layer 5/8" type X gypsum wallboard applied at right angles to joints with 1 1/4" Type S-12 drywall screws 12" o.c. Second layer joints offset 24" from base layer joints. Third layer 5/8" type X gypsum wallboard applied at right angles to joints with 2 1/8" Type S-12 drywall screws 12" o.c. Third layer joints offset 24" from second layer joints. Hat-shaped rigid furring channels 24" o.c. applied at right angles to joints over third layer with two 2 1/8" long Type S-12 drywall screws at each joint. Face layer 5/8" type X gypsum wallboard applied at right angles to furring channels with 1 1/4" Type S drywall screws 12" o.c. Joints supporting ¾" T & G edge plywood floor applied at right angles to joints with 10x1 1/2" screws 12".

**Approx. Ceiling Weight:** 12 psf

**Fire Test:** UL R4024, 02NK04478, UL Design L568; ULC Design M514

---

*Contact the manufacturer for more detailed information on proprietary products.*
### FLOOR-CEILING SYSTEMS, WOOD FRAMED

#### GA FILE NO. FC 5000 - GENERIC

**WOOD I-JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS**

Base layer ½" Type X gypsum wallboard applied at right angles to resilient channels 16" o.c. with 1½" Type S drywall screws 12" o.c. Resilient channels applied at right angles to minimum ¾" deep wood I-Joists, with minimum 1¼" deep x ½" wide flanges and minimum ¾" web, 24" o.c. with 1½" Type W drywall screws. Face layer ½" Type X gypsum wallboard applied at right angles to channels with 1½" Type S drywall screws 12" o.c. Face layer end joints located midway between channels and attached to base layer with 1½" Type G screws 12" o.c. Edge joints offset 24" from base layer edge joints. Wood I-Joists supporting ¾" oriented strand board applied at right angles to I-Joists with 8d common nails 12" o.c.

STC and IIC tested with ¾" gypsum concrete underlayment and ¾" glass fiber insulation in joint spaces. Third layer of ½" or ¾" Type X gypsum wallboard required to achieve 1 hour fire resistance rating when glass fiber insulation is used.

#### GA FILE NO. FC 5011 - PROPRIETARY

**WOOD I-JOISTS, WOOD STRUCTURAL PANELS, GYPSUM FLOOR TOPPING, RESILIENT CHANNELS, GLASS FIBER BATT OR LOOSE FILL INSULATION, GYPSUM WALLBOARD**

Base layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. (16" o.c. when insulation is used) with 1½" Type S drywall screws 16" o.c. Gypsum board end joints located midway between continuous channels and attached with screws 8" to additional pieces of channel 60" long located 3" back on either side of end joint. Resilient channels applied at right angles to minimum 10" deep wood I-Joists spaced a maximum of 19" o.c. with 1½" Type S drywall screws. Face layer ½" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels ¾" Type S drywall screws 8" o.c. and 1½" Type G screws 8" o.c. at the butt joints located mid-span between the resilient channels. Glass fiber insulation secured to subfloor or loose fill insulation applied directly over gypsum board. Wood I-Joists supporting ¾" wood structural panel subfloor applied at right angles to joists with construction adhesive and 6d ring shank nails 12" o.c. Minimum ¾" proprietary gypsum floor topping applied over subfloor.

STC rated with I-Joists spaced 24" o.c., ¾" glass fiber insulation in joint spaces, proprietary gypsum floor topping poured over ¾" proprietary sound reduction mat, and with finish flooring of sheet vinyl, engineered wood laminate, and ceramic tile. (STC 64 when sheet vinyl or engineered wood laminate is applied to floor; STC 65 when tested with ceramic tile applied to floor.)

**PROPRIETARY GYPSUM COMPONENTS**

- ⅝ SHEETROCK® Brand FIRECODE® C Core Gypsum Panels
- LEVELROCK® Brand Floor Underlayment

#### GA FILE NO. FC 5104 - PROPRIETARY

**GYPSUM WALLBOARD, RESILIENT CHANNELS. WOOD JOISTS**

One layer ¾" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. with 1½" Type S drywall screws 12" o.c. Gypsum board end joints located midway between continuous channels and attached to additional pieces of channel 60" long with screws 2" o.c. Resilient channels applied at right angles to 2 x 10 wood joists 16" o.c. with 6d common nails. Wood Joists supporting ¾" plywood and 1" proprietary sanded gypsum underlayment.

STC rated with ¾" glass fiber insulation in joint spaces and with carpet and pad. Second layer of ¾" or ¾" Type X gypsum wallboard required to achieve 1 hour fire resistance rating when glass fiber insulation is used.

**PROPRIETARY GYPSUM BOARD**

- G-P Gypsum
  - ¾" DenseArm® Plus Fireguard® C Interior Guard

*Contact the manufacturer for more detailed information on proprietary products.*
### FLOOR-CEILING SYSTEMS, WOOD FRAMED

#### GA FILE NO. FC 5105

**Proprietary**

<table>
<thead>
<tr>
<th>Fire Resistance</th>
<th>Sound Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Hour</td>
<td>55 to 59 STC</td>
</tr>
</tbody>
</table>

**Gypsum Wallboard, Resilient Channels, Wood Joists**

One layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. with 1 1/4" Type S drywall screws 12" o.c. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 54" long with screws at 12" o.c. Resilient channels applied at right angles to 2 x 10 wood joists 16" o.c. with 8d common nails. Wood joists supporting 1/2" plywood and 1" proprietary covered gypsum underlayment.

STC rated with 3/4" glass fiber insulation in joint spaces and with carpet and pad. Second layer of 1/2" or 5/8" type X gypsum wallboard required to achieve 1 hour fire resistance rating when glass fiber insulation is used.

**Proprietary Gypsum Board**

- American Gypsum Company: 1/2" FireBlock® Type C
- BPB America Inc.: 1/2" ProRock® Type C Gypsum Panels
- G-P Gypsum: 1/2" ToughRock® Fireguard® C
- Lafarge North America Inc.: 1/2" Firecheck® Type C
- National Gypsum Company: 1/2" Gold Bond® Brand FIRE-SHIELD® Gypsum Wallboard
- PACCO Gypsum: 1/2" FLAME CURB® Super "C"g
- Temple-Inland Forest Products Corporation: 3/8" T-G-C

**GA FILE NO. FC 5106**

**Generic**

<table>
<thead>
<tr>
<th>Fire Resistance</th>
<th>Sound Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Hour</td>
<td>55 to 59 STC</td>
</tr>
</tbody>
</table>

**Wood Joists, Gypsum Wallboard, Resilient Channels**

- Base layer 1/2" type X gypsum wallboard applied at right angles to resilient channels 16" o.c. with 1 1/4" Type S drywall screws 12" o.c. Resilient channels applied at right angles to minimum 3/4" deep wood joists, with minimum 1 1/4" deep x 1 1/2" wide flanges and minimum 3/4" webs, 24" o.c. with 1 1/4" Type W drywall screws. Face layer 1/2" type X gypsum wallboard applied at right angles to channels with 1 1/4" Type S drywall screws 12" o.c. Face layer and joints located midway between channels and attached to base layer with 1 1/4" Type G screws 12" o.c. Edge joints allow 24" from base layer edge joints. Wood joists supporting 1/2" or 5/8" type X gypsum wallboard required to achieve 1 hour fire resistance rating when glass fiber insulation is used.

**GA FILE NO. FC 5107**

**Proprietary**

<table>
<thead>
<tr>
<th>Fire Resistance</th>
<th>Sound Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Hour</td>
<td>55 to 59 FSTC</td>
</tr>
</tbody>
</table>

**Gypsum Wallboard, Resilient Channels, Wood Joists, Gypsum Floor Underlayment**

One layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. with 1 1/4" Type S drywall screws 12" o.c. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 54" long with screws at 12" o.c. Resilient furring channels applied at right angles to 2 x 10 wood joists 16" o.c. with 1 1/4" Type W screws. Wood joists supporting 1/2" plywood subfloor and 3/4" 1000 psf sand covered gypsum floor underlayment.

**Proprietary Gypsum Board**

- American Gypsum Company: 1/2" FireBlock® Type C
- BPB America Inc.: 1/2" ProRock® Type C Gypsum Panels
- G-P Gypsum: 1/2" ToughRock® Fireguard® C
- Lafarge North America Inc.: 1/2" Firecheck® Type C
- National Gypsum Company: 1/2" Gold Bond® Brand FIRE-SHIELD® Gypsum Wallboard
- PACCO Gypsum: 1/2" FLAME CURB® Super "C"g
- Temple-Inland Forest Products Corporation: 3/8" T-G-C
- United States Gypsum Company: 1/2" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels

*Contact the manufacturer for more detailed information on proprietary products.
### FLOOR-CEILING SYSTEMS, WOOD FRAMED

**GA FILE NO. FC 5109**

**WOOD JOISTS, WOOD STRUCTURAL PANELS, GYPSUM WALLBOARD**

One layer 4"* proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. (16" o.c. when half wall insulation is used) with 1/2" Type S drywall screws 12" o.c. Gypsum board end joints located midew between continuous channels and attached with screws 6" to additional pieces of channel 60" long located 3" back on either side of end joint. Resilient channels applied at right angles to nominal 2 x 10 wood joists spaced a maximum of 24" o.c. with 1/2" Type S drywall screws. Glass or mineral fiber batt insulation stapled to subfloor or on loose fill insulation applied directly over gypsum board. Wood joists supporting 1/4" wood structural panel subfloor applied at right angles to joists with construction adhesive and 6d ring Shank nails 12" o.c. Minimum 1/2" proprietary gypsum floor taping applied over subfloor.

**STC and IIC rated with both joists and resilient channels spaced 16" o.c., 3/8" glass fiber insulation in joist spaces, 1/2" proprietary gypsum floor taping, and finish flooring of C&P, sheet vinyl, and engineered wood laminate.**

**PROPRIETARY GYPSUM COMPONENTS**

United States Gypsum Company
- 1/2" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels
- LEVELROCK® Brand Floor Underlayment

**GA FILE NO. FC 5110**

**WOOD JOISTS, GYPSUM LATH, GYPSUM PLASTER, RESILIENT CHANNELS**

1/2" 12:1:3 gypsum-sand plaster applied over 1/2" type X gypsum lath applied at right angles to resilient furring channels 16" o.c. with three 1/2" Type S drywall screws at each furring channel 3" wide woven wire strips applied over gypsum lath and parallel to and directly over resilient channels with 1/2" Type S drywall screws with diamond washers 15" o.c. Resilient channels applied at right angles to 2 x 10 wood joists 16" o.c. with 6d coated nails, 17/8" long, 0.0915" Shank, 1/4" heads. Wood joists supporting 1" nominal wood subfloor and 1" nominal wood finish floor.

Sound tested with 3" glass fiber insulation batts in joist spaces, sound deadening felt, and carpet and pad. A face layer of 1/2" or 5/8" type X gypsum wallboard required to achieve 1 hour fire resistance rating when glass fiber insulation is used.

---

*Contact the manufacturer for more detailed information on proprietary products.*
### FLOOR-CEILING SYSTEMS, WOOD FRAMED

<table>
<thead>
<tr>
<th>GA FILE NO. FC 5111</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
<th>50 to 54 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOOD I-JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/2&quot; type X gypsum wallboard applied at right angles to resilient channels 16&quot; o.c. with 1 1/4&quot; type S drywall screws 12&quot; o.c. Resilient channels applied at right angles to minimum 9/16&quot; deep wood I-Joists, with minimum 1 1/4&quot; deep x 1 1/4&quot; wide flanges and minimum 3/8&quot; webs, 24&quot; o.c. with 1 1/4&quot; Type W drywall screws. Face layer 9/16&quot; type X gypsum wallboard applied at right angles to channels. Type S drywall screws 12&quot; o.c. Face layers and joints located midway between channels and attached to base layer with 1 1/2&quot; Type S screws 12&quot; o.c. Edge joints offset 24&quot; from base layer edge joints. Wood I-Joists supporting 3/8&quot; oriented strand board applied at right angles to I-Joists with 8d common nails 12&quot; o.c.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STC and IIC tested with 40 oz carpet over 1/4&quot; foam pad.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. FC 5112</th>
<th>PROPRIETARY*</th>
<th>1 HOUR FIRE</th>
<th>50 to 54 STC SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>WOOD I-JOISTS, WOOD STRUCTURAL PANELS, GYPSUM FLOOR TOPPING, RESILIENT CHANNELS, GLASS OR MINERAL FIBER BATT OR LOOSE FILL INSULATION, GYPSUM WALLBOARD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 3/4&quot; proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient framing channels 24&quot; o.c. (16&quot; o.c. when batt insulation is used; 12&quot; o.c. when loose fill insulation is used) with 1&quot; Type S drywall screws 12&quot; o.c. Gypsum board and joints located midway between continuous channels and attached with screws 6&quot; to additional pieces of channel 60&quot; long located 3&quot; back on either side of end joint. Resilient channels applied at right angles to nominal 2 x 10 wood joists spaced a maximum of 24&quot; o.c. with 1 1/4&quot; Type S drywall screws. Glass or mineral fiber batt insulation stapled to subfloor or or loose fill insulation applied directly over gypsum board. Wood joists supporting 1 1/2&quot; wood structural panel subfloor applied at right angles to joists with construction adhesive and 6d ring Shank nails 12&quot; o.c. Minimum 1/2&quot; proprietary gypsum floor topping applied over subfloor.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STC and IIC rated with both joists and resilient channels spaced 16&quot; o.c., 3/16&quot; glass fiber insulation in joist spaces, 1&quot; proprietary gypsum floor topping poured over 1/4&quot; proprietary sound reduction mat, and with finish flooring of C&amp;P, sheet vinyl, engineered wood laminate, and ceramic tile.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Proprietary Gypsum Components**
- 3/4" SHEETROCK® Brand F/RECO/DE® C Core Gypsum Panels
- LEVELROCK® Brand Floor Underlayment

### Approx. Ceiling Weight
- 5 psf

### Fire Test
- NRCC A-4440.1 (Revised), 6-24-05

### Sound Test
- NRCC B-3150.2, 6-30-00
- IIC & Test:
  - (68 C & P) NRCC B-3150.2, 6-30-00

---

*Contact the manufacturer for more detailed information on proprietary products.*
### FLOOR-CeILING SYSTEMS, WOOD FRAMED

#### GA FILE NO. FC 5115

**WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS,**
**GLASS FIBER INSULATION**

One layer ¾" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. with 1" Type S drywall screws 12" o.c. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 54" long with screws 12" o.c. Resilient furring channels applied at right angles to 2 x 10 wood joints 16" o.c. with 1½" Type W drywall screws. Wood joints supporting ¾" interior plywood with exterior glue subfloor and ½" perlite-sand concrete reinforced with No. 19 SWG galvanized hexagonal wire mesh. 3" glass fiber insulation 0.90pcf in joint space stapled to subfloor.

