## CANADIAN GYPSUM AND INSULATION SYSTEMS MANUAL

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GENERAL

This manual is intended to provide architects, engineers and builders with reference data on Gypsum Board Systems incorporating CertainTeed Canada gypsum board products. It contains sections on Partitions, Exterior Walls, Floors and Ceilings, Shaftwalls, Firewalls, Cement Board and Column and Beam Protection. Each section lists the systems in ascending order of fire rating, and includes sound ratings and basic construction details.

The Gypsum Board Systems Manual is available on our web site at www.certainteed.ca. Please visit the website regularly to check for the latest revisions and version of this manual. Further assistance regarding the application of CertainTeed Canada products in Gypsum Board Systems can be obtained by calling the CertainTeed Canada office nearest you.

Check with your authority having jurisdiction regarding Codes and consult the building designer for details and site installation instructions.

Any product information, data or specifications contained in this Manual have been prepared with information available to CertainTeed Canada at the time of posting. Anyone making use of, or relying on, any information, data or specifications contained in this Manual, for any purpose whatsoever, expressly assumes any and all liability that may arise from such use or reliance. CertainTeed Canada does not assume any responsibility for any errors or omissions that may be contained in this Manual. Any information, data or specifications contained in this Manual supersede any and all previous information, data or specifications prior to this manual and are subject to change without notice.

DEFINITIONS

Fire Resistance Rating: The degree to which construction assemblies resist the passage of heat and flame is indicated by ratings determined by full scale fire resistance tests conducted in accordance with CAN/ULC-S101 or ASTM E119.

STC: Sound Transmission Class, a single number which represents the overall performance of an assembly at all sound frequencies. As per ASTM E90 and E413, the higher the STC, the more efficient the system for reducing sound transmission.

ASTC: Apparent Sound Transmission Class includes the contributions from flanking transmission of sound and therefore is a better descriptor of the acoustic performance of the building.

TESTING AUTHORITIES

Abbreviations for the testing authorities cited in this manual are as follows:

**Fire Resistance Ratings**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBCC</td>
<td>National Building Code of Canada</td>
</tr>
<tr>
<td>ULC</td>
<td>Underwriters Laboratories of Canada Inc.</td>
</tr>
<tr>
<td>ITS</td>
<td>Intertek Testing Services (Formerly Warnock Hersey International)</td>
</tr>
<tr>
<td>UL</td>
<td>Underwriters Laboratories</td>
</tr>
<tr>
<td>CUL</td>
<td>Underwriters Laboratories</td>
</tr>
<tr>
<td>NRC</td>
<td>National Research Council, Canada</td>
</tr>
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</table>

**Sound Ratings**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBCC</td>
<td>National Building Code of Canada</td>
</tr>
<tr>
<td>NRC</td>
<td>National Research Council, Canada</td>
</tr>
<tr>
<td>ITS</td>
<td>Intertek Testing Services (Formerly Warnock Hersey International)</td>
</tr>
<tr>
<td>RAL</td>
<td>Riverbank Acoustical Laboratories</td>
</tr>
<tr>
<td>OL</td>
<td>Orfield Laboratories, Inc.</td>
</tr>
<tr>
<td>NGC</td>
<td>NGC Testing Services</td>
</tr>
<tr>
<td>NOAL</td>
<td>North Orbit Acoustic Laboratories</td>
</tr>
</tbody>
</table>
FIRE RESISTANCE

Gypsum board is the most commonly used fire resistive material and is equally well known as a reliable and economic surfacing material. When used in combination with other products, excellent fire resistive and sound control properties can be achieved.

Gypsum is a naturally occurring mineral mined or quarried in many locations throughout North America and in other parts of the world. When processed into gypsum board products the chemically combined water (about 21 percent by weight) contributes to its effectiveness as a fire barrier. As gypsum protected structural members are exposed to fire, the water is slowly released as steam, effectively retarding heat transmission and acting as a fire barrier until most of the chemically combined water is eliminated, a process known as calcination. The temperature directly behind the plane of calcination is only slightly higher than that of boiling water at 100˚C (212˚F), and that is considerably below the temperature at which steel begins to lose its strength or lumber ignites. Once the gypsum is completely calcined, the residue acts as an insulating barrier to the flames.

DSG, or desulphogypsum, is high purity gypsum that is produced instead of mined. Traditionally, the gypsum raw material in the core of drywall has been mined from natural deposits. There are numerous underground and surface mines producing this gypsum for drywall manufacturing plants across North America. DSG is fundamentally the same raw material as mined gypsum, with a higher degree of purity. As a result, its properties are virtually the same as mined gypsum.

Type X and Type C Gypsum Board

There are two basic classifications of gypsum board core formulations giving different degrees of fire resistance. These are Standard and Type X gypsum board. Type X board by definition is a gypsum board that provides: a 1 hour fire endurance rating for a 15.9 mm (5/8") thickness when applied in a single layer and properly fastened to each side of 92 mm (3-5/8") steel framing members.

OR

A 2 hour fire resistant rating for a 12.7 mm (1/2") thick Type C board when applied in a double layer and properly fastened to each side of 64 mm (2-1/2") steel framing members, when tested in accordance with CAN/ULC-S101.

Type X gypsum boards manufactured by CertainTeed Canada are described as either EGRG, GlasRoc®, Shaftliner, GlasRoc® Shaftliner, or Type X and these products are classified/listed by Underwriters Laboratories and Underwriters Laboratories of Canada.