**PROPRIETARY GYPSUM BOARD**
- ½" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels

<table>
<thead>
<tr>
<th>Approx. Ceiling</th>
<th>Weight: 2 pcf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Test:</td>
<td>UL R3660-7, 5-1-70; UL Design LS16</td>
</tr>
<tr>
<td>Sound Test:</td>
<td>KAL L 224-28-65, 3-30-65</td>
</tr>
<tr>
<td>IIC &amp; Test:</td>
<td>(74 C &amp; P) KAL L 224-27-65, 3-30-65</td>
</tr>
</tbody>
</table>

#### GA FILE NO. FC 5116

**WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS,**
**GLASS FIBER INSULATION**

One layer ¾" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. with 1" Type S drywall screws 12" o.c. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 54" long with screws 12" o.c. Resilient furring channels applied at right angles to 2 x 10 wood joints 16" o.c. with 1½" Type W drywall screws. Wood joints supporting ¾" interior plywood with exterior glue subfloor and ½" perlite-sand concrete reinforced with No. 19 SWG galvanized hexagonal wire mesh. 3" glass fiber insulation 0.90pcf in joint space stapled to subfloor.

**PROPRIETARY GYPSUM BOARD**
- ¼" FireBloc® Type C
- ¼" ProRock® Type C Gypsum Panels
- ½" ToughRock® Fireguard® C
- ½" Fireblock® Type C
- ½" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard
- ½" FLAME CURR®D. Super C™
- ½" TG-C

<table>
<thead>
<tr>
<th>Approx. Ceiling</th>
<th>Weight: 2 pcf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Test:</td>
<td>UL R3453-7, 5-1-70; Based on UL R3660-7, 5-1-70</td>
</tr>
<tr>
<td>Sound Test:</td>
<td>KAL L 224-28-65, 3-30-65</td>
</tr>
<tr>
<td>IIC &amp; Test:</td>
<td>(74 C &amp; P) KAL L 224-27-65, 3-30-65</td>
</tr>
</tbody>
</table>

#### GA FILE NO. FC 5120

**WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS,**
**GLASS FIBER INSULATION**

One layer 1½" Type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. with 1" Type S drywall screws 8" o.c. In ends and 12" o.c. at intermediate furring channels. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 64" long with screws 8" o.c. Resilient furring channels applied at right angles to 2 x 10 wood joints 16" o.c. with 6d coated nails, 1½" long, 0.085" shank, ¼" heads, two per joint. Wood joints supporting ¾" interior plywood with exterior glue subfloor and ½" perlite board, 1.5 pcf. 3½" glass fiber insulation bails, 0.7 pcf, friction fit in joint cavities supported alternately every 12" by wire rods and resilient furring channels.

Sound tested with carpet and pad and with insulation stapled to joists.

*Contact the manufacturer for more detailed information on proprietary products.
WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS

One layer 1/2" type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. with 1/4" Type S drywall screws 12" o.c. Gypsum board end joints located midway between continuous channels and attached to additional places of channel 54" long with screws 12" o.c. Resilient furring channels applied at right angles to 2 x 10 wood joists 16" o.c. with 1/4" Type W drywall screws. Wood joints supporting 1" nominal T & G wood subfloor and 1" nominal wood finish floor, or 5/8" plywood finished floor with long edges T & G and 1/2" interior plywood with exterior glue subfloor perpendicular to joints with joints staggered.

Approx. Ceiling
Weight: 3 psf
Fire Test: UL R1319-65, 11-16-64, UL Design LS14
Sound Test: CK 6512-6, 7, 4-15-65

GA FILE NO. FC 5241

WOOD I-JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS

Base layer 1/2" type X gypsum wallboard applied at right angles to resilient channels 16" o.c. with 1/4" Type S drywall screws 12" o.c. Resilient channels applied at right angles to minimum 9/16" deep wood I-joists, with minimum 1/4" deep x 1/2" wide flanges and minimum 3/4" webs, 24" o.c. with 1/4" Type W drywall screws. Face layer 1/2" type X gypsum wallboard applied at right angles to channels with 1/4" Type S drywall screws 12" o.c. Face layer end joints located midway between channels and attached to base layer with 1/2" Type G screws 12" o.c. Edge joints offset 24" from base layer edge joints. Wood I-joints supporting 5/8" oriented strand board applied at right angles to I-joints with 8d common nails 12" o.c.

Approx. Ceiling
Weight: 5 psf
Fire Test: NRC B-4440.1 (Revised), 6-24-97
Sound Test: NRC B-3150.1, 5-30-00
IIC & Test: 40 (68 C & P)
NRC B-3150.1, 6-30-00;
NRC B-3150.2, 6-30-00

GA FILE NO. FC 5242

WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS

One layer 1/2" type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. with 1" Type S drywall screws 11" o.c. Gypsum board end joints located midway between continuous channels and attached to additional places of channel 54" long with screws 12" o.c. Resilient furring channels applied at right angles to 2 x 10 wood joists 16" o.c. with 1/4" Type W drywall screws or 6d common nails. Wood joints supporting 1" nominal T & G wood subfloor and 1" nominal wood finish floor, or 5/8" plywood finished floor with long edges T & G and 1/2" interior plywood with exterior glue subfloor perpendicular to joints with joints staggered.

Approx. Ceiling
Weight: 2 psf
Fire Test: UL R3543-8, 7-8-88, UL Design LS17
Sound Test: See FC 5240
(CK 6512-6, 7, 4-15-65)
### FLOOR-CEILING SYSTEMS, WOOD FRAMED

#### GA FILE NO. FC 5250

<table>
<thead>
<tr>
<th>WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>One layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24&quot; o.c. with 1&quot; Type S drywall screws 12&quot; o.c. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 60&quot; long with screws 12&quot; o.c. Resilient furring channels applied at right angles to 2 x 10 wood joists 18&quot; o.c. with 6d coated nails, 2 1/2&quot; long, 0.113&quot; shank, 1/2&quot; head. Wood joists supporting 1&quot; nominal wood subfloor and 1&quot; nominal wood finish floor, or 3/4&quot; plywood finished floor with long edges T &amp; G and 1/2&quot; interior plywood with exterior glue subfloor perpendicular to joists with joints staggered.</td>
</tr>
<tr>
<td><strong>Approx. Ceiling Weight:</strong> 2 psf</td>
</tr>
<tr>
<td><strong>Fire Test:</strong> UL R2717-29, 1-24-64, UL Design L503, ULC Design M501</td>
</tr>
<tr>
<td><strong>Sound Test:</strong> RAL TL64-155, 2-7-64</td>
</tr>
<tr>
<td><strong>IIC &amp; Test:</strong> 39 (67 C &amp; P) Set FC 5240 (CK 6512-6, 4-15-66)</td>
</tr>
</tbody>
</table>

#### GA FILE NO. FC 5300

<table>
<thead>
<tr>
<th>WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>One layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24&quot; o.c. with 1&quot; Type S drywall screws 12&quot; o.c. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 53&quot; long with screws 12&quot; o.c. Resilient furring channels applied at right angles to 2 x 10 wood joists 18&quot; o.c. with two 4d coated nails, 1 1/4&quot; long, 0.080&quot; shank, and 7/8&quot; head, per joint. Wood joists supporting 1&quot; nominal T &amp; G wood subfloor and 1&quot; nominal wood finish floor, or 3/4&quot; plywood finished floor with long edges T &amp; G and 1/2&quot; interior plywood with exterior glue subfloor perpendicular to joists with joints staggered.</td>
</tr>
<tr>
<td><strong>Approx. Ceiling Weight:</strong> 2 psf</td>
</tr>
<tr>
<td><strong>Fire Test:</strong> UL R3501-29, 3-23-64, UL Design L515</td>
</tr>
<tr>
<td><strong>Sound Test:</strong> NGC 4010, 3-21-66 (Rev. 12-23-70)</td>
</tr>
<tr>
<td><strong>IIC &amp; Test:</strong> 38 (63 C &amp; P) NGC 5016, 3-17-66</td>
</tr>
</tbody>
</table>

#### GA FILE NO. FC 5310

<table>
<thead>
<tr>
<th>WOOD JOISTS, GYPSUM WALLBOARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>One layer 3/8&quot; type X gypsum wallboard or gypsum veneer base applied at right angles to rigid furring channels 24&quot; o.c. with 1&quot; Type S drywall screws 12&quot; o.c. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 60&quot; long with screws 12&quot; o.c. Rigid furring channels applied at right angles to 4 x 10 or double 2 x 10 wood joists 48&quot; o.c. with two 1 1/4&quot; Type S drywall screws at each joint. Wood joists supporting 1 1/4&quot; T &amp; G plywood floor.</td>
</tr>
<tr>
<td><strong>Approx. Ceiling Weight:</strong> 2.5 psf</td>
</tr>
<tr>
<td><strong>Fire Test:</strong> UL R1319-47, 5-8-63, UL Design L508</td>
</tr>
<tr>
<td><strong>Sound Test:</strong> Estimated</td>
</tr>
</tbody>
</table>
### FLOOR-CEILING SYSTEMS, WOOD FRAMED

#### GA FILE NO. FC 5406

**WOOD JOISTS, GYPSUM WALLBOARD**

Base layer 3/8" type X gypsum wallboard applied at right angles to 2 x 10 wood joists 24" o.c. with 1/2" Type W or S drywall screws 24" o.c. Face layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to joists with 1/2" Type W or S drywall screws 12" o.c. at joints and intermediate joists and 1 1/2" Type G drywall screws 12" o.c. placed 2" back on either side of end joints. Joints offset 24" from base layer joints. Wood joists supporting 1/2" plywood with exterior glue applied at right angles to joists with 8d nails. Ceiling provides one hour fire resistance protection for framing, including trusses.

- **Approx. Ceiling Weight:** 5 psf
- **Fire Test:** FM FC 172, 2-25-72; ITS, 8-6-98
- **Sound Test:** Estimated

#### GA FILE NO. FC 5407

**WOOD I-JOISTS, GYPSUM WALLBOARD**

Base layer 5/8" type X gypsum wallboard applied at right angles to wood I-joists 24" o.c. with 1 1/4" Type W or S drywall screws 24" o.c. Face layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to I-joists with 1/2" Type W or S drywall screws 12" o.c. at joints and intermediate I-joists and 1 1/2" Type G drywall screws 12" o.c. placed 2" back on either side of end joints. Joints offset 24" from base layer joints. Wood I-joists supporting 1/2" wood structural panels applied at right angles to joists with 8d nails. Ceiling provides one hour fire resistance protection for I-joists.

- **Approx. Ceiling Weight:** 5 psf
- **Fire Test:** FM FC 172, 2-25-72; ITS, 8-6-98
- **Sound Test:** Estimated

#### GA FILE NO. FC 5488

**WOOD TRUSSES, GYPSUM WALLBOARD**

Base layer 3/8" type X gypsum wallboard applied at right angles to parallel chord wood trusses 24" o.c. with 1 1/4" Type W or S drywall screws 24" o.c. Face layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to trusses with 1 1/4" Type W or S drywall screws 12" o.c. at joints and intermediate trusses and 1 1/2" Type G drywall screws 12" o.c. placed 2" back on either side of end joints. Joints offset 24" from base layer joints. Trusses supporting 1/2" wood structural panels applied at right angles to trusses with 8d nails. Ceiling provides one hour fire resistance protection for trusses.

- **Approx. Ceiling Weight:** 5 psf
- **Fire Test:** FM FC 172, 2-25-72; ITS, 8-6-98
- **Sound Test:** Estimated
<table>
<thead>
<tr>
<th>Wood Joists, Gypsum Wallboard</th>
<th>1 Hour Fire</th>
<th>35 to 39 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer ⅝&quot; type X gypsum wallboard or gypsum veneer base applied at right angles to 2 x 10 wood joists 16&quot; o.c. with 5d nails, ⅛&quot; lag, 0.089&quot; shank, ⅛&quot; heads, ⅛&quot; c.c. Nails placed ⅞&quot; from board edge joints and 1½&quot; from board end joints. Wood joists supporting 1½&quot; nominal T &amp; G wood subfloor and 1½&quot; nominal wood finish floor, or ⅞&quot; plywood finished floor with long edges T &amp; G and 1⅛&quot; interior plywood with exterior glue subfloor perpendicular to joists with joints staggered.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Sound Test: NGC 4024, 7-13-66 | IIC & Test: 32 (66 C & P) NGC 932, 7-19-66 |

---

<table>
<thead>
<tr>
<th>Wood Joists, Gypsum Wallboard, Resilient Channels</th>
<th>1 Hour Fire</th>
<th>35 to 39 STC Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Proprietary</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer ⅝&quot; proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 16&quot; o.c. with ⅛&quot; Type S drywall screws ⅛&quot; o.c. Gypsum board end joints located midway between continuous channels and attached to additional places of channel 72&quot; long with screws ⅛&quot; o.c. Resilient furring channels applied at right angles to 2 x 10 wood joists 24&quot; o.c. with 6d coated nails, ⅛&quot; lag, 0.082&quot; shank, ⅛&quot; heads. Wood joists supporting ⅝&quot; nominal interior plywood with exterior glue T &amp; G subfloor perpendicular to joists with joints staggered. Underside T &amp; G joints covered between joint spaces with ⅝&quot; x 2⅞&quot; x ⅝&quot; type X gypsum wallboard buttons attached to flooring with 16 gauge x ⅛&quot; legs x ⅛&quot; crown staples spaced 7&quot; o.c. along each edge.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Approx. Ceiling Weight: 2.5 psf | Fire Test: UL R5229-2, 5-25-73, UL Design L513 |
| Sound Test: Estimated |

**Proprietary Gypsum Board**

- American Gypsum Company - ⅝" FireBloc® Type C
- BPB America Inc. - ⅝" ProRock® Type C Gypsum Panels
- G-P Gypsum - ⅝" ToughRock® Fireguard® C
- Lafarge North America Inc. - ⅝" Fireduce® Type C
- National Gypsum Company - ⅝" Gold Bond® Brand FIRE-SHIELD® Gypsum Wallboard
- PABCO Gypsum - ⅝" FLAME CURB® Super "C"
- Temple-Inland Forest Products Corporation - ⅝" TG-C
- United States Gypsum Company - ⅝" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels

*Contact the manufacturer for more detailed information on proprietary products.*
### FLOOR-CEILING SYSTEMS, WOOD FRAMED

#### GA FILE NO. FC 5420

**WOOD JOISTS, GYPSUM WALLBOARD**

One layer 4⁄8" type X gypsum wallboard or gypsum veneer base applied at right angles to 2 x 10 wood joists 16" o.c. with 6d coated nails, 17⁄8" long 0.0915" shank, 4⁄4" heads, 6" o.c. Wood joists supporting 1" nominal wood subfloor and 1" nominal wood finish floor, or 9⁄16" plywood finished floor with long edges T & G and 5⁄8" interior plywood with exterior glue subfloor perpendicular to joists with joints staggered.