CertainTeed Type C products and CertainTeed M2Tech® Type C products are proprietary products which meet the requirements of Type X and have further enhanced fire resistive properties. These products are often referred to as “Type C” gypsum board, although there is no industry definition for “Type C” gypsum board.

All CertainTeed Type X, CertainTeed Type C, M2Tech® Moisture and Mold Resistant Type X, M2Tech® Type C, CertainTeed Veneer Plaster Base Type X, Extreme Abuse M2Tech® Type X, M2Tech® Shaftliner Type X, GlasRoc® Sheathing Type X, GlasRoc® Shaftliner Type X, Diamondback® GlasRoc® Tile Backer Type X, AirRenew® M2Tech® Type X, AirRenew® Essential Type X, Easi-Lite® 30, SilentFX® QuickCut™ Type X, Abuse Resistant Type C, Extreme Abuse M2Tech® Type X and Extreme Impact M2Tech® Type X products meet both the CSA and ASTM definitions of Type X gypsum board.

Fire Resistance Tests

There are a number of independent testing authorities capable of conducting fire tests to establish fire resistance classifications according to procedures outlined in:


The conditions for tests are thoroughly detailed and the time of failure is the time at which there is excessive heat transmission, passage of flame or structural failure. In addition, failure may result because of penetration by a pressurized hose stream required in the fire test procedure for wall assemblies.
The CAN/ULC-S101 standard, prescribes how various wall, floor, roof, column and beam assemblies are tested. These assemblies are one-sided exposed to a furnace that follows a standard cellulose time-temperature curve.

All of the assemblies tested and classified must be at least 9.3 m² (100 ft²) with no side dimension less than 2.75 m (9 feet). Temperatures are measured at a minimum of nine points on the unexposed surface of the assembly. When testing loadbearing assemblies, the working stress load is applied during the fire test.

The assembly must also stop flame or hot gasses capable of igniting cotton waste. The average temperature of the unexposed surface cannot increase more than 139 ℃ (250 ℉) above ambient nor shall the temperature rise at any individual point exceed 181 ℃ (325 ℉). It is also required that a duplicate of the assembly be fire tested for half the specified resistance period, after which it must withstand the impact, erosion and cooling effect of water under high pressure from a fire hose.

Floor and roof assemblies tested and classified have to be a minimum of 16.8 m² (180 ft²) with neither dimension less than 3.66 m (12 feet). The assemblies must sustain the design load throughout the test and not allow either flame or hot gasses, capable of igniting cotton waste, to pass through. The unexposed surface temperature may not rise more than an average of 139 ℃ (250 ℉) above the initial temperature nor shall the temperature rise at any individual point exceed 181 ℃ (325 ℉).

**Surface Burning Characteristics**

Flame spread ratings are intended as a guide in the selection and use of finishing materials and are obtained by measuring the extent and rapidity with which flames spread over their surfaces under test conditions.

Under certain circumstances some building codes may require the use of interior finish materials with a flame spread rating of not more than 25. The laboratory test generally used to establish a material’s flame spread characteristic is referred to as the Steiner Tunnel test.

CAN/ULC-S102 “Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.”

This test measures relative flame spread, fuel contribution and the amount of smoke developed from the material being tested.

A method of numerical classification to permit comparison of a given material’s flame spread performance with that of another has been established.

**Flame Spread Rating**

<table>
<thead>
<tr>
<th>Material</th>
<th>Flame Spread Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos cement board</td>
<td>0 (control classification)</td>
</tr>
<tr>
<td>Gypsum plaster</td>
<td>0</td>
</tr>
<tr>
<td>Gypsum lath</td>
<td>10</td>
</tr>
<tr>
<td>Gypsum board</td>
<td>10-15</td>
</tr>
<tr>
<td>Gypsum sheathing</td>
<td>15-20</td>
</tr>
<tr>
<td>Red oak</td>
<td>100 (control classification)</td>
</tr>
</tbody>
</table>
SOUND CONTROL

Sound Transmission Class (STC)
Drywall construction systems are tested to establish their sound insulation characteristics and airborne sound insulation is reported as the Sound Transmission Class (STC).

ASTM Standard E90, “Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions”, outlines a procedure for measuring sound transmission loss which is the difference between the sound energy in a source room and a receiving room when the two rooms are separated by the assembly being tested. The sound transmission loss is measured at different test frequencies and this data is used to obtain a single number known as the STC rating calculated in accordance with ASTM E413.

Apparent Sound Transmission Class (ASTC).
ASTC includes the contributions from flanking transmission of sound and therefore is a better descriptor of the acoustic performance of the building. The ASTC rating between dwelling units must be 47 or greater for compliance with the 2015 NBCC.

Sound Insulation
STC values stated are based on laboratory tests. The actual STC ratings of assemblies as constructed may be significantly less due to deviations from the design or specified materials, flanking paths or poor workmanship. It is essential to the attenuation of airborne sound transmission that air leaks and flanking paths must be closed off or sound will go around an assembly. Hairline cracks or small 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 assemblies.

Assemblies should be airtight. Recessed wall fixtures such as medicine cabinets, or electrical, telephone and television outlets, which perforate the gypsum board surface, should not be located back-to-back or in the same cavity. In addition, any opening for such fixtures and for piping outlets should be carefully cut to proper size and caulked. The entire perimeter of a sound insulating assembly must be made airtight to prevent sound flanking. An acoustical caulking compound or acoustical gasket should be used to seal between the assembly and all dissimilar surfaces. Taping gypsum board wall and wall-ceiling intersections provides an adequate air seal at these locations. Details of some typical problem areas and their recommended treatments are shown in the accompanying illustrations.