- **Approx. Ceiling Weight:** 2.5 psf
- **Fire Test:**
  - UL R3501-5, 9, 7-15-52;
  - UL R1319-2, 3, 6-5-52;
  - UL Design L 501;
  - ULC Design M500
- **Sound Test:** See FC 9410
  - (NGC 4024, 7-13-66)
- **IIC & Test:**
  - 32 (66 C & P)
  - NGC 5032, 7-19-66

#### GA FILE NO. FC 5470

**WOOD JOISTS, GYPSUM LATH, GYPSUM PLASTER**

9⁄8" 1:2 gypsum-perlite plaster applied over 3⁄4" type X gypsum lath applied at right angles to 2 x 13 wood joists 16" o.c. with either blued lath nails, 1¼" long, 13 gauge shank, 5⁄8" heads or 16 gage staples, 1½" long, 5⁄16" crown, four fasteners per lath at each joist. Wood joists supporting 1" nominal T & G wood subfloor and 1" nominal wood finish floor.

- **Approx. Ceiling Weight:** 4 psf
- **Fire Test:** OSU T-2134-1.4-23-63
- **Sound Test:** Estimated

#### GA FILE NO. FC 5490

**WOOD JOISTS, GYPSUM LATH, GYPSUM PLASTER**

1½" 1:2 gypsum-sand plaster applied over 3⁄4" type X gypsum lath applied at right angles to 2 x 10 wood joists 15" o.c. with blued lath nails, 1½" long, 0.0915" shank, 4⁄4" heads, 4 nails per lath at each joist. Continuous stripping supporting gypsum lath under each joist with 2.5 lb. steel strip lath or equivalent wire lath nailed with 11 gage, 1½" long, 7⁄16" heads roofing nails, 6" o.c. Wood joists supporting 1" nominal T & G wood subfloor and 1" nominal wood finish floor.

- **Approx. Ceiling Weight:** 6 psf
- **Fire Test:**
  - SFT-6, 2-6-60; SFT-8, 4-9-60;
  - SFT-11, 10-4-60; SFT-12,
  - 10-22-60; SFT-13, 1-7-61
- **Sound Test:** Estimated
**FLOOR-CEILING SYSTEMS, WOOD FRAMED**

<table>
<thead>
<tr>
<th>GA FILE NO. FC 5509</th>
<th>PROPRIETARY*</th>
<th>1 HOUR FIRE</th>
</tr>
</thead>
</table>

**WOOD JOISTS, GLASS MAT GYPSUM SUBSTRATE**

One layer 3/4" proprietary type X gypsum substrate applied at right angles to 2 x 10 wood joists 16" o.c. with 6d coated nails, 1/4" long, 0.0615" shank, 3/8" heads, 6" o.c. Wood joists supporting 1" nominal wood subfloor and 1" nominal wood finish floor, or 3/4" plywood finished floor with long edges and 15/32" interior plywood with exterior glue subfloor perpendicular to joists with joints staggered.

**PROPRIETARY GYPSUM PANEL PRODUCT**

BPB Americas Inc.

- 3/8" ClassRoo® Sheathing Type X

Approx. Ceiling: 2.5 psf

Fire Test:
- UL R3660/R15187
- 01NK21103, 2-4-02
- UL Design L501

<table>
<thead>
<tr>
<th>GA FILE NO. FC 5510</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
</tr>
</thead>
</table>

**WOOD JOISTS, METAL LATH, GYPSUM PLASTER**

9/16" 1:2:1.3 gypsum-sand plaster applied over 3.4 lb. metal lath applied to 2 x 10 wood joists 16" o.c. with barbed roofing nails, 1¼" long, 0.120" shank, 3/8" heads, 6" o.c. Wood joists supporting 1" nominal T & G wood subfloor and 1" nominal wood finish floor.

Approx. Ceiling: 9 psf

Fire Test: BMS 92/42, 10-7-42

<table>
<thead>
<tr>
<th>GA FILE NO. FC 5511</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
</tr>
</thead>
</table>

**WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS**

One layer 3/4" type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 24" o.c. with 1" Type S drywall screws 12" o.c. Gypsum board end joints located midway between continuous channels and attached to additional pieces of channel 64" long with screws 12" o.c. Resilient furring channels applied at right angles to 2 x 10 wood joists 16" o.c. with two 5d coated nails, 1¼" long, 0.086" shank, 13/32" heads, per joint. Wood joists supporting 11/2" fiber decking 20" x 80", T & G four sides, 3 psf.

Approx. Ceiling: 3 psf

Fire Test: FM FC-77, 11-3-67

*Contact the manufacturer for more detailed information on proprietary products.*
## FLOOR-CEILING SYSTEMS, WOOD FRAMED

### GA FILE NO. FC 5512  |  GENERIC  |  1 HOUR FIRE

**GYPSUM BOARD, PARALLEL CHORD WOOD TRUSSES**

- **CEILING:** Base layer 1/2" type X gypsum wallboard or gypsum veneer base applied perpendicular to wood trusses 24" o.c. with 1 1/4" Type S drywall screws 24" o.c. Face layer 1/2" type X gypsum wallboard or gypsum veneer base applied perpendicular to trusses with 1 1/4" Type S drywall screws 12" o.c. and 1 1/2" Type G drywall screws 12" o.c. placed 3" back from either side of end joints. Joints offset 24" from base layer joints.

- **TRUSSES:** Chord and web members fabricated from 2 x 4 lumber with 20 gauge steel connector plates having a minimum length of 6 1/8". Plate design values based upon a safety factor of 4. Trusses have a minimum depth of 12".

- **FLOORING:** 7/16" T & G plywood with exterior glue applied at right angles to bottom of trusses with 6d common nails 6" o.c. Plywood and joints staggered 48".

**Approx. Ceiling**
- **Weight:** 4 psf
- **Fire Test:** FM FC214 - 1 hour, 7.6-78

### GA FILE NO. FC 5513  |  GENERIC  |  1 HOUR FIRE

**LIGHTWEIGHT CONCRETE, PLYWOOD, WOOD T-JOISTS, GYPSUM WALLBOARD**

- **BASE layer 1/2" type X gypsum wallboard applied at right angles to minimum 9 1/2" deep wood T-joists, with minimum 1 1/4" deep x 1 1/4" wide flanges and minimum 1/2" webs, 24" o.c. with 1 1/4" type W or S drywall screws 12" o.c. Face layer 1/2" type X gypsum wallboard applied at right angles to T-joists with 2" type W or S drywall screws 12" o.c. at intermediate T-joists, 8" o.c. at end joints, and 1 1/2" type G drywall screws 8" o.c. placed 8" back on either side of end joints. Joints offset 24" from base layer joints. Wood T-joists supporting 9/16" plywood with long edges T & G applied at right angles to T-joists with 6d common nails. 11/16" lightweight concrete poured over plywood.

**Approx. Ceiling**
- **Weight:** 5 psf
- **Fire Test:** FM JI. 2C927 AC, 9-29-78, FM Design FC-269

### GA FILE NO. FC 5514  |  PROPRIETARY*  |  1 HOUR FIRE

**WOOD TRUSSES, WOOD STRUCTURAL PANELS, GYPSUM FLOOR TOPPING, RESILIENT CHANNELS, GLASS FIBER INSULATION, CEILING DAMPER, GYPSUM WALLBOARD**

- **One layer 1/4" proprietary type X gypsum board or gypsum veneer base applied at right angles to resilient furring channels 12" o.c. with 1" Type S drywall screws 8" o.c. Gypsum board and joints attached with screws 8" o.c. to additional pieces of channel 60" long located 3" back on either side of end joint. Resilient channels applied at right angles to 12" deep parallel chord wood trusses 24" o.c. with 1 1/4" Type T or W screws. Glass fiber or mineral fiber batt or loose fill insulation applied directly over gypsum board. Trusses supporting 1/2" wood structural panel subfloor, long edges T & G, applied at right angles to trusses with construction adhesive and 6d ring Shank nails 12" o.c. Either 1/4" gypsum floor topping or 1/2" wood structural panel underlayment applied over subfloor. Optional ceiling damper (refer to manufacturer for information on the type of damper).**

**Proprietary Gypsum Board**
- **National Gypsum Company**
  - 9/16" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard

**Approx. Ceiling**
- **Weight:** 3 psf
- **Fire Test:** UL R3501, 09NK42688, 8-16-01, UL Design LS58; UL R3501, 4-11-01

---

*Contact the manufacturer for more detailed information on proprietary products.
**FLOOR-CEILING SYSTEMS, WOOD FRAMED**

### PROPRIETARY BOARD

**WOOD TRUSSES, GYPSUM WALLBOARD**

One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to rigid furring channels 24" o.c. with 1" Type S drywall screws 12" o.c. and located a minimum of 1½" from joints. Gypsum board end joints located midway between continuous channels and attached to additional pieces of channel 60" long with screws 12" o.c. Rigid furring channels applied at right angles to 12" deep parallel chord wood trusses 24" o.c. with double strand, 18 gage galvanized steel wire ties 48" o.c. Wood trusses supporting ¾" nominal interior plywood with exterior glue, T & G edges, applied at right angles to trusses with construction adhesive and 6d ring shank nails 12" o.c. Adhesive applied to each top chord and grooved edges of plywood. End joints staggered 48".

Consult gypsum board manufacturer for truss details.

**PROPRIETARY BOARD**

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Gypsum Company</td>
<td>5/8″ FireBlock® Type C</td>
</tr>
<tr>
<td>BPB America Inc.</td>
<td>5/8″ ProRoo® Type C Gypsum: Panels</td>
</tr>
<tr>
<td>G-P Gypsum</td>
<td>5/8″ ToughRock® Fireguard® C</td>
</tr>
<tr>
<td>Lataqua North America Inc.</td>
<td>5/8″ FireShield® Type C</td>
</tr>
<tr>
<td>PACO Gypsum</td>
<td>3/4″ FLAME CURB® Super C™ Type C</td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td>9/16″ TG-C</td>
</tr>
<tr>
<td>United States Gypsum Company</td>
<td>9/16″ SHEETROCK® Brand FIRECODE® C</td>
</tr>
<tr>
<td></td>
<td>Core Gypsum Panels</td>
</tr>
</tbody>
</table>

### 1 HOUR FIRE

**Approx. Ceiling Weight**: 3 psf  
**Fire Test**: UL R9500-1, 30NK15492, 2-2-81; UL R2717-81, 9-16-87; UL Design L528

---

### GA FILE NO. FC 5516

**PROPRIETARY BOARD**

**WOOD TRUSSES, GYPSUM WALLBOARD**

One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to rigid furring channels 24" o.c. with 1" Type S drywall screws 12" o.c. and 1½" from edges. Gypsum board end joints located midway between continuous channels and attached to additional pieces of channel 60" long with screws 12" o.c. Rigid furring channels applied at right angles to 12" deep parallel chord wood trusses 24" o.c. with double strand, 18 gage galvanized steel wire ties 48" o.c. Wood trusses supporting ¾" nominal interior plywood with exterior glue, T & G edges, applied at right angles to trusses with construction adhesive and 6d ring shank nails 12" o.c. at intermediate trusses or 6d ring shank nails 6" o.c. at end joints and 12" o.c. at end joints. Adhesive applied to each top chord and grooved edges of plywood. End joints staggered 48".

Consult gypsum board manufacturer for truss details.

**PROPRIETARY BOARD**

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Gypsum Company</td>
<td>5/8″ Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard</td>
</tr>
</tbody>
</table>

**Approx. Ceiling Weight**: 3 psf  
**Fire Test**: FM FC-448 (Method B), 2-24-88; Based on UL R501, 11-27-89; UL Design L528

---

### GA FILE NO. FC 5517

**PROPRIETARY BOARD**

**WOOD TRUSSES, GYPSUM WALLBOARD**

One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to 12" deep parallel chord wood trusses 24″ o.c. with 1/4″ Type S drywall screws 8" o.c. to trusses and to 2 x 4 wood blocking installed between trusses, centered behind gypsum board edges and secured at each end to the trusses by nail-attached 18 gage Z-shaped steel clips. Wood trusses supporting ¾" nominal interior plywood with exterior glue, T & G edges, applied at right angles to trusses with construction adhesive and 6d smooth shank nails 12" o.c. in field and 6" o.c. along ends. Adhesive applied to each top chord and grooved edges of plywood. End joints staggered 45°.

Consult gypsum board manufacturer for truss details.

**PROPRIETARY BOARD**

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Gypsum Company</td>
<td>9/16″ Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard</td>
</tr>
</tbody>
</table>

**Approx. Ceiling Weight**: 2.5 psf  
**Fire Test**: FM FC-442 (Method A), 2-17-88

---

*Contact the manufacturer for more detailed information on proprietary products.*
### FLOOR-CEILING SYSTEMS, WOOD FRAMED

#### GA FILE NO. FC 5518

**WOOD TRUSSES, WOOD STRUCTURAL PANELS, GYPSUM FLOOR TOPPING, RESILIENT CHANNELS, GLASS OR MINERAL FIBER BATT OR BLANKET INSULATION OR LOOSE FILL CELLULOSE INSULATION, CEILING DAMPER, GYPSUM WALLBOARD**

One layer 1/4" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 12" o.c. (12" o.c. when insulation batts or blankets are draped over resilient channels or when loose fill insulation is applied to the back of the ceiling membrane) with 1" Type S drywall screws 8" o.c. Gypsum board and joints located midway between continuous channels and attached to additional pieces of channel 60" long with screws 8" o.c. Resilient furring channels applied at right angles to minimum 12" deep parallel chord wood trusses 24" o.c. with 1/4" Type S drywall screws. Glass fiber or mineral fiber batt batt or blanket insulation draped over the resilient channels, or loose-fill cellulose insulation spray applied to the back of the ceiling membrane. Wood trusses supporting 21/2" nominal wood structural panel subfloor applied at right angles to trusses with construction adhesive and 6d ring shank nails 12" o.c. 1/4" proprietary gypsum floor topping applied over subfloor. Optional ceiling damper (refer to manufacturer for information on the type of damper).