Visit www.certainteed.ca for the latest version of this manual.
# Sound Isolation Construction

<table>
<thead>
<tr>
<th><strong>“NORMAL CONSTRUCTION”</strong></th>
<th><strong>“SELECT CONSTRUCTION”</strong></th>
<th><strong>“PRE-DESIGN” CONSTRUCTION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not suitable for good sound control. Arrows show flanking paths</td>
<td>Caulking of relief detail at perimeter of partition to prevent sound leakage</td>
<td>Simulating laboratory conditions</td>
</tr>
</tbody>
</table>

### Wood Stud System

- **Elevation**
  - Under and Over Partitions

### Steel Stud System

- **Plan**
  - Through Partitions, Openings, Outlet Boxes

### Wood Stud Caulk

### Metal Stud Caulk

- **Plan**
  - Indicating Caulking of Openings Through Partitions

### Gasket

- **Elevation**
  - Typical Floor-Ceiling or Roof Detail
  - Void between box and wallboard caulked

- **Plan**
  - Outlet Box Detail
  - Electrical box with extension ring

### Offset boxes minimum of one stud space and caulk openings

### Window Mullion

- **Plan**
  - Around Flanking Partition Ends

- **Plan**
  - Typical Partition Mullion Intersection

### Caulk or Tape

- **Plan**
  - Intersection With Exterior Wall

### Caulk or Tape

- **Plan**
  - Intersection With Interior Wall

### Caulk or Tape

- **Plan**
  - Typical Partition Intersections
2015 National Building Code of Canada

APPARENT SOUND TRANSMISSION CLASS (ASTC)

In previous editions of the National Building Code of Canada (NBCC), sound insulation requirements between dwelling units were presented in terms of Sound Transmission Class (STC).

In the NBCC 2015, sound insulation requirements are now also presented in terms of Apparent Sound Transmission Class (ASTC). ASTC includes the contributions from flanking transmission of sound and therefore is a better descriptor of the acoustic performance of the building. The ASTC rating between dwelling units must be 47 or greater for compliance with the 2015 NBCC.

CertainTeed Canada contracted with the National Research Council Canada (NRC-CNRC) to conduct extensive testing and calculation programs for SilentFX® QuickCut™ Gypsum Board on wood and steel stud wall assemblies with example assemblies provided on the following page. For complete details of the ASTC programs, please refer to NRC-CNRC Reports A1-007750.3 (Wood Stud Walls) and A1-010179.1 (Steel Stud Walls) on the NRC-CNRC website or contact CertainTeed Marketing Technical Services at 1-800-446-5284.

TYPICAL SOUND FLANKING PATHS FOR WOOD FRAME CONSTRUCTION

TYPICAL SOUND FLANKING PATHS FOR STEEL FRAME CONSTRUCTION

CALCULATED STC RATINGS

Not all of the assemblies in this catalogue have been individually tested. Where no specific test data is available, a rating, calculated in accordance with the requirements of ASTM E413, is provided for guidance only. CertainTeed Canada makes no claim that these calculated ratings comply with, or are acceptable under, any building code.

An estimated STC rating, based on results of a similar assembly tested in accordance with recognized standards, will be clearly indicated. This is a judgement of how the particular assembly might react, however, actual performance may differ.

If specific compliance is required, tests should be conducted.
BUILDING CODES
Within Canada, Building Codes govern among other items, the type, use and application of construction materials. It is therefore important that the user, when determining the suitability of products and assemblies outlined in this manual, ensure that the requirements of the applicable Building Code(s) have been met.

MATERIAL AND APPLICATION STANDARDS
Gypsum board products and many of the accessories that are utilized in the construction and/or finishing of gypsum board are covered by standards. These standards set forth minimum requirements for their physical and/or performance characteristics, limits of use and methods of application.

The following major Standards Writing Authorities are cited in this manual.
ASTM American Society for Testing and Materials
CSA Canadian Standards Association
GA Gypsum Association

CertainTeed Canada Materials
CertainTeed Canada gypsum board products are manufactured to meet or exceed the following standards.

<table>
<thead>
<tr>
<th>CertainTeed Canada Gypsum Board Product</th>
<th>Standard(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CertainTeed Regular + 54”</td>
<td>CAN/CSA-A82.27, ASTM C1396</td>
</tr>
<tr>
<td>CertainTeed Type X + Type C</td>
<td>CAN/CSA-A82.27, ASTM C1396</td>
</tr>
<tr>
<td>CertainTeed Interior Ceiling</td>
<td>CAN/CSA-A82.27, ASTM C1396</td>
</tr>
<tr>
<td>Easi-Lite® Interior Ceiling</td>
<td>CAN/CSA-A82.27, ASTM C1396</td>
</tr>
<tr>
<td>Easi-Lite® Veneer Plaster Base</td>
<td>CAN/CSA-A82.27, ASTM C1396</td>
</tr>
<tr>
<td>M2Tech® Regular, Type X, Type C, Shaftliner</td>
<td>CAN/CSA-A82.27, ASTM C1396</td>
</tr>
<tr>
<td>GlasRoc® Shaftliner</td>
<td>ASTM C1658</td>
</tr>
<tr>
<td>GlasRoc® Sheathing + Type X</td>
<td>ASTM C1177</td>
</tr>
<tr>
<td>GlasRoc® Interior</td>
<td>ASTM C1658</td>
</tr>
<tr>
<td>Diamondback® Tile Backer + Type X</td>
<td>ASTM C1178</td>
</tr>
<tr>
<td>AirRenew® M2Tech® + Type X</td>
<td>CAN/CSA-A82.27, ASTM C1396</td>
</tr>
<tr>
<td>AirRenew® Essential + Type X</td>
<td>CAN/CSA-A82.27, ASTM C1396</td>
</tr>
<tr>
<td>SilentFX® QuickCut™ + Type X</td>
<td>CAN/CSA-A82.27, ASTM C1396</td>
</tr>
<tr>
<td>Habito®</td>
<td>CAN/CSA-A82.27, ASTM C1396</td>
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</table>

Accessory Materials
The materials used in conjunction with CertainTeed Canada gypsum board products should be manufactured to meet or exceed the following standards.

<table>
<thead>
<tr>
<th>Material</th>
<th>Standard(s)</th>
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<tbody>
<tr>
<td>Steel Stud</td>
<td>ASTM C645, ASTM C955</td>
</tr>
<tr>
<td>Steel Track</td>
<td>ASTM C645, ASTM C955</td>
</tr>
<tr>
<td>Steel Furring Channel</td>
<td>ASTM C645</td>
</tr>
<tr>
<td>Wood Framing Members</td>
<td>CAN/CSA O141</td>
</tr>
<tr>
<td>Drywall Screws</td>
<td>ASTM C1002, ASTM C954</td>
</tr>
<tr>
<td>Drywall Nails</td>
<td>CSA B111, ASTM C514</td>
</tr>
<tr>
<td>Adhesives</td>
<td>ASTM C557</td>
</tr>
<tr>
<td>Joint Compounds</td>
<td>ASTM C475</td>
</tr>
<tr>
<td>Joint Tape</td>
<td>ASTM C475</td>
</tr>
<tr>
<td>Gypsum Plaster</td>
<td>ASTM C28</td>
</tr>
<tr>
<td>Accessories</td>
<td>ASTM C1047</td>
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</table>

Application Standards
NBCC National Building Code of Canada
CAN/CSA-A82.31 Gypsum Board Application
ASTM C840 Application and Finishing of Gypsum Board
ASTM C844 Application of Gypsum Base to Receive Gypsum Veneer Plaster
ASTM C1280 Application of Exterior Gypsum Panel Products for Use as Sheathing
Gypsum Association, GA-216, GA-253, and GA-214
CANADIAN GYPSUM AND INSULATION SYSTEMS MANUAL

INTRODUCTION

ASSEMBLY CODES

Walls

Wallboard → Fire Resistance Rating → STC

A: Firewall
B: Block
C: Chase
EB: Exterior Bearing
IB: Interior Bearing
P: Partition
S: Shaftwall
X: Exterior

 Partition Fire Resistance Rating

A: 41 mm (1-5/8") Steel stud
B: 64 mm (2-1/2") Steel stud
C: 92 mm (3-5/8") or 89 mm (3-1/2") Steel stud
D: C-H, C-T, or I stud
E: Wood stud
H: H stud

Floor-Ceilings

Wallboard → Fire Resistance Rating → STC

Floor

Floor-Ceilings Fire Resistance Rating

F: Wood Joists
S: Steel Joists

Columns and Beams

Wallboard → Fire Resistance Rating

A: Design A
B: Design B

Columns and Beams Fire Resistance Rating

C: Column
B: Beam

PermaBase

PermaBase → Fire Resistance Rating → STC

Partition

PermaBase Fire Resistance Rating

A: 41 mm (1-5/8") Steel stud
B: 92 mm (3-5/8") or 89 mm (3-1/2") Steel stud
C: Wood stud
ASTC STEEL STUD ASSEMBLIES

<table>
<thead>
<tr>
<th>ASTC</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTC 47</td>
<td>System WPC147</td>
<td>• 92 mm (3-5/8&quot;) .46 mm (.018&quot;) steel studs 406 mm (16&quot;) o.c. <strong>ONE SIDE</strong> • 15.9 mm (5/8&quot;) SilentFX® QuickCut™ Type X applied with 25 mm (1&quot;) type S screws 200 mm (8&quot;) o.c. along edges of board and 300 mm (12&quot;) o.c. in the field. <strong>OPPOSITE SIDE</strong> • 15.9 mm (5/8&quot;) CertainTeed Type X applied with 25 mm (1&quot;) type S screws 200 mm (8&quot;) o.c. along edges of board and 300 mm (12&quot;) o.c. in the field. All joints staggered. • 89 mm (3-1/2&quot;) CertainTeed NoiseReducer™ Sustainable Insulation™ or equivalent.</td>
<td>FIRE: 1 hr. cUL U465, V450, V486 SOUND: NRC Report AI-010179.1 Example 2</td>
</tr>
</tbody>
</table>

For additional information, please see the full NRC report at: [http://doi.org/10.4224/23002223](http://doi.org/10.4224/23002223)

| ASTC 48 | System WPC148 | • 92 mm (3-5/8") .46 mm (.018") steel studs 406 mm (16") o.c. **ONE SIDE** • 15.9 mm (5/8") SilentFX® QuickCut™ Type X applied with 25 mm (1") type S screws 200 mm (8") o.c. along edges of board and 300 mm (12") o.c. in the field. **OPPOSITE SIDE** • 15.9 mm (5/8") SilentFX® QuickCut™ Type X applied with 25 mm (1") type S screws 200 mm (8") o.c. along edges of board and 300 mm (12") o.c. in the field. All joints staggered. • 89 mm (3-1/2") CertainTeed NoiseReducer™ Sustainable Insulation™ or equivalent. | FIRE: 1 hr. cUL U465, V450, V486 SOUND: NRC Report AI-010179.1 Example 1 |

For additional information, please see the full NRC report at: [http://doi.org/10.4224/23002223](http://doi.org/10.4224/23002223)

*Refer to NRC report for flanking paths*
ASTC WOOD STUD ASSEMBLIES

<table>
<thead>
<tr>
<th>ASTC (APPARENT SOUND TRANSMISSION CLASS)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
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</thead>
<tbody>
<tr>
<td>FIRE RESISTANCE RATING: 1h</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**System WPE150**

- 38 x 89 mm (2” x 4”) wood studs 406 mm (16”) o.c. staggered 200 mm (8”) o.c. on 150 mm (6”) plates.