**PROPRIETARY GYPSUM COMPONENTS**

- United States Gypsum Company
  - 1/4" SHEETROCK® Brand FIRECODE® C Corn Gypsum Panels
  - LEVELROCK® Brand Floor Underlayment

#### GA FILE NO. FC 5519

**WOOD TRUSSES, WOOD STRUCTURAL PANELS, GYPSUM FLOOR TOPPING, RESILIENT CHANNELS, GLASS OR MINERAL FIBER BATT OR LOOSE FILL INSULATION, CEILING DAMPER, GYPSUM WALLBOARD**

One layer 1/4" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 12" o.c. with 1" Type S drywall screws 8" o.c. Gypsum board end joints located midway between continuous channels and attached with screws 8" to additional pieces of channel 60" long located 3" back on either side of end joint. Resilient channels applied at right angles to 12" deep parallel chord wood trusses 24" o.c. with 1/4" Type S or W drywall screws. Glass or mineral fiber batt insulation applied to subfloor or to loose fill insulation applied directly over gypsum board. Wood trusses supporting 21/2" wood structural panel subfloor, long edges T&G, applied at right angles to trusses with 6d ring shank nails, or staples having equal or greater withdrawal and lateral resistance strength, 12" o.c. Either 1/4" gypsum floor topping or 1/8" wood structural panel underlayment applied over subfloor.

Optional ceiling damper (refer to manufacturer for information on the type of damper).

**PROPRIETARY GYPSUM BOARD**

- American Gypsum Company
  - 1/4" FireBloc® Type C
- Temple-Inland Forest Products Corporation
  - 1/4" TG-C

---

*Contact the manufacturer for more detailed information on proprietary products.*
# Floor-Ceiling Systems, Wood Framed

## Wood Joists, Gypsum Wallboard, Glass Fiber Insulation

**Base layer** 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to rigid furring channels 16" o.c. with 1" Type S drywall screws 12" o.c. Gypsum board end joints located midway between continuous channels and attached to additional pieces of channel 60" long with 1" Type S drywall screws 8" o.c. Rigid furring channels applied at right angles to 2 x 10 wood joists 16" o.c. with 6d common or box nails, 1 1/8" long, 0.092" diameter shank, 1/4" heads, or 1/2" Type S drywall screws, two per joint. Face layer 5/8" type X gypsum wallboard or gypsum veneer base applied at right angles to furring channels with 1/4" Type S drywall screws 8" o.c. at end joints and 12" o.c. at intermediate channels. Edge joints staggered 18" minimum from base layer edge joints; end joints staggered 8" min. from base layer end joints. Wood joints supporting 5/8" interior plywood with exterior glue subfloor and 1 1/8" lightweight concrete reinforced with galvanized hexagonal wire mesh over film or felt or 1" sound gypsum floor underlayment. 3 1/2" R-11 unfaced glass fiber insulation, 0.6 pcf, supported against subfloor by wire rods 12" o.c. Alternately, insulation may be 3 1/2" faced glass fiber insulation stapled in place against subfloor.

**Approx. Ceiling**
- Weight: 5 psf
- Fire Test: UL R4024-15, 8-31-94, UL Design LS32

## Wood Joists, Metal Lath, Gypsum Plaster

4 1/4" 1-2-1-3 gypsum-vermiculite plaster applied over 3 4 lb. metal lath applied to 2 x 10 wood joists 16" o.c. with barbed roofing nails, 1 1/4" long, 0.120" shank, 5/16" heads 5" o.c. Wood joints supporting 1" nominal 1 1/8" wood subfloor and 1" nominal wood finish floor.

**Approx. Ceiling**
- Weight: 4 psf
- Fire Test: NBS 272, 12-15-50

## Wood Floor, Wood Joists, Gypsum Wallboard, Resilient Channels

*Proprietary*

**Base layer** 5/8" proprietary type X gypsum wallboard applied at right angles to 2 x 10 wood joists 16" o.c. with 8d common 1 1/2" shank nails, 2 1/2" long, 1" Type C drywall screws, 12" o.c. Resilient channel 24" o.c. applied at right angles to wood framing through base layer with 1 1/2" long screws. Double channel installed at face layer end joints. Face layer 5/8" proprietary type X gypsum wallboard applied at right angles to resilient furring channels with 1" Type S screws 12" o.c. Wood joints supporting 5/8" plywood subfloor and 5/8" plywood finish floor applied at right angles to joists with joints staggered. Consult gypsum board manufacturer for other floor options.

**Proprietary Gypsum Board**
- American Gypsum Company: 5/8" FireBlock® Type C
- G-P Gypsum: 5/8" ToughRock® Fireguard® C
- Lafarge North America Inc.: 5/8" FireChief® Type C
- National Gypsum Company: 5/8" Gold Bond® Brand FIRE-SHIELD C
- PACCO Gypsum: 5/8" FLAME CUR® Super C™
- Temple-Inland Forest Products Corporation: 5/8" TG-C
- United States Gypsum Company: 5/8" SHEETROCK® Brand FIRECODE® C
- Core Gypsum Panels

**Approx. Ceiling**
- Weight: 6 psf
- Fire Test: UL R1319-114, 7-21-67, UL Design L511

*Contact the manufacturer for more detailed information on proprietary products.*
<table>
<thead>
<tr>
<th>GA FILE NO. FC 5724</th>
<th>PROPRIETARY*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WOOD FLOOR, WOOD JOISTS, GYPSUM WALLBOARD, RESILIENT CHANNELS</strong></td>
<td></td>
</tr>
<tr>
<td>Base layer 9/16&quot; proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to 2 x 10 wood joists 16&quot; o.c. with 8d nails, 2½&quot; long, 0.113&quot; shank, 9/16&quot; head, 7&quot; o.c. Resilient furring channels 24&quot; o.c. applied at right angles to joists through base layer with one 8d nail, 2½&quot; long, 0.113&quot; shank, 9/16&quot; head, at each joint. Face layer 9/16&quot; proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels with 1&quot; Type S drywall screws 12&quot; o.c. Double channel installed at face layer and joints. Wood joists supporting 1&quot; nominal T &amp; G wood subfloor and 1&quot; nominal wood finish floor or 9/16&quot; plywood finished floor with long edges T &amp; G and 15/32&quot; interior plywood with exterior glue subfloor perpendicular to joists with joints staggered.</td>
<td></td>
</tr>
<tr>
<td>PROPRIETARY GYPSUM BOARD</td>
<td></td>
</tr>
<tr>
<td>American Gypsum Company</td>
<td>-</td>
</tr>
<tr>
<td>BPB Americas Inc.</td>
<td>-</td>
</tr>
<tr>
<td>G-P Gypsum</td>
<td>-</td>
</tr>
<tr>
<td>Lafarge North America Inc.</td>
<td>-</td>
</tr>
<tr>
<td>National Gypsum Company</td>
<td>-</td>
</tr>
<tr>
<td>PACB® Gypsum</td>
<td>-</td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. FC 5725</th>
<th>GENERIC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WOOD FLOOR, WOOD JOISTS, GYPSUM WALLBOARD, RIGID FURRING CHANNELS</strong></td>
<td></td>
</tr>
<tr>
<td>Base layer 5/8&quot; type X gypsum wallboard applied at right angles to 2 x 8 wood joists 24&quot; o.c. with 1/2&quot; Type W drywall screws 12&quot; o.c. Second layer 5/8&quot; type X gypsum wallboard applied at right angles to joists with 2&quot; Type W drywall screws 12&quot; o.c. Second layer joints offset 24&quot; from base layer joints. Third layer 5/8&quot; type X gypsum wallboard applied at right angles to joists with 2½&quot; Type W drywall screws 12&quot; o.c. Third layer joints offset 12&quot; from second layer joints. Half-shaped rigid furring channels 24&quot; o.c. applied at right angles to joists over third layer with two 2½&quot; long Type W drywall screws at each joint. Face layer 5/8&quot; type X gypsum wallboard applied at right angles to furring channels with 1½&quot; Type S drywall screws 12&quot; o.c. Wood Joists supporting 9/16&quot; T &amp; G edge plywood floor applied at right angles to joists with 8d nails 6&quot; o.c. at joints and 12&quot; at intermediate joints. Ceiling provides two-hour fire-resistance protection for wood framing.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. FC 5750</th>
<th>GENERIC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WOOD FLOOR, WOOD I-JOISTS, GYPSUM WALLBOARD, RIGID FURRING CHANNELS</strong></td>
<td></td>
</tr>
<tr>
<td>Base layer 9/16&quot; type X gypsum wallboard applied at right angles to 9½&quot; deep wood I-joists 24&quot; o.c. with 1¼&quot; Type W drywall screws 12&quot; o.c. Second layer 9/16&quot; type X gypsum wallboard applied at right angles to I-joists with 2&quot; Type W drywall screws 12&quot; o.c. Second layer joints offset 24&quot; from base layer joints. Third layer 9/16&quot; type X gypsum wallboard applied at right angles to I-joists with 2½&quot; Type W drywall screws 12&quot; o.c. Third layer joints offset 12&quot; from second layer joints. Half-shaped rigid furring channels 24&quot; o.c. applied at right angles to I-joists over third layer with two 2½&quot; long Type W drywall screws at each I-joint. Face layer 9/16&quot; type X gypsum wallboard applied at right angles to furring channels with 1½&quot; Type S drywall screws 12&quot; o.c. Wood I-joists supporting 9/16&quot; T &amp; G edge plywood floor applied at right angles to I-joists with 8d nails 6&quot; o.c. at joints and 12&quot; at intermediate I-joists. Ceiling provides two-hour fire-resistance protection for wood framing.</td>
<td></td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
## Floor-Ceiling Systems, Wood Framed

### Generic

**Wood Floor, Wood Trusses, Gypsum Wallboard, Rigid Furring Channels**

Base layer 3/4" type X gypsum wallboard applied at right angles to 18" deep parallel chord wood 24" o.c. with 11/2" Type W drywall screws 12" o.c. Second layer 3/4" type X gypsum wallboard applied at right angles to trusses with 2" Type W drywall screws 12" o.c. Second layer joints offset 24" from base layer joints. Third layer 3/4" type X gypsum wallboard applied at right angles to trusses with 21/2" Type W drywall screws 12" o.c. Third layer joints offset 12" from second layer joints. Hot-shaped rigid furring channels 24" o.c. applied at right angles to trusses over third layer with two 21/2" long Type W drywall screws at each truss. Face layer 3/4" type X gypsum wallboard applied at right angles to furring channels with 11/2" Type S drywall screws 12" o.c. Wood trusses supporting 3/4" T & G edge plywood floor applied at right angles to trusses with 5d nails 6" o.c. at joints and 12" at intermediate trusses. Ceiling provides two-hour fire-resistance protection for wood framing.

### Proprietary*

**Wood Trusses, Wood Structural Panels, Gypsum Floor Topping, Resilient Channels, Glass or Mineral Fiber Batt or Loose Fill Insulation, Gypsum Wallboard**

Base layer 3/4" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to minimum 12" deep parallel chord wood trusses 24" o.c. with 1 1/2" Type S drywall screws 8" o.c. Resilient channel 16" o.c. applied at right angles to trusses with 1 1/2" Type S drywall screws to each truss. Second layer 3/4" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient channels with end joints centered on channels with 1" Type S-12 drywall screws 6" o.c. Face layer 3/4" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to channels with 1 1/2" Type S-12 drywall screws 8" o.c. Face layer joints offset 16" from second layer joints. Glass or mineral fiber batt, blanket, or loose-fill insulation applied directly over gypsum board. Wood trusses supporting 3/4" nominal wood structural panel subfloor applied at right angles to trusses with construction adhesive and 6d ring shank nails 12" o.c. Minimum 3/4" proprietary gypsum floor topping applied over subfloor.

**Proprietary Gypsum Components**

- 3/4" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels
- LEVELROCK® Brand Floor Underlayment

*Contact the manufacturer for more detailed information on proprietary products.*
ROOF-CEILING SYSTEMS

1 HOUR FIRE

STEEL ROOF TRUSSES, RESILIENT OR RIGID CHANNELS, THERMAL INSULATION, GYPSUM WALLBOARD

GA FILE NO. RC 2501

Proprietary layer 9/16" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient or rigid furring channels with 1/2" Type S drywall screws 12" o.c. Channels spaced 12" o.c. when insulation is used or 16" o.c. when no insulation is used. Gypsum board end joints attached with screws 12" o.c. to additional pieces of channel 60" long located 3" back on either side of end joint. Resilient channels applied at right angles to bottom chord of pitched or parallel chord steel trusses 48" o.c. with 1/2" Type S-12 screws or rigid furring channels secured to the bottom chord of truss with double strap wire saddle ties (refer to furring channel manufacturer for maximum spans). Optional glass fiber or mineral fiber batt or loose fill insulation applied directly over gypsum board. Trusses supporting roof deck panels covered by 9/16" regular gypsum sheathing either loose laid or adhesively or mechanically attached to roof deck. Any thickness polyisocyanurate foamed plastic, polystyrene foamed plastic, or mineral fiber or glass fiber insulation boards laid over gypsum sheathing and covered by a Class A, B, or C roof covering.

Proprietary Gypsum Board

National Gypsum Company
- 9/16" Cold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard

Approx. Ceiling Weight: 3 psf
Fire Test: UL R3501, 01NK49664, 9-5-02,
UL Design P540

GA FILE NO. RC 2601

Generic

GYPSUM WALLBOARD, WOOD JOISTS, ROOF COVERING

Basic layer 9/16" Type X gypsum wallboard applied at right angles to 2 x 10 wood joists 24" o.c. with 1/2" Type W or S drywall screws 24" o.c. Basic layer 9/16" Type X gypsum wallboard or gypsum veneer base applied at right angles to joints with 1/2" Type W or S drywall screws 12" o.c. at joints and intermediate joints and 1/2" Type S drywall screws 12" o.c. placed 2" back on either side of end joints. Joints offset 24" from basic layer joints. Wood joists supporting 9/16" plywood with exterior glue applied at right angles to joints with 8d nails. Appropriate roof covering. Ceiling provides one hour fire resistance protection for framing, including trusses.

Approx. Ceiling Weight: 5 psf
Fire Test: FM FC 172, 2-25-72; ITS, 8-6-98

GA FILE NO. RC 2602

Generic

WOOD TRUSSES, GYPSUM WALLBOARD

Basic layer 9/16" Type X gypsum wallboard applied at right angles to wood roof trusses 24" o.c. with 1/2" Type W or S drywall screws 24" o.c. Basic layer 9/16" Type X gypsum wallboard or gypsum veneer base applied at right angles to trusses with 1/2" Type W or S drywall screws 12" o.c. at joints and intermediate trusses and 1/2" Type G drywall screws 12" o.c. placed 2" back on either side of end joints. Joints offset 24" from basic layer joints. Wood trusses supporting 9/16" wood structural panels applied at right angles to trusses with 8d nails. Appropriate roof covering. Ceiling provides one hour fire resistance protection for trusses.