**ONE SIDE**

- 15.9 mm (5/8”) SilentFX® QuickCut™ Type X applied with 32 mm (1-1/4”) type W screws 200 mm (8”) o.c.
- 89 mm (3-1/2”) CertainTeed NoiseReducer™ Sustainable Insulation or equivalent opposite side
- 15.9 mm (5/8”) CertainTeed Type X applied with 32 mm (1-1/4”) type W screws 200 mm (8”) o.c. All joints staggered

FOUR SIDES

**FIRE:**

- cUL U340
- ULC W313

**SOUND:**

- NRC A1-007750.3 Example 2

**Example with 300 mm (12”) screw spacing**

**System WPE154**

- Common single staggered wood stud wall.
- All other walls are triple staggered wood stud walls.
- One layer of 15.9 mm (5/8”) CertainTeed SilentFX® QuickCut™ Type X gypsum board directly fixed to the wood studs of all walls.
- One layer of 15 mm OSB on the floors.

**FIRE:**

- cUL U340
- ULC W313

**SOUND:**

- NRC A1-007750.3 Example 1

For additional information, please see the full NRC report at:

http://doi.org/10.4224/23002826

ASTC FLOOR/CEILING ASSEMBLIES

<table>
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<tr>
<th>ASTC (APPARENT SOUND TRANSMISSION CLASS)</th>
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<th>DESCRIPTION</th>
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<tr>
<td>FIRE RESISTANCE RATING: 1h</td>
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</table>

**System WFF150**

Fire rated floor BXUV/M5351 with a bare 15 mm (19/32”) OSB subfloor.
Wall framing includes single and triple staggered wood studs.
One layer of 15.9 mm (5/8”) CertainTeed SilentFX® QuickCut™ Type X gypsum board directly attached to the wood studs in both the upper and the lower rooms.

**FIRE:**

- cUL U465
- V450, V486

**SOUND:**

- NRC A1-007750.3 Example 52
# STEEL STUD PARTITIONS

## Non-Loadbearing

<table>
<thead>
<tr>
<th>STC (SOUND TRANSMISSION CLASS)</th>
<th>CONSTRUCTION</th>
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<tr>
<td><strong>FIRE RESISTANCE RATING: 3/4h</strong></td>
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</table>
| **STC 35** | C | System WPB035 | 15.9 mm (5/8") CertainTeed Type X products, 1 layer, each side of 64 mm (2-1/2") steel studs. Fasten boards vertically using 32 mm (1-1/4") screws spaced 200 mm (8") o.c. along floor and ceiling tracks, and 300 mm (12") o.c. along edge joints and in the field. Joints must be offset. Tape and finish joints with CertainTeed products. | FIRE: ULC W409  
SOUND: NBCC (2015)  
Table A-9.10.3.1A  
Wall S1c |
| **STC 39** | C | System WPC139 | 15.9 mm (5/8") CertainTeed Type X products, 1 layer, each side of 92 mm (3-5/8") steel studs. Fasten boards vertically or horizontally using 25 mm (1") Type S screws spaced 200 mm (8") o.c. along edge joints, floor and ceiling tracks, and 300 mm (12") o.c. in the field. Joints must be offset. If boards are applied horizontally, horizontal edge joints and horizontal butt joints need not be staggered or backed by steel framing. Fasten boards horizontally using 25 mm (1") screws spaced 200 mm (8") o.c. Tape and finish joints with CertainTeed products. | FIRE: ULC U411,  
cUL U465  
SOUND: RAL-TL07-361 |
| **STC 44** | C | System WPB144 | 12.7 mm (1/2") CertainTeed Type C products, 1 layer, each side of 64 mm (2-1/2") steel studs. Mineral wool insulation 38 mm (1-1/2") within cavity. Fasten boards vertically using 25 mm (1") screws spaced 200 mm (8") o.c. along edge joints, floor and ceiling tracks, and 300 mm (12") o.c. in the field. Joints must be offset. Tape and finish joints with CertainTeed products. | FIRE: ULC U411  
SOUND: NOAL 18-0644 |
| **STC 45** | C | System WPB145 | 15.9 mm (5/8") CertainTeed Type X products, 1 layer, each side of 64 mm (2-1/2") steel studs. CertainTeed’s Sustainable Insulation™ 65 mm (2-1/2") within cavity. Fasten boards vertically using 25 mm (1") screws spaced 200 mm (8") o.c. along floor and ceiling tracks, and 300 mm (12") o.c. along edge joints and in the field. Joints must be offset. Tape and finish joints with CertainTeed products. | FIRE: ULC U411  
SOUND: NOAL 18-0649 |
| **STC 50** | C | System WPC150 | 15.9 mm (5/8") CertainTeed Type X products, 1 layer, each side of 92 mm (3-5/8") steel studs. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2") within cavity. Fasten boards vertically using 25 mm (1") screws spaced 200 mm (8") o.c. along edge joints, floor and ceiling tracks, and 300 mm (12") o.c. in the field. Joints must be offset. Tape and finish joints with CertainTeed products. | FIRE: ULC U411,  
cUL U465  
SOUND: NOAL 18-0652 |
| **STC 50** | C | System WPB150 | 12.7 mm (1/2") CertainTeed Type C products, 1 layer on one side, 2 layers on the other side of 63.5 mm (2-1/2") steel studs. CertainTeed’s Sustainable Insulation™ 65 mm (2-1/2") within cavity. Fasten one side vertically using 25 mm (1") screws spaced 203 mm (8") o.c. at the perimeter and 305 mm (12") in the field. Opposite side applied vertically. Base layer installed with 25 mm (1") screws spaced 406 mm (16") and face layer installed with 41 mm (1-5/8") screws spaced 406 mm (16") o.c. offset 203 mm (8") from base layer screws. Joints staggered. | FIRE: ULC W498  
SOUND: OL 18-1013 |
STEEL STUD PARTITIONS
Non-Loadbearing

<table>
<thead>
<tr>
<th>STC (SOUND TRANSMISSION CLASS)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>FIRE RESISTANCE RATING</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
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<tbody>
<tr>
<td>STC 52</td>
<td>System WPC152</td>
<td>12.7 mm (1/2&quot;) CertainTeed Type C products, 2 layers one side, 1 layer other side of 92 mm (3-5/8&quot;) steel studs. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity. Fasten one side vertically using 25 mm (1&quot;) screws spaced 203 mm (8&quot;) o.c. at the perimeter and 305 mm (12&quot;) in the field. Opposite side applied vertically. Base layer installed with 25 mm (1&quot;) screws spaced 406 mm (16&quot;) and face layer installed with 41 mm (1-5/8&quot;) screws spaced 406 mm (16&quot;) o.c. offset 203 mm (8&quot;) from base layer screws. Joints staggered. Tape and finish outer layer joints with CertainTeed products.</td>
<td>FIRE: ULC W498</td>
<td>SOUND: NOAL 18-0654</td>
</tr>
<tr>
<td>STC 53</td>
<td>System WPC153</td>
<td>15.9 mm (5/8&quot;) CertainTeed Type X products, 1 layer on one side, 2 layers other side of 92 mm (3-5/8&quot;) 0.46 mm (18 mils) steel studs. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity. Fasten base layers vertically using 25 mm (1&quot;) screws spaced 200 mm (8&quot;) o.c. along edge joints, and 300 mm (12&quot;) o.c. in the field. Fasten second layer vertically or horizontally on one side using 41 mm (1-5/8&quot;) screws spaced 300 mm (12&quot;) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</td>
<td>FIRE: ULC U411, cUL U465</td>
<td>SOUND: NOAL 18-0653</td>
</tr>
<tr>
<td>STC 55</td>
<td>System WCA155</td>
<td>15.9 mm (5/8&quot;) CertainTeed Type X products, 1 layer, each side of paired 41 mm (1-5/8&quot;) 0.46 mm (18 mils) steel studs. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity. Attach 15.9 mm x 241 mm x 305 mm (5/8&quot; x 9-1/2&quot; x 12&quot;) CertainTeed Type X products bridging 1220 mm (48&quot;) o.c. to steel studs using screws (3 per stud). Fasten boards vertically using 25 mm (1&quot;) Type S screws spaced 203 mm (8&quot;) o.c. along edge joints, floor and ceiling tracks, and 305 mm (12&quot;) o.c. in the field. Joints must be offset. Tape and finish joints with CertainTeed products.</td>
<td>FIRE: cUL U420, cUL U465</td>
<td>SOUND: OL 18-1005</td>
</tr>
<tr>
<td>STC 56</td>
<td>System WPC156</td>
<td>92 mm (3-5/8&quot;), 0.46 mm (18 mils) steel studs 610 mm (24&quot;) o.c. One side, 15.9 mm (5/8&quot;) SilentFX® QuickCut™ Type X applied horizontally with 25 mm (1&quot;) type S screws 305 mm (12&quot;) o.c. Opposite side, 15.9 mm (5/8&quot;) CertainTeed Type X applied horizontally with 25 mm (1&quot;) type S screws 305 mm (12&quot;) o.c. All joints staggered. 89 mm (3-1/2&quot;) CertainTeed’s NoiseReducer™ Sound Attenuation Batts in the stud cavities.</td>
<td>FIRE: cUL U465</td>
<td>SOUND: OL 17-0221</td>
</tr>
<tr>
<td>STC 58</td>
<td>System WPC158</td>
<td>15.9 mm (5/8&quot;) CertainTeed SilentFX® QuickCut™ Type X. 1 layer, each side of 92 mm (3-5/8&quot;) 0.84 mm (33 mils) thick studs, 610 mm (24&quot;) o.c. spaced steel studs. CertainTeed Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity. Fasten boards vertically using 25 mm (1&quot;) screws spaced 305 mm (12&quot;) o.c. in the field, and 203 mm (8&quot;) along the top and bottom edges of the wall. Joints centered over studs. Joints on opposite sides of studs, staggered by at least one stud spacing. Acoustical sealant applied in perimeter gap. Tape and finish joints with CertainTeed products.</td>
<td>FIRE: cUL U465</td>
<td>SOUND: OL 17-0228</td>
</tr>
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NOTE: For other high STC assemblies see 2 hour fire ratings
# STEEL STUD PARTITIONS