Approx. Ceiling Weight: 5 psf
Fire Test: FM FC 172, 2-25-72; ITS, 8-6-98

*Contact the manufacturer for more detailed information on proprietary products.
**ROOF-CEILING SYSTEMS**

**GA FILE NO. RC 2603**

**WOOD ROOF TRUSSES, RESILIENT CHANNELS, GLASS OR MINERAL FIBER INSULATION, CEILING DAMPER, GYPSUM WALLBOARD**

One layer 3/4" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 12" o.c. (12" o.c. when insulation is draped over channels) with 1/2" Type S drywall screws 8" o.c. Gypsum board and joints attached with screws 8" o.c. to additional pieces of channel 60" long located 3" back on either side of end joints. Resilient channels applied at right angles to bottom chord of pitched wood trusses 24" o.c. with 1" Type S or W screws. Glass fiber or mineral fiber batt or loose fill insulation applied directly over gypsum board. Trusses supporting 3/4" plywood or OSB roof sheathing applied at right angles to trusses with construction adhesive and 6d ring Shank nails 12" o.c. Optional ceiling damper (refer to manufacturer for information on the type of damper).

**PROPRIETARY GYPSUM BOARD**

National Gypsum Company
- 3/8" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard

Approx. Ceiling Weight: 3 psf
Fire Test: UL R3501, 00NK42585, 8-16-01,
UL Design P533

**GA FILE NO. RC 2604**

**WOOD ROOF TRUSSES, RESILIENT CHANNELS, GLASS FIBER INSULATION, CEILING DAMPER, GYPSUM WALLBOARD**

One layer 3/4" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 16" o.c. (12" o.c. when insulation is draped over channels) with 1" Type S drywall screws 12" o.c. Gypsum board and joints attached with screws 8" o.c. to additional pieces of channel 68" long located 3" back on either side of end joint. Resilient channels applied at right angles to bottom chord of pitched wood trusses 24" o.c. with 1" Type S or W screws. Glass fiber insulation secured to wood structural panels or draped over channels. Trusses supporting 3/8" plywood structural panels applied at right angles to trusses with construction adhesive and 6d ring Shank nails 12" o.c. Optional ceiling damper (refer to manufacturer for information on the type of damper).

**PROPRIETARY GYPSUM BOARD**

United States Gypsum Company
- 3/8" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels

Approx. Ceiling Weight: 3 psf
Fire Test: UL R15558, 02NK24136, 3-20-03,
UL Design P544

**GA FILE NO. RC 2605**

**WOOD ROOF TRUSSES, RESILIENT CHANNELS, GLASS FIBER BATT OR LOOSE FILL INSULATION, CEILING DAMPER, GYPSUM WALLBOARD**

One layer 3/4" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 16" o.c. (12" o.c. when insulation is draped over channels) with 1" Type S drywall screws 12" o.c. Gypsum board and joints attached with screws 8" o.c. to additional pieces of channel 60" long located 3" back on either side of end joint. Resilient channels applied at right angles to bottom chord of pitched wood trusses 24" o.c. with 1" Type S or W screws. Glass fiber insulation secured to wood structural panels or draped over channels, or loose fill insulation applied directly over gypsum board. Trusses supporting 3/8" plywood structural panels applied at right angles to trusses with construction adhesive and 6d ring Shank nails 12" o.c. Optional ceiling damper (refer to manufacturer for information on the type of damper).

**PROPRIETARY GYPSUM BOARD**

United States Gypsum Company
- 3/8" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels

Approx. Ceiling Weight: 3 psf
Fire Test: UL R15588, 02NK41925, 9-30-02,
UL Design P531

*Contact the manufacturer for more detailed information on proprietary products.*
ROOF-CEILING SYSTEMS

GA FILE NO. RC 2606

WOOD ROOF TRUSSES, RESILIENT CHANNELS, GLASS OR MINERAL FIBER INSULATION, CEILING DAMPER, GYPSUM WALLBOARD

One layer 9/16" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 12" o.c. with 1 1/4" Type S drywall screws 8" o.c. Gypsum board end joints attached with screws 8" o.c. to additional pieces of channel 60" long located 3" back on either side of end joint. Resilient channels applied at right angles to bottom chord of pitched wood trusses 24" o.c. with 1 1/4" Type S or W screws. Glass fiber or mineral fiber batt or loose fill insulation applied directly over gypsum board. Trusses supporting 9/16" plywood or OSB roof sheathing applied at right angles to trusses with 6d ring shank nails 12" o.c. Optional ceiling damper (refer to manufacturer for information on the type of damper).

PROPRIETARY GYPSUM BOARD

- 9/16" FireBlock® Type C
- 5/8" TG-C

Approx. Ceiling Weight: 3 psf
Fire Test: UL R14196 (R6937, R10583)
04NK25585, 1-15-05,
UL Design P545

GA FILE NO. RC 2607

WOOD ROOF TRUSSES, RESILIENT CHANNELS, GLASS FIBER OR SPRAYED CELLULOSE FIBER INSULATION, CEILING DAMPER, GYPSUM WALLBOARD

One layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient furring channels 16" o.c. (12" o.c. when insulation is draped over channels or sprayed directly over gypsum board) with 1" Type S drywall screws 12" o.c. Gypsum board end joints attached with screws 8" o.c. to additional pieces of channel 60" long located 3" back on either side of end joint. Resilient channels applied at right angles to bottom chord of pitched wood trusses 24" o.c. with 1 1/4" Type S screws. Glass fiber batt insulation secured to wood structural panels or draped over channels, or cellulosic insulation sprayed directly over gypsum board. Trusses supporting 9/16" wood structural panels applied at right angles to trusses with construction adhesive and 6d ring shank nails 12" o.c. Optional ceiling damper (refer to manufacturer for information on the type of damper).

PROPRIETARY GYPSUM BOARD

- 5/8" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels

Approx. Ceiling Weight: 3 psf
Fire Test: UL R1319, 98NK41378,
11-20-98,
UL Design P522

GA FILE NO. RC 2750

GYPSUM WALLBOARD, RIGID FURRING CHANNELS

WOOD JOISTS or WOOD I-JOISTS, ROOF COVERING

Base layer 9/16" type X gypsum wallboard applied at right angles to either 2 x 8 wood joists or 9 1/2" deep wood I-joists 24" o.c. with 1 1/4" Type W drywall screws 12" o.c. Second layer 9/16" type X gypsum wallboard applied at right angles to joists or I-joists with 2" Type W drywall screws 12" o.c. Second layer joints offset 24" from base layer joints. Third layer 9/16" type X gypsum wallboard applied at right angles to joists or I-joists with 2 1/2" Type W drywall screws 12" o.c. Third layer joints offset 12" from second layer joints. Half-shaped rigid furring channels 24" o.c. applied at right angles to joists or I-joists over third layer with two 2 1/2" long Type W drywall screws at each joint or Holst. Face layer 9/16" type X gypsum wallboard applied at right angles to furring channels with 1 1/4" Type S drywall screws 12" o.c. Wood joists or I-joists supporting 9/16" T & G edge plywood applied at right angles to joists or I-joists with 6d nails 6" o.c. at joints and 12" at intermediate joints or I-joists. Appropriate roof covering. Ceiling provides two-hour fire-resistance protection for wood framing.

Approx. Ceiling Weight: 12 psf
Fire Test: UL R4024, 03NK25654,
4-27-01;
UL R4042, 03NK11206,
3-19-03;
UL Design L558;
ULC Design M514

*Contact the manufacturer for more detailed information on proprietary products.
ROOF- CEILING SYSTEMS

GA FILE NO. RC 2751
WOOD ROOF TRUSSES, GYPSUM WALLBOARD, RIGID FURRING CHANNELS

Base layer 5/8" type X gypsum wallboard applied at right angles to wood roof trusses 24" o.c. with 1 1/4" Type W drywall screws 12" o.c. Second layer 5/8" type X gypsum wallboard applied at right angles to trusses with 2" Type W drywall screws 12" o.c. Second layer joints offset 24" from base layer joints. Third layer 5/8" type X gypsum wallboard applied at right angles to trusses with 2 1/4" Type W drywall screws 12" o.c. Third layer joints offset 12" from second layer joints. Half-shaped rigid furring channels 24" o.c. applied at right angles to trusses over third layer with two 2 1/4" long Type W drywall screws at each truss. Face layer 5/8" type X gypsum wallboard applied at right angles to furring channels with 1 1/4" Type S drywall screws 12" o.c. Wood trusses supporting 5/8" T & G edge wood structural panels applied at right angles to trusses with 8d nails 3" o.c. at joints and 12" at intermediate fplasts. Appropriate roof covering. Ceiling provides two-hour fire-resistance protection for wood framing.

Approx. Ceiling Weight: 12 psf
File Test: UL 260, 01NK26545,
4-27-01,
UL Design L556;
ULC Design M514

GA FILE NO. RC 2752
STEEL ROOF TRUSSES, RESILIENT OR RIGID CHANNELS, THERMAL INSULATION, GYPSUM WALLBOARD

Base layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to resilient or rigid furring channels with 1 1/4" Type S drywall screws 12" o.c. Gypsum board end joints attached with screws 12" o.c. to additional pieces of channel 60" long located 3" back on either side of end joint. Face layer 5/8" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to channels with 1 1/4" Type S drywall screws 12" o.c. Channels spaced 12" o.c. when insulation is used or 16" o.c. when no insulation is used. Resilient channels applied at right angles to bottom chord of pitched or parallel chord steel trusses 48" o.c. with 1 1/4" Type S-12 screws or rigid furring channels secured to the bottom chord of each truss with double-strand wire saddle ties (refer to furring channel manufacturer for maximum spans). Optional glass fiber or mineral fiber batt or loose fill insulation applied directly over gypsum board. Trusses supporting metal roof deck panels covered by 5/8" regular gypsum sheathing either loose laid or adhesively or mechanically attached to roof deck. Any thickness polyisocyanurate foamed plastic, polystyrene foamed plastic, or mineral fiber or glass fiber insulation boards laid over gypsum sheathing and covered by a Class A, B, or C roof covering.

Approx. Ceiling Weight: 3 psf
File Test: UL R3501, 01NK46664,
4-2-03,
UL Design P543

*Contact the manufacturer for more detailed information on proprietary products.
**GA FILE NO. CM 1000**

**GENERIC**

**1 HOUR FIRE**

**GYPSUM WALLBOARD, STEEL COLUMN COVER**

Base layer ½" type X gypsum wallboard applied around W10x49 column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x½" sheet metal screws 12" o.c.

Fire Test: UL NC505-(1-8), 71NK2559, 12-23-75; UL NC505, 77NK1516; UL Design X526

---

**GA FILE NO. CM 1001**

**GENERIC**

**1 HOUR FIRE**

**GYPSUM WALLBOARD, STEEL STUDS**

One layer ½" type X gypsum wallboard applied without horizontal joints to 1½" steel studs located at each corner of W10x49 column with 1" Type S drywall screws 24" o.c. Metal corner bead applied to all corners with 1" Type S drywall screws 12" o.c. in each flange. Joint compound ¼" thick applied over corner bead.

Fire Test: UL NC505, 77NK1747, 6-13-77; UL Design X526

---

**GA FILE NO. CM 1300**

**GENERIC**

**1 HOUR FIRE**

**METAL LATH, GYPSUM PLASTER**

5½" 1:3 gypsum-sand plaster applied over 3.4 lb metal lath applied around and wire tied to W10x49 column with 18 gage wire 6" o.c.

Fire Test: BMS 92/40, 10-7-42
## COLUMNS, NONCOMBUSTIBLE

### GA FILE NO. CM 1400

<table>
<thead>
<tr>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GYPSUM WALLBOARD, STEEL COLUMN COVER</td>
<td></td>
</tr>
<tr>
<td>Base layer ½&quot; type X gypsum wallboard applied around W4x13 column and held in place with paper masking tape. Second layer ½&quot; type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x½&quot; sheet metal screws 12&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL NC505-(1-6), 71NK2639, 12-23-75; UL NC505, 77NK1518; UL Design X526</td>
<td></td>
</tr>
</tbody>
</table>

### GA FILE NO. CM 1401

<table>
<thead>
<tr>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GYPSUM WALLBOARD, STEEL COLUMN COVER</td>
<td></td>
</tr>
<tr>
<td>Base layer ½&quot; type X gypsum wallboard applied around W4x13 column and held in place with paper masking tape. Second layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x½&quot; sheet metal screws 12&quot; o.c. Face layer ½&quot; type X gypsum wallboard applied without horizontal joints to column cover with 1&quot; Type S drywall screws 8&quot; o.c. spaced 1&quot; from vertical edges. Metal corner bead applied to all corners with 1&quot; Type S drywall screws 12&quot; o.c. in each flange.</td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL NC505-(1-6), 71NK2639, 12-23-75; UL NC505, 77NK1518; UL Design X526</td>
<td></td>
</tr>
</tbody>
</table>

### GA FILE NO. CM 1402

<table>
<thead>
<tr>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GYPSUM WALLBOARD, STEEL STUDS</td>
<td></td>
</tr>
<tr>
<td>Base layer ½&quot; type X gypsum wallboard applied without horizontal joints to 1½&quot; steel studs located at each corner of W4x13 column with 1&quot; Type S drywall screws 24&quot; o.c. Face layer ½&quot; type X gypsum wallboard applied without horizontal joints to studs with 1½&quot; Type S drywall screws 12&quot; o.c. Metal corner bead applied to all corners with 1&quot; Type S drywall screws 12&quot; o.c. in each flange. Joint compound ½&quot; thick applied over corner bead.</td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL NC505, 77NK1747; 6-13-77; UL Design X528</td>
<td></td>
</tr>
</tbody>
</table>