## Non-Loadbearing

<table>
<thead>
<tr>
<th>STC (SOUND TRANSMISSION CLASS)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
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<tbody>
<tr>
<td><strong>STC 58</strong></td>
<td></td>
<td><strong>FIRE RESISTANCE RATING:</strong> 1h (continued)</td>
<td></td>
</tr>
</tbody>
</table>
| ![Diagram](610 mm (24") x 610 mm (24") x 143 mm (5-5/8")) | | **System WCB158** | FIRE: cUL V469  
SOUND: NOAL 18-0651 |
| Thickness: 184 mm (7-1/3")  
Weight: 26.85 kg/m² (5.5 lb/ft²) | 15.9 mm (5/8") CertainTeed Type X products or Diamondback® Tile Backer Type X, 1 layer either sides of double row 64 mm (2-1/2") wide 0.46 mm (18 mils) studs separated by 25 mm (1") air space. 22 mm x 22 mm (7/8" x 7/8") 0.84 mm (33 mils) channels as horizontal bracing a minimum of every 1524 mm (60").  
CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2") within both cavities.  
Vertical application: Boards installed with 25 mm (1") Type S-12 screws spaced 203 mm (8") o.c. on each side of the assembly. Joints staggered.  
Horizontal application: Boards installed with 25 mm (1") Type S-12 screws spaced 203 mm (8") o.c. on each side of the assembly. Joints need not be staggered. | |
| **STC 60** | | **System WCA160** | FIRE: cUL U420,  
SOUND: OL 18-1006 |
| ![Diagram](610 mm (24") x 610 mm (24") x 143 mm (5-5/8")) | 15.9 mm (5/8") CertainTeed Type X products, 1 layer on one side, 2 layers other side of paired 64 mm (2-1/2") steel studs. CertainTeed’s Sustainable Insulation™ 64 mm (2-1/2") each side within cavity.  
Attach 241 mm x 305 mm (9-1/2" x 12") CertainTeed Type X products bridging 1220 mm (48") o.c. to steel studs using screws (3 per stud). Fasten base layers vertically using 25 mm (1") screws spaced 203 mm (8") o.c. along edge joints, and 305 mm (12") o.c. in the field. Fasten second layer vertically or horizontally on one side using 41 mm (1-5/8") screws spaced 203 mm (8") o.c. at the joints and 305 mm (12") o.c. in the field. Joints must be offset. Tape and finish outer layer joints with CertainTeed products. | |
| Thickness: 143 mm (5-5/8")  
Weight: 41 kg/m² (8.4 lb/ft²) | **FIRE RESISTANCE RATING:** 2h | **System WPB246** | FIRE: ULC U411  
SOUND: NOAL 18-0648 |
| ![Diagram](600 mm (24") x 600 mm (24") x 114 mm (4-1/2")) | 12.7 mm (1/2") CertainTeed Type C products, 2 layers, each side of 64 mm (2-1/2") steel studs.  
Fasten base layers vertically using 25 mm (1") screws spaced 300 mm (12") o.c. Fasten face layers vertically using 41 mm (1-5/8") screws spaced 300 mm (12") o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products. | |
| Thickness: 114 mm (4-1/2")  
Weight: 39.13 kg/m² (8.01 lb/ft²) | **System WPB249** | FIRE: cUL U411  
SOUND: NOAL 18-0642 |
| ![Diagram](600 mm (24") x 600 mm (24") x 127 mm (5")) | 15.9 mm (5/8") CertainTeed Type X products, 2 layers, each side of 64 mm (2-1/2") steel studs.  
Fasten base layers vertically using 25 mm (1") screws spaced 406 mm (16") o.c. Fasten face layers vertically using 41 mm (1-5/8") screws spaced 406 mm (16") o.c. in the field and along the vertical edges and 300 mm (12") o.c. to the floor and ceiling runners. Joints must be offset. Tape and finish outer layer joints with CertainTeed products. | |
| Thickness: 127 mm (5")  
Weight: 44.87 kg/m² (9.19 lb/ft²) | **System WPB251** | FIRE: ULC U411  
SOUND: NOAL 18-0647 |
| ![Diagram](600 mm (24") x 600 mm (24") x 114 mm (4-1/2")) | 12.7 mm (1/2") CertainTeed Type C products, 2 layers, each side of 64 mm (2-1/2") steel studs. CertainTeed’s Sustainable Insulation™ 64 mm (2-1/2") within cavity.  
Fasten base layers vertically using 25 mm (1") screws spaced 300 mm (12") o.c. Fasten face layers vertically using 41 mm (1-5/8") screws spaced 300 mm (12") o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products. | |
| Thickness: 114 mm (4-1/2")  
Weight: 39.82 kg/m² (8.16 lb/ft²) | **System WPC253** | FIRE: cUL U411  
SOUND: NOAL 18-0660 |
| ![Diagram](610 mm (24") x 610 mm (24") x 171 mm (6-3/4")) | 15.9 mm (5/8") CertainTeed Type X products, 3 layers on one side, 2 layers other side of 92 mm (3-5/8") steel studs. No insulation.  
Fasten base layers vertically using 25 mm (1") screws spaced 406 mm (16") o.c.  
Fasten second layers vertically using 41 mm (1-5/8") screws spaced 406 mm (16") to the studs and 305 mm (12") o.c. to the floor and ceiling runners. o.c.  
Fasten third layer vertically with 57 mm (2-1/4") screws spaced 305 mm (12") o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products. | |
| Thickness: 171 mm (6-3/4")  
Weight: 56.39 kg/m² (11.59 lb/ft²) | **System WPC253** | |