### GA FILE NO. CM 1450

<table>
<thead>
<tr>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GYPSUM WALLBOARD, STEEL COLUMN COVER</td>
<td></td>
</tr>
<tr>
<td>Base layer ½&quot; type X gypsum wallboard applied around TS4x4x0.166 tube steel column and held in place with paper masking tape. Second layer ½&quot; type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x½&quot; sheet metal screws 12&quot; o.c.</td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL NC505-(1-6), 71NK2639, 12-23-75; UL NC505, 77NK1518; UL Design X526</td>
<td></td>
</tr>
<tr>
<td>GA FILE NO. CM 1451</td>
<td>GENERIC</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------</td>
</tr>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL COLUMN COVER</strong></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/4&quot; type X gypsum wallboard applied around TS4x6x0.188 tube steel column and held in place with paper masking tape. Second layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No.8x1/2&quot; sheet metal screws 12&quot; o.c. Face layer 1/4&quot; type X gypsum wallboard applied without horizontal joints to column cover with 1&quot; Type S drywall screws 8&quot; o.c. spaced 1&quot; from vertical edges. Metal cornerbead applied to all corners with 1&quot; Type S drywall screws 12&quot; o.c. in each flange.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. CM 1452</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/4&quot; type X gypsum wallboard applied without horizontal joints to 1&quot;x6&quot; steel studs located at each corner of TS4x6x0.188 tube steel column with 1&quot; Type S drywall screws 24&quot; o.c. Face layer 1/4&quot; type X gypsum wallboard applied without horizontal joints to studs with 1/2&quot; Type S drywall screws 12&quot; o.c. Metal cornerbead applied to all corners with 1&quot; Type S drywall screws 12&quot; o.c. in each flange. Joint compound 1/4&quot; thick applied over corner bead.</td>
<td></td>
<td>Fire Test: UL NC505, 77NK1547, 6-13-77; UL Design X628</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. CM 1600</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL COLUMN COVER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/4&quot; type X gypsum wallboard applied around W6x15.5 column and held in place with paper masking tape. Second layer 1/4&quot; type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No.8x1/2&quot; sheet metal screws 12&quot; o.c.</td>
<td></td>
<td>Fire Test: UL NC505-(1-6), 71NK2639, 12-23-75; UL NC505, 77NK1518; UL Design X52c</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. CM 1601</th>
<th>GENERIC</th>
<th>1 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL COLUMN COVER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/4&quot; type X gypsum wallboard applied around W6x15.5 column and held in place with paper masking tape. Second layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No.8x1/2&quot; sheet metal screws 12&quot; o.c. Face layer 1/4&quot; type X gypsum wallboard applied without horizontal joints to column cover with 1&quot; Type S drywall screws 8&quot; o.c. spaced 1&quot; from vertical edges. Metal cornerbead applied to all corners with 1&quot; Type S drywall screws 12&quot; o.c. in each flange.</td>
<td></td>
<td>Fire Test: UL NC505-(1-6), 71NK2639, 12-23-75; UL NC505, 77NK1518; UL Design X52c</td>
</tr>
</tbody>
</table>
## COLUMNS, NONCOMBUSTIBLE

### GA FILE NO. CM 1602

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer ½" type X gypsum wallboard applied without horizontal joints to 1 ¼" steel studs located at each corner of W6x15.5 column with 1" Type S drywall screws 24" o.c. Face layer ⅛" type X gypsum wallboard applied without horizontal joints to studs with ¾" Type S drywall screws 12" o.c. Metal corner bead applied to all corners with 1" Type S drywall screws 12" o.c. in each flange. Joint compound ¼" thick applied over corner bead.

Fire Test: UL NC505, 77NK1747; 6-13-77, UL Design X528

### GA FILE NO. CM 1850

**GYPSUM WALLBOARD, STEEL COLUMN COVER**

Base layer ⅛" type X gypsum wallboard applied around TSBx8x0.250 tube steel column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock steel steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8×⅛" sheet metal screws 12" o.c.

Fire Test: UL NC505-(1-5), 77NK2639, 12-33-75; UL NC505, 77NK1518; UL Design X528

### GA FILE NO. CM 1851

**GYPSUM WALLBOARD, STEEL STUDS**

One layer ⅛" type X gypsum wallboard applied without horizontal joints and parallel to 1 ¼" steel studs located at each corner of TSBx8x0.250 tube steel column with 1" Type S drywall screws 24" o.c. Steel corner bead, ¾" flanges, applied with 1" Type S drywall screws 12" o.c. in each flange. Joint compound ¼" thick applied over corner bead.

Fire Test: UL NC505, 77NK1747; 6-13-77, UL Design X528

### GA FILE NO. CM 2010

**GYPSUM WALLBOARD**

Base layer ½" type X gypsum wallboard or gypsum veneer base applied to flanges and across web openings of W10x49 column and fastened to 1 ¼" steel studs with 1" Type S drywall screws 24" o.c. Face layers ½" type X gypsum wallboard or gypsum veneer base applied to studs over flanges with 1" Type S drywall screws 12" o.c. to provide a cavity between boards on the flange. Face layers across the web opening laid flat across the base layer and attached to studs with ¾" Type S drywall screws 12" o.c. Metal corner bead applied with 4d nails, 1¾" long, 0.067" shank, ⅛" heads, 12" o.c. in each flange.

Fire Test: UL R1319-80, 5-27-85, UL Design X518; UL.C Design X518
<table>
<thead>
<tr>
<th>GA FILE NO. CM 2015</th>
<th>GENERIC</th>
<th>2 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GYPSUM WALLBOARD, STEEL COLUMN COVER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/2&quot; type X gypsum wallboard applied around W10x49 column and held in place with paper masking tape. Second layer 9/16&quot; type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8 x 1 1/2&quot; sheet metal screws 12&quot; o.c.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL NC505-(1-5), 71NK2639, 12-23-75; UL NC505, 77NK1518; UL Design X525</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. CM 2016</th>
<th>GENERIC</th>
<th>2 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GYPSUM WALLBOARD, STEEL COLUMN COVER</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/2&quot; type X gypsum wallboard applied around W10x49 column and held in place with paper masking tape. Second layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8 x 1 1/2&quot; sheet metal screws 12&quot; o.c. Face layer 9/16&quot; type X gypsum wallboard applied without horizontal joints to column cover with 1&quot; Type S drywall screws 8&quot; o.c. spaced 1&quot; from vertical edges. Metal cornerbead attached to all corners with 1&quot; type S drywall screws 12&quot; o.c. in each flange.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL NC505-(1-5), 71NK2639, 12-23-75; UL NC505, 77NK1518; UL Design X525</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. CM 2017</th>
<th>GENERIC</th>
<th>2 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GYPSUM WALLBOARD, STEEL STUDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 9/16&quot; type X gypsum wallboard applied without horizontal joints to 1 1/4&quot; steel studs located at each corner of W10x49 column with 1&quot; Type S drywall screws 24&quot; o.c. Face layer 1/2&quot; type X gypsum wallboard applied without horizontal joints to studs with 1 1/4&quot; Type S drywall screws 12&quot; o.c. Metal cornerbead applied to all corners with 1&quot; Type S drywall screws 12&quot; o.c. in each flange. Joint compound 1/4&quot; thick applied over corner bead.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL NC505, 77NK1747; 6-13-77, UL Design X528</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
COLUMNS, NONCOMBUSTIBLE

**GA FILE NO. CM 2020**

**GENERIC**

**2 HOUR FIRE**

**GYPSUM WALLBOARD**

Base layer 9/16" type X gypsum wallboard or gypsum veneer base applied around W10x49 column and nailed with 1/4" long ring shank nails as required for support. Second layer 9/16" type X gypsum wallboard or gypsum veneer base applied around column and nailed with 1/4" long ring shank nails as required for support. 1 1/4" x 1 1/4" 25 gage steel angles applied over corners with 1/2" x 0.018" steel straps 30° o.c. wrapped around second layer beginning 18" from each end of column. Face layer 9/16" type X gypsum wallboard or gypsum veneer base attached to steel angles. Metal corner bead applied to all corners with 1" Type S drywall screws spaced 12" o.c.

Fire Test: UL R1319-33, 11-3-60,
UL Design XS16

**GA FILE NO. CM 2110**

**GENERIC**

**2 HOUR FIRE**

**STEEL STUDS, GYPSUM WALLBOARD**

One layer 1/2" type X gypsum wallboard or gypsum veneer base attached to 1 1/4" steel studs located at each corner of heavy steel W14x228 columns with 1" Type S drywall screws 12" o.c. 1 1/4" metal corner bead applied by crimping 6" o.c.

Fire Test: UL R2501-58, 10-10-67,
UL Design XS20;
ULC Design X520

**GA FILE NO. CM 2120**

**GENERIC**

**2 HOUR FIRE**

**STEEL STUDS, GYPSUM WALLBOARD**

Base layer 9/16" type X gypsum wallboard or gypsum veneer base applied to 1 1/4" steel studs located at each corner of W10x49 column with 1" Type S screws 24° o.c. Face layer 9/16" type X gypsum wallboard or gypsum veneer base applied to studs with 1/4" Type S drywall screws 12" o.c. 1/4" metal corner bead applied with 6d coated nails, 1/4" long, 0.0915" shank, 1/4" heads, 12" o.c. in each flange.

Fire Test: UL R2717-34, 5-15-64,
UL Design X517;
ULC Design Z603
### GA FILE NO. CM 2310

**METAL LATH, GYPSUM PLASTER**

1 1/4" 1:1:1 wood-fibered gypsum-sand plaster applied over 3.4 lb diamond mesh expanded metal lath wire tied with 18 gage wire 6" o.c. at seams applied over 1/2" x 3/4" spacers 40" o.c. Spacers made of 3/4" furring channel with 2" legs bent around each corner of W10x49 column.

Fire Test: UL R4024-10, 1-5-67

### GA FILE NO. CM 2328

**METAL LATH, GYPSUM PLASTER**

1 1/2:1:3 gypsum-perlite plaster applied over 3.4 lb. self-furring expanded diamond mesh metal lath and 2 3/8" wide flanged expanded metal corner beads wire tied to W10x49 column with 18 gage galvanized wire 6" o.c.

Fire Test: UL R3187-4, -5, -7, 7-30-52.
UL Design X402

### GA FILE NO. CM 2400

**GYPSUM WALLBOARD, STEEL COLUMN COVER**

Base layer 1/8" type X gypsum wallboard applied around W4x13 column and held in place with paper masking tape. Second layer 1/4" type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer 1/2" type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8 x 1/4" sheet metal screws 1/2" o.c.

Fire Test: UL NC505-(1-6), 71NK2639, 12-23-75.
UL NC505, 77NK1518;
UL Design X525
## COLUMNS, NONCOMBUSTIBLE

### GA FILE NO. CM 2401

**GENERIC**

**2 HOUR FIRE**

**GYPSUM WALLBOARD, STEEL COLUMN COVER**

Base layer 1/2" type X gypsum wallboard applied around W4x13 column and held in place with paper masking tape. Second layer 1/2" type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x1 1/2" sheet metal screws 12" o.c. Face layer 1/2" type X gypsum wallboard applied without horizontal joints to column cover with 1" Type S drywall screws 8" o.c. spaced 1" from vertical edges. Metal corner bead attached to all corners with 1" Type S drywall screws 12" o.c. in each flange.

Fire Test: UL NC505-(1-6), 71NK2639, 12-23-75; UL NC505, 77NK1518; UL Design X526

### GA FILE NO. CM 2402

**GENERIC**

**2 HOUR FIRE**

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 1/2" type X gypsum wallboard applied without horizontal joints to 1 1/8" steel studs located at each corner of W4x13 column with 1" Type S drywall screws 24" o.c. Second layer 1/2" type X gypsum board applied without horizontal joints with 1 1/4" Type S drywall screws 12" o.c. and wire tied with 13 ga. wire 24" o.c. Face layer 1/2" type X gypsum wallboard applied without horizontal joints to studs with 2 1/4" Type S drywall screws 12" o.c. Metal corner bead applied to all corners with 1" Type S drywall screws 12" o.c. in each flange. Joint compound 1/4" thick applied over corner bead.

Fire Test: UL NC505, 77NK1747; 6-13-77; UL Design X526

### GA FILE NO. CM 2450

**GENERIC**

**2 HOUR FIRE**

**GYPSUM WALLBOARD, STEEL COLUMN COVER**

Base layer 1/4" type X gypsum wallboard applied around TS4x6x0.188 tube steel column and held in place with paper masking tape. Second layer 1/4" type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer 1/4" type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x1 1/2" sheet metal screws 12" o.c.

Fire Test: UL NC506-(1-6), 71NK2639, 12-23-75; UL NC505, 77NK1518; UL Design X526

### GA FILE NO. CM 2451

**GENERIC**

**2 HOUR FIRE**

**GYPSUM WALLBOARD, STEEL COLUMN COVER**

Base layer 1/2" type X gypsum wallboard applied around TS6x4x0.188 tube steel column and held in place with paper masking tape. Second layer 1/2" type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x1 1/2" sheet metal screws 12" o.c. Face layer 1/2" type X gypsum wallboard applied without horizontal joints to column cover with 1" Type S drywall screws 8" o.c. spaced 1" from vertical edges. Metal corner bead attached to all corners with 1" Type S drywall screws 12" o.c. in each flange.

Fire Test: UL NC505-(1-6), 71NK2639, 12-23-75; UL NC505, 77NK1518; UL Design X526
**Columns, Noncombustible**

**GA File No. CM 2452**  
**Generic**  
2 Hour Fire

**Gypsum Wallboard, Steel Studs**
Base layer 1/2" type X gypsum wallboard applied without horizontal joints to 11/4" steel studs located at each corner of TS4x4x0.188 tube steel column with 1" Type S drywall screws 9/16" o.c. Second layer 1/2" type X gypsum board applied without horizontal joints with 11/4" Type S drywall screws 12" o.c. and wire tied with 16 ga. wire 24" o.c. Face layer 3/4" type X gypsum wallboard applied without horizontal joints to studs with 21/2" Type S drywall screws 12" o.c. Metal corner bead applied to all corners with 1" Type S drywall screws 12" o.c. in each flange. Joint compound 1/4" thick applied over corner bead.

**Fire Test:**  
UL NC505, 77NK1747;  
5-13-77;  
UL Design X526

---

**GA File No. CM 2600**  
**Generic**  
2 Hour Fire

**Gypsum Wallboard, Steel Column Cover**
Base layer 1/2" type X gypsum wallboard applied around W5x115.5 column and held in place with paper masking tape. Second layer 1/2" type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer 1/2" type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x1/2" sheet metal screws 12" o.c.

**Fire Test:**  
UL NC505-(1-6), 71NK2639;  
12-23-75;  
UL NC505, 77NK1518;  
UL Design X526

---

**GA File No. CM 2601**  
**Generic**  
2 Hour Fire

**Gypsum Wallboard, Steel Column Cover**
Base layer 1/2" type X gypsum wallboard applied around W5x115.5 column and held in place with paper masking tape. Second layer 1/2" type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x1/2" sheet metal screws 12" o.c. Face layer 1/2" type X gypsum wallboard applied without horizontal joints to column cover with 1" Type S drywall screws 8" o.c. spaced 1" from vertical edges. Metal corner bead attached to all corners with 1" Type S drywall screws 12" o.c. in each flange.

**Fire Test:**  
UL NC505-(1-6), 71NK2639;  
12-23-75;  
UL NC505, 77NK1518;  
UL Design X526
### COLUMNS, NONCOMBUSTIBLE

#### GA FILE NO. CM 2602  
**GENERIC**

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 1/2" type X gypsum wallboard applied without horizontal joints to 1/2" steel studs located at each corner of W10x15.5 column with 1" Type S drywall screws 24" o.c. Second layer 1/2" type X gypsum board applied without horizontal joints with 1/4" Type S drywall screws 12" o.c. and wire laid with 18 ga. wire 24" o.c. Face layer 1/2" type X gypsum wallboard applied without horizontal joints to studs with 2 1/4" Type S drywall screws 12" o.c. Metal corner bead applied to all corners with 1" Type S drywall screws 12" o.c. in each flange. Joint compound 1/4" thick applied over corner bead.

Fire Test:  
UL NC505, 77N1747;  
6-13-77;  
UL Design X528

#### GA FILE NO. CM 3100  
**PROPRIETARY**

**STEEL STUDS, GYPSUM WALLBOARD**

Base layer 1/2" proprietary type X gypsum wallboard applied to flanges and across web openings of W10x49 column and fastened to 1/2" steel studs with 1" type S drywall screws 24" o.c. Second layer 1/2" proprietary gypsum wallboard applied to studs with 1/4" type S drywall screws 12" o.c. creating a stud cavity between base and second layers over column flanges. Face layer 1/2" proprietary gypsum wallboard applied to studs with 2 1/4" type S drywall screws 12" o.c. 1/4" corner bead applied with 4d drywall nails. Joint compound 1/4" thick applied over corner bead and face layer.

**PROPRIETARY GYPSUM BOARD**

- American Gypsum Company  
  1/2" FireBlock® TYPE C
- SPB America Inc.  
  1/2" ProRock® Type C Gypsum Panels
- G-P Gypsum  
  1/2" ToughRock® Fireguard® C
- Lafarge North America Inc.  
  1/2" Firecheck® Type C
- National Gypsum Company  
  1/2" Gold Bond® Brand FIRE-SHIELD C™ Gypsum Wallboard
- PACCO Gypsum  
  1/2" FLAME CURB® Super C™
- Temple-Inland Forest Products Corporation  
  1/4" TG-C
- United States Gypsum Company  
  1/2" SHEETROCK® Brand FIRECODE® C Core Gypsum Panels

Fire Test:  
UL R7094, 50N10635;  
12-4-90;  
UL Design X515

#### GA FILE NO. CM 3115  
**GENERIC**

**GYPSUM WALLBOARD, STEEL COLUMN COVER**

Base layer 5/8" type X gypsum wallboard applied around W10x49 column and held in place with paper masking tape. Second layer 5/8" type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer 5/8" type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x1 1/2" sheet metal screws 12" o.c.

Fire Test:  
UL NC505-1(6), 77N12639;  
12-23-76;  
UL NC505, 77N1518;  
UL Design X528

*Contact the manufacturer for more detailed information on proprietary products.*
COLUMNS, NONCOMBUSTIBLE

GA FILE NO. CM 3116

GYPSUM WALLBOARD, STEEL STUDS

Base layer 4/8" type X gypsum wallboard applied without horizontal joints to 1 1/2" steel studs located at each corner of W10x49 column with 1" Type S drywall screws 24" o.c. Second layer 4/8" type X gypsum board applied without horizontal joints with 1/4" Type S drywall screws 12" o.c. and wire tied with 18 ga. wire 24" o.c. Face layer 5/8" type X gypsum wallboard applied without horizontal joints to studs with 2/12" Type S drywall screws 12" o.c. Metal corner bead applied to all corners with 1" Type S drywall screws 12" o.c. in each flange. Joint compound 1/4" thick applied over corner bead.

Fire Test: UL NC505, 77NK1747; 6-13-77, UL Design XS28

GA FILE NO. CM 3120

STEEL STUDS, GYPSUM WALLBOARD

Base layer 5/8" type X gypsum wallboard or gypsum veneer base applied to 1 1/2" steel studs located at each corner of W10x49 column with 1" Type S drywall screws 24" o.c. Second layer 5/8" type X gypsum wallboard or gypsum veneer base applied to studs with 1/8" Type S drywall screws 12" o.c. and 18 gage wire tied 24" o.c. Face layer 5/8" type X gypsum wallboard or gypsum veneer base applied to studs with 2/12" Type S drywall screws 12" o.c. Metal corner bead applied with 6d coated nails, 1/2" long, 0.0915" shank, 1/4" heads, 12" o.c. in each flange.

Fire Test: UL R2717-31, 2-20-64, UL Design XS59; UL R3501-36, 7-31-64, UL Design XS59; ULC Design ZS02

GA FILE NO. CM 3130

STEEL STUDS, GYPSUM WALLBOARD

Base layer 5/8" type X gypsum wallboard or gypsum veneer base applied to 1 1/2" steel studs located at corners of heavy steel W14x228 column with 1" Type S drywall screws 24" o.c. Face layer 1/2" type X gypsum wallboard or gypsum veneer base applied to studs with 1/4" Type S drywall screws 12" o.c. 1" corner bead applied with 4d coated nails, 1/2" long, 0.067" shank, 3/4" heads, 12" o.c.

Fire Test: UL R3501-61, 7-16-69, UL Design XS13; ULC Design XS13
### COLUMNS, NONCOMBUSTIBLE

**GA FILE NO. CM 3310**

**METAL LATH, GYPSUM PLASTER**

1\(\frac{1}{4}\)" 1:2-1:3 gypsum-perlite plaster applied over 3.4 lb. self-furring expanded diamond mesh metal lath and 2\(\frac{1}{2}\)" wide flanged expanded metal corner beads wire tied to W10x49 column with 16 gage galvanized wire 6" o.c.

Fire Test: UL R3197-4, 5, 7, 7-30-52, UL Design X402

**GA FILE NO. CM 3400**

**GYPSUM WALLBOARD, STEEL COLUMN COVER**

Base layer 5/8" regular gypsum wallboard applied around W4x13 column and held in place with paper masking tape. Second layer 5/8" type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer 5/8" type X gypsum wallboard applied around column and held in place with paper masking tape. Fourth layer 5/8" type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No.6x\(\frac{1}{2}\)" sheet metal screws 12" o.c.

Fire Test: UL NC505-7, 76NK6228, 2-15-77; UL NC505, 77NK1516; UL Design X526

**GA FILE NO. CM 3401**

**GYPSUM WALLBOARD, STEEL STUDS**

Base layer 1/2" type X gypsum wallboard applied without horizontal joints to 1\(\frac{1}{2}\)" steel studs located at each corner of W4x13 column with 1" Type S drywall screws 24" o.c. Second layer 1/2" type X gypsum board applied without horizontal joints with 1/4" Type S drywall screws 12" o.c. Steel angle, 2"x2"x25 ga., applied to all corners over second layer with 1/4" Type S drywall screws 12" o.c. in each flange. Third layer 5/8" type X gypsum wallboard applied without horizontal joints to steel angles with 1" Type S drywall screws 12" o.c. Face layer 5/8" type X gypsum wallboard applied without horizontal joints to steel angles with 1/4" Type S drywall screws 12" o.c. Metal corner bead applied to all corners with 1" Type S drywall screws 12" o.c. in each flange. Joint compound 1/4" thick applied over corner bead.

Fire Test: UL NC505, 77NK1747; 6-13-77; UL Design X526
<table>
<thead>
<tr>
<th>GA FILE NO. CM 3450</th>
<th>GYPSUM WALLBOARD, STEEL COLUMN COVER</th>
<th>3 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic</strong></td>
<td><strong>3 Hour</strong></td>
<td><strong>Fire</strong></td>
</tr>
</tbody>
</table>

**Gypsum Wallboard, Steel Column Cover**

Base layer 5/8" type X gypsum wallboard applied around TS4x4x0.188 column and held in place with paper masking tape. Second layer 5/8" type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer 5/8" type X gypsum wallboard applied around column and held in place with paper masking tape. Fourth layer 5/8" type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x5/8" sheet metal screws 1/2" o.c.

Fire Test:  
UL NC505-(1-6), 71NK2639, 12-23-76;  
UL NC505, 77NK1518;  
UL Design X526

<table>
<thead>
<tr>
<th>GA FILE NO. CM 3451</th>
<th>GYPSUM WALLBOARD, STEEL STUDS</th>
<th>3 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic</strong></td>
<td><strong>3 Hour</strong></td>
<td><strong>Fire</strong></td>
</tr>
</tbody>
</table>

**Gypsum Wallboard, Steel Studs**

Base layer 5/8" type X gypsum wallboard applied without horizontal joints to 11/2" steel studs located at each corner of TS 6x6x0.188 tube steel column with 1" Type S drywall screws 24" o.c. Second layer 5/8" type X gypsum board applied without horizontal joints with 11/4" Type S drywall screws 12" o.c. Steel angle, 2"x2"x1/4", applied to all corners over second layer with 11/4" Type S drywall screws 12" o.c. in each flange. Third layer 5/8" type X gypsum wallboard applied without horizontal joints to steel angles with 1" Type S drywall screws 12" o.c. Face layer 5/8" type X gypsum wallboard applied without horizontal joints to steel angles with 11/4" Type S drywall screws 12" o.c. Metal corner bead applied to all corners with 1" Type S drywall screws 12" o.c. in each flange. Joint compound 1/4" thick applied over corner bead.

Fire Test:  
UL NC505, 77NK1747;  
6-13-77,  
UL Design X526

<table>
<thead>
<tr>
<th>GA FILE NO. CM 3680</th>
<th>GYPSUM WALLBOARD, STEEL COLUMN COVER</th>
<th>3 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic</strong></td>
<td><strong>3 Hour</strong></td>
<td><strong>Fire</strong></td>
</tr>
</tbody>
</table>

**Gypsum Wallboard, Steel Column Cover**

Base layer 5/8" regular gypsum wallboard applied around W6x15.5 column and held in place with paper masking tape. Second layer 5/8" type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer 5/8" type X gypsum wallboard applied around column and held in place with paper masking tape. Fourth layer 5/8" type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG galvanized steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG galvanized steel column covers consisting of two L-shaped sections with lap joints fastened with No. 8x5/8" sheet metal screws 1/2" o.c.

Fire Test:  
UL NC505-(1-6), 71NK2639, 12-23-76;  
UL NC505, 77NK1518;  
UL Design X526
COLUMNS, NONCOMBUSTIBLE

<table>
<thead>
<tr>
<th>GA FILE NO. CM 3601</th>
<th>GENERIC</th>
<th>3 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL STUDS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 5/8&quot; type X gypsum wallboard applied without horizontal joints to 1 1/4&quot; steel studs located at each center of 66x128.5 column with 1 1/8&quot; Type S drywall screws 24&quot; o.c. Second layer 5/8&quot; type X gypsum wallboard applied without horizontal joints with 1/4&quot; Type S drywall screws 12&quot; o.c. Steel angle, 2&quot;x2&quot;x25 ga., applied to all corners over second layer with 1 1/4&quot; Type S drywall screws 12&quot; o.c. in each flange. Third layer 5/8&quot; type X gypsum wallboard applied without horizontal joints to steel angles with 1 1/8&quot; Type S drywall screws 12&quot; o.c. Face layer 5/8&quot; type X gypsum wallboard applied without horizontal joints to steel angles with 1 1/4&quot; Type S drywall screws 12&quot; o.c. Metal corner bead applied to all corners with 1&quot; Type S drywall screws 12&quot; o.c. in each flange. Joint compound 1/4&quot; thick applied over corner bead.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL NC505, 77NK1747; 6-13-77, UL Design X528</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. CM 4110</th>
<th>GENERIC</th>
<th>4 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL COLUMN COVER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 5/8&quot; type X gypsum wallboard applied around W10x49 column and held in place with paper masking tape. Second layer 5/8&quot; type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer 5/8&quot; type X gypsum wallboard applied around column and held in place with paper masking tape. Fourth layer 5/8&quot; type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG stainless steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG stainless steel column covers consisting of two L-shaped sections with lap joints fastened with No. 6x1/2&quot; sheet metal screws 12&quot; o.c.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL NC505-(1-6), 71NK2639, 12-23-76; UL NC505, 77NK1518; UL Design X526</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GA FILE NO. CM 4322</th>
<th>PROPRIETARY*</th>
<th>4 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STEEL STUDS, GYPSUM WALLBOARD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer 1/2' proprietary type X gypsum wallboard or gypsum veneer base applied to 1 1/4&quot; steel studs located at each center of heavy steel W14x228 column with 1&quot; Type S drywall screws 12&quot; o.c. Face layer 1/2' proprietary type X gypsum wallboard or gypsum veneer base applied to studs with 1 1/4&quot; Type S drywall screws 12&quot; o.c. Metal corner bead applied with 4d coated nails, 1/8&quot; long, 0.06&quot; shank, 1/4&quot; heads, 12&quot; o.c. in each flange.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PROPRIETARY GYPSUM BOARD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>American Gypsum Company</td>
<td>1/2' FireBlock® Type C</td>
<td></td>
</tr>
<tr>
<td>BPB Americas Inc.</td>
<td>1/8' ProRock® Type C Gypsum Panels</td>
<td></td>
</tr>
<tr>
<td>G-P Gypsum</td>
<td>1/8' ToughRock® Fireguard® C</td>
<td></td>
</tr>
<tr>
<td>Lafarge North America Inc.</td>
<td>1/2' Firecheck® Type C</td>
<td></td>
</tr>
<tr>
<td>National Gypsum Company</td>
<td>1/2' Gold Band® Brand FIRE-SHIELD C™ Gypsum Wallboard</td>
<td></td>
</tr>
<tr>
<td>PACCO Gypsum</td>
<td>1/2' FLAME CURB® Super &quot;C&quot;™</td>
<td></td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
<td>1/2&quot; TG-C</td>
<td></td>
</tr>
<tr>
<td>United States Gypsum Company</td>
<td>1/2&quot; SHEETROCK® Brand FIRECODE® C Cora Gypsum Panels</td>
<td></td>
</tr>
<tr>
<td>Fire Test: UL-R1319-127, 8-20-69; Based on UL R3660-7, -6; 11-12-87; UL R7034, 90NK10635, 12-4-96; UL Design X507</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Contact the manufacturer for more detailed information on proprietary products.*
<table>
<thead>
<tr>
<th>GA FILE NO. CM 4410</th>
<th>GENERIC</th>
<th>4 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM PLASTER, METAL LATH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1⅛&quot; 12-1/3 gypsum-perlite plaster applied over 3.4 lb. self-fining expanded diamond mesh metal lath and 2⅛&quot; wide flanged expanded metal corner beads wire tied to W10x49 column with 18 gage galvanized wire 6&quot; o.c.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fire Test: UL R3187-4, -5, -7, 7-30-52, UL Design X402

<table>
<thead>
<tr>
<th>GA FILE NO. CM 4420</th>
<th>GENERIC</th>
<th>4 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM PLASTER, METAL LATH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1½&quot; 12-1/3 gypsum-perlite plaster applied over 3.4 lb. metal lath wire tied to W10x49 column with 18 gage wire 24&quot; o.c. Lath spaced 7/16&quot; away from column with ¾&quot; cold rolled channels.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fire Test: UL R3187-6, 8-7-62, UL Design X406

<table>
<thead>
<tr>
<th>GA FILE NO. CM 4600</th>
<th>GENERIC</th>
<th>4 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GYPSUM WALLBOARD, STEEL COLUMN COVER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Base layer ⅝&quot; type X gypsum wallboard applied around W6×15.5 column and held in place with paper masking tape. Second layer ⅜&quot; type X gypsum wallboard applied around column and held in place with paper masking tape. Third layer ⅞&quot; type X gypsum wallboard applied around column and held in place with paper masking tape. Fourth layer ⅝&quot; type X gypsum wallboard applied around column and held in place with paper masking tape. Fifth layer ⅞&quot; type X gypsum wallboard applied around column and held in place with paper masking tape. Face layer either No. 24 MSG stainless steel column cover consisting of two L-shaped sections with snap-lock sheet steel joints or No. 22 MSG stainless steel column covers consisting of two L-shaped sections with lap joints fastened with No.8×⅛&quot; sheet metal screws 12&quot; o.c.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fire Test: UL NC605-(1-6), 71NK2539, 12-23-76; UL NC505, 77NK1518; UL Design X526
### BEAMS, GIRDERS, AND TRUSSES, NONCOMBUSTIBLE

**GA FILE NO. BM 1137**

<table>
<thead>
<tr>
<th>PROPRIETARY*</th>
<th>1 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEEL FRAME, GYPSUM WALLBOARD</td>
<td></td>
</tr>
<tr>
<td>Base layer ½&quot; proprietary type X gypsum wallboard applied to beam cage with 1&quot; Type S-12 drywall screws 12&quot; o.c. Face layer ½&quot; proprietary type X gypsum wallboard applied to beam cage with 1¼&quot; Type S-12 drywall screws 12&quot; o.c. Joins offset from base layer joints. Beam cage fabricated from No. 24 gage ¾&quot; x 1¾&quot; steel angles screw attached to steel joints at beam top flange and No. 25 gage 2½&quot; steel runners hooked over beam lower flange and supporting ¼&quot; steel studs 24&quot; o.c. Minimum beam size 8½x15. (One hour unrestrained beam.)</td>
<td></td>
</tr>
</tbody>
</table>

**PROPRIETARY GYPSUM BOARD**

- American Gypsum Company - ½" FireBlock® Type C
- BPB America Inc. - ⅛" ProRock® Type C Gypsum Panels
- G-P Gypsum - ⅛" ToughRock® Fireguard® C
- Lafarge North America Inc. - ⅛" Firecheck® Type C
- National Gypsum Company - ⅛" Gold Bond® Brand FIRE-SHEILD C™
- Gypsum Wallboard
- PACG Gypsum - ⅛" FLAME CURL® Super "C™"
- Temple-Inland Forest Products Corporation - ⅛" TG-C
- United States Gypsum Company - ½" SHEETROCK® Brand FIRECODE® C

*Fire Test: UL R1319-133, 7-16-75; Based on UL R3663-7 & -8, 11-19-87; UL Design L524*

### GA FILE NO. BM 2120

<table>
<thead>
<tr>
<th>GENERIC</th>
<th>2 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEEL FRAME, GYPSUM WALLBOARD</td>
<td></td>
</tr>
<tr>
<td>Base layer ½&quot; type X gypsum wallboard or gypsum veneer base applied to beam cage with 1¼&quot; Type S drywall screws 12&quot; o.c. Face layer ⅜&quot; type X gypsum wallboard or gypsum veneer base applied to beam cage with ⅜&quot; Type S drywall screws 8&quot; o.c. Beam cage fabricated from horizontally installed steel angles (25 gage steel having 1&quot; and 2&quot; legs) located not less than ⅛&quot; from beam flanges, 1&quot; legs of the upper angles secured to steel deck units with ⅜&quot; Type S pan head screws 12&quot; o.c. &quot;U&quot; shaped brackets formed of 25 gage &quot;U&quot; shaped steel channels (1½&quot; wide with 1&quot; legs) 24&quot; o.c. suspended from upper angles with ⅛&quot; Type S pan head screws and supported 1&quot; x 2&quot; angles at lower corners attached to brackets with ⅛&quot; Type S pan head screws. Outside corners of gypsum board protected by 0.020&quot; thick steel corner beads clipped or nailed. Minimum beam size 8½x24. (Two hour restrained or unrestrained beam.)</td>
<td></td>
</tr>
</tbody>
</table>

*Fire Test: UL R4024-5, 9-14-66; UL Design N501; ULC Design 0501*

### GA FILE NO. BM 2130

<table>
<thead>
<tr>
<th>GENERIC</th>
<th>2 HOUR FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEEL FRAME, GYPSUM WALLBOARD</td>
<td></td>
</tr>
<tr>
<td>Base layer ⅛&quot; type X gypsum wallboard or gypsum veneer base applied to beam cage with 1¼&quot; Type S drywall screws 12&quot; o.c. Face layer ⅛&quot; type X gypsum wallboard or gypsum veneer base applied to beam cage with ⅜&quot; Type S drywall screws 8&quot; o.c. Beam cage fabricated from horizontally installed &quot;U&quot; shaped steel channels (25 gage steel 1½&quot; wide with 1&quot; legs) located not less than ⅛&quot; from beam flanges. Upper channels secured to steel deck units with ⅜&quot; Type S pan head screws 12&quot; o.c. &quot;U&quot; shaped brackets formed of steel channels 24&quot; o.c. suspended from the upper channels with ⅛&quot; Type S pan head screws and supported steel channels installed at lower corners of brackets. Outside corners of gypsum board protected by 0.020&quot; thick steel corner beads clipped or nailed. Minimum beam size 8½x24. (Two hour restrained or unrestrained beam.)</td>
<td></td>
</tr>
</tbody>
</table>

*Fire Test: UL RM024-5, 9-14-66; UL Design N502; ULC Design 0502*

*Contact the manufacturer for more detailed information on proprietary products.*
### Beams, Girders, and Trusses, Noncombustible

#### Metal Lath, Gypsum Plaster

<table>
<thead>
<tr>
<th>GA File No. BM 2221</th>
<th>Generic</th>
<th>2 Hour Fire</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1(\frac{1}{4})</strong> 1.2 mil-mixed gypsum-perlite plaster applied over 3.4 lb. diamond mesh metal lath attached to beam flange with 11 gage steel clips 9&quot; o.c. 1&quot; space between beam bottom flange and lath. Minimum beam size W6x24. (Two hour restrained beam.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fire Test: UL R4197-1, 1-29-59

---

<table>
<thead>
<tr>
<th>GA File No. BM 3110</th>
<th>Generic</th>
<th>3 Hour Fire</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1(\frac{1}{4})</strong> 1.2 mil-mixed gypsum-perlite plaster applied over 3.4 lb. diamond mesh metal lath attached to beam flange with 11 gage steel clips 9&quot; o.c. Minimum beam size W6x24. (Three hour restrained beam.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fire Test: UL R4197-1, 1-29-59

---

<table>
<thead>
<tr>
<th>GA File No. BM 3212</th>
<th>Proprietary*</th>
<th>3 Hour Fire</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ceiling Membrane Fireproofing, Metal Channels, Gypsum Wallboard</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 1/8&quot; proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to furring channels 24&quot; o.c. (double channels at end joints) with 1&quot; Type S drywall screws 12&quot; o.c. 5/8&quot; x 2(\frac{3}{4})&quot; type X gypsum wallboard strips over butt joints. Furring channels wire laced to open web steel joists 24&quot; o.c. supporting 3/4&quot; rib metal lath and 2(\frac{1}{2})&quot; concrete slab. Minimum beam size W6x35. (Three hour unrestrained beam.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(See GA File No. FC 3012)

Fire Test: UL R1319-79, 4-14-65

(Rev. 4-4-77; UL R3501, 389K1023, 11-27-89, Based on UL R3660-7, -8, 11-12-87, UL R2717-81, 8-18-87; UL Design G512)

<table>
<thead>
<tr>
<th>Proprietary Gypsum Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Gypsum Company</td>
</tr>
<tr>
<td>BPB America Inc.</td>
</tr>
<tr>
<td>G-P Gypsum</td>
</tr>
<tr>
<td>Lafarge North America Inc.</td>
</tr>
<tr>
<td>National Gypsum Company</td>
</tr>
<tr>
<td>PABCO Gypsum</td>
</tr>
<tr>
<td>Temple-Inland Forest Products Corporation</td>
</tr>
<tr>
<td>United States Gypsum Company</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>GA File No. BM 3310</th>
<th>Generic</th>
<th>3 Hour Fire</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ceiling Membrane Fireproofing, Metal Channels, Gypsum Wallboard</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One layer 1/2&quot; type X gypsum wallboard or gypsum veneer base applied at right angles to right furring channels 24&quot; o.c. with 1&quot; Type S drywall screws 12&quot; o.c. Gypsum board end joints located midway between continuous channels and attached to additional pieces of channel 54&quot; long with screws 12&quot; o.c. Furring channels 24&quot; o.c. attached with 18 gage wire ties 48&quot; o.c. to open web steel joists 24&quot; o.c. supporting 3/4&quot; rib metal lath or 1/4&quot; deep 28 gage corrugated steel and 2(\frac{1}{2})&quot; concrete slab measured from top of flue. Furring channels may be attached to 1/2&quot; cold rolled carrying channels 48&quot; o.c. suspended from joists by 8 gage wire hangers not over 48&quot; o.c. Minimum beam size W6x31. (Three hour unrestrained beam.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fire Test: UL R3501, 65K3414, 7-22-66; UL Design G514

---

*Contact the manufacturer for more detailed information on proprietary products.*
### BEAMS, GIRDERS, AND TRUSSES, NONCOMBUSTIBLE

**GA FILE NO. BM 4310**

**Generic**

**4 Hour Fire**

**Gypsum Plaster, Metal Lath**

1 1/2" 1:2 gypsum-plaster plaster applied over 3.4 lb. self-furring diamond mesh metal lath tied with 18 gage wire 6" o.c. and held 1/4" from steel. Minimum beam size W12x58. (Four hour unrestrained beam.)

Fire Test: UL R3433-4, 7-1-53, UL Design D404

---

**GA FILE NO. BM 4320**

**Generic**

**4 Hour Fire**

**Gypsum Plaster, Metal Lath**

1 1/2" 1/2" gypsum-plaster plaster applied over 3.4 lb. diamond mesh metal lath tied with 18 gage galvanized wire 4" o.c. to floor units and 6" o.c. to No. 6 gage lath hangers 22" to 28" o.c. wrapped completely around beam. Minimum beam size W12x27. (Four hour unrestrained beam.)

Fire Test: UL R3753-4, 10-3-56, UL Design A498

---

**GA FILE NO. BM 4410**

**Generic**

**4 Hour Fire**

**Gypsum Plaster, Metal Lath**

3/4" 1:2 mill-mixed gypsum-plaster plaster applied over 3.4 lb. diamond mesh metal lath wire tied to 3/4" cold rolled channels 12" o.c. with 18 gage wire. Channels wire tied with 8 gage wire to 1 1/2" cold rolled carrying channels 36" o.c. suspended from steel deck and 2" concrete slab. 3 1/2" minimum clearance from lower beam flange to top of ceiling. Minimum beam size W12x27. (Four hour unrestrained beam.)

Fire Test: UL R3574-6, 7-25-57, UL Design A403

---

**GA FILE NO. BM 4420**

**Generic**

**4 Hour Fire**

**Gypsum Plaster, Metal Lath**

1/6" 1:2-1:3 gypsum-plaster plaster applied over 3.4 lb. diamond mesh metal lath tied to 1/2" cold rolled channels 12" o.c. with 18 gage wire. Channels wire tied to 1 1/2" cold rolled carrying channels 36" o.c. suspended with 8 gage hanger wire 48" o.c. from cellular steel deck and 2" concrete slab. Minimum clearance 3 1/2" from lower beam flange to top of ceiling. Minimum beam size W12x27. (Four hour unrestrained beam.)

Fire Test: UL R3255-1, 4-30-51, UL Design A405
COMMONLY USED METRIC CONVERSIONS

Gypsum Board Thickness

\[ \frac{1}{4} \text{ in.} = 6.4 \text{ mm} \]
\[ \frac{3}{8} \text{ in.} = 9.5 \text{ mm} \]
\[ \frac{1}{2} \text{ in.} = 12.7 \text{ mm} \]
\[ \frac{5}{8} \text{ in.} = 15.9 \text{ mm} \]
\[ \frac{3}{4} \text{ in.} = 19.0 \text{ mm} \]
\[ 1 \text{ in.} = 25.4 \text{ mm} \]

Framing Spacing

\[ 16 \text{ in.} = 406 \text{ mm} \]
\[ 24 \text{ in.} = 610 \text{ mm} \]

Fastener Spacing

\[ 2 \text{ in.} = 51 \text{ mm} \]
\[ 2\frac{1}{2} \text{ in.} = 63.5 \text{ mm} \]
\[ 7 \text{ in.} = 178 \text{ mm} \]
\[ 8 \text{ in.} = 203 \text{ mm} \]
\[ 12 \text{ in.} = 305 \text{ mm} \]
\[ 16 \text{ in.} = 406 \text{ mm} \]
\[ 24 \text{ in.} = 610 \text{ mm} \]

Temperature

\[ 40^\circ \text{F} = 5^\circ \text{C} \]
\[ 50^\circ \text{F} = 10^\circ \text{C} \]
\[ 125^\circ \text{F} = 52^\circ \text{C} \]
AMERICAN GYPSUM
BPB AMERICA INC.
BPB CANADA INC.
CGC INC.
G-P GYPSUM CORPORATION
LAFARGE NORTH AMERICA INC.
NATIONAL GYPSUM COMPANY
PABCO GYPSUM
A Division of Pacific Coast Building Products, Inc.
TEMPLE-INLAND FOREST PRODUCTS CORPORATION
UNITED STATES GYPSUM COMPANY

GYPSUM ASSOCIATION

Gypsum Association
810 First Street, NE, Suite # 510
Washington, DC 20002
202-289-5440
Fax: 202-289-3707
E-mail: info@gypsum.org
http://www.gypsum.org