CertainTeed Canada, Inc.  
2424 Lakeshore Rd. W., Mississauga, ON L5J 1K4  
Professional: 800-233-8990  
Consumer: 800-782-8777  
certainteed.ca
## STEEL STUD PARTITIONS

### Non-Loadbearing

<table>
<thead>
<tr>
<th>STC</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>FIRE RESISTANCE RATING: 2h (continued)</th>
</tr>
</thead>
</table>
| STC 55 | ![Stud Configuration](image) | 15.9 mm (5/8") CertainTeed Type X products, 2 layers, each side of 64 mm (2-1/2") 0.46 mm (18 mils) steel studs. CertainTeed's Sustainable Insulation™ 64 mm (2-1/2") within cavity. Fasten base layers vertically using 25 mm (1") screws spaced 406 mm (16") o.c. Fasten face layers vertically using 41 mm (1-5/8") screws spaced 406 mm (16") o.c. on studs and 305 mm (12") o.c. on floor and ceiling runners. o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products. | FIRE: cUL U411  
SOUND: NOAL 18-0641 |
| STC 57 | ![Stud Configuration](image) | 15.9 mm (5/8") CertainTeed Type X products, 2 layers, each side of 64 mm (2-1/2") 0.46 mm (18 mils) steel studs. CertainTeed's Sustainable Insulation™ 69 mm (3") within cavity. Fasten base layers vertically using 25 mm (1") screws spaced 406 mm (16") o.c. Fasten face layers vertically using 41 mm (1-5/8") screws spaced 406 mm (16") o.c. on studs and 305 mm (12") o.c. on floor and ceiling runners. o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products. | FIRE: cUL U411  
SOUND: NOAL 18-0658 |
| STC 57 | ![Stud Configuration](image) | 12.7 mm (1/2") CertainTeed Type C products, 2 layers, each side of 64 mm (2-1/2") 0.46 mm (18 mils) steel studs. CertainTeed's Sustainable Insulation™ 69 mm (3") within cavity. Fasten base layers vertically using 25 mm (1") screws spaced 300 mm (12") o.c. Fasten face layers vertically using 41 mm (1-5/8") screws spaced 300 mm (12") o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products. | FIRE: ULC U411  
SOUND: NGC 2006049 |
| STC 58 | ![Stud Configuration](image) | 15.9 mm (5/8") CertainTeed Type X products, 3 layers on one side, 2 layers other side of 92 mm (3-5/8") steel studs. CertainTeed's Sustainable Insulation™ 89 mm (3-1/2") within cavity. Fasten base layers vertically using 25 mm (1") screws spaced 406 mm (16") o.c. Fasten second layers vertically using 41 mm (1-5/8") screws spaced 406 mm (16") o.c. on studs and 305 mm (12") o.c. on floor and ceiling runners. o.c. Fasten third layer vertically with 57 mm (2-1/4") screws spaced 305 mm (12") o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products. | FIRE: cUL U411  
SOUND: NOAL 18-0659 |
| STC 60 | ![Stud Configuration](image) | 92 mm (3-5/8"), 46 mm (.18") steel studs 610 mm (24") o.c. One side, Face layer 15.9 mm (5/8") SilentFX® QuickCuts Type X applied with 41 mm (1-5/8") type S screws 406 mm (16") o.c. in the field and along the vertical edges and 305 mm (12") o.c. to the floor and ceiling runners. Base layer 15.9 mm (5/8") CertainTeed Type X applied with 25 mm (1") type S screws 305 mm (12") o.c. Opposite side, Base layer 15.9 mm (5/8") CertainTeed Type X applied with 25 mm (1") type S screws 305 mm (12") o.c. Face layer 15.9 mm (5/8") CertainTeed Type X applied with 41 mm (1-5/8") type S screws 406 mm (16") o.c. in the field and along the vertical edges and 305 mm (12") o.c. to the floor and ceiling runners. All joints staggered. 89 mm (3-1/2") CertainTeed’s NoiseReducer™ Sound Attenuation Batts in the stud cavities. | FIRE: cUL U411  
SOUND: OL 17-0203 |
| STC 65 | ![Stud Configuration](image) | 15.9 mm (5/8") CertainTeed Type X products or Diamondback® Tile Backer Type X, 2 layers both sides of double row 64 mm (2-1/2") wide 0.46 mm (18 mils) studs separated by 25 mm (1") air space. 22 mm x 22 mm (7/8" x 7/8") 0.84 mm (33 mils) channels as horizontal bracing a minimum of every 1524 mm (60"). CertainTeed's Sustainable Insulation™ 89 mm (3-1/2") within both cavities. Vertical application: Base layer installed with 25 mm (1") Type S-12 screws 406 mm (16") o.c. and face layer installed with 41 mm (1-5/8") Type S-12 screws 203 mm (8") o.c. on each side of the assembly. Joints staggered. Horizontal application: Base layer installed with 25 mm (1") Type S-12 screws 406 mm (16") o.c. and face layer installed with 41 mm (1-5/8") Type S-12 screws 406 mm (16") o.c. on each side of the assembly. Face and base layer joints to be staggered a minimum of 305 mm (12"). | FIRE: cUL V469  
SOUND: NOAL 18-0643 |
STEEL STUD PARTITIONS
Non-Loadbearing

FIRE RESISTANCE RATING: 2h (continued)

STC 65  
System WCA265  
15.9 mm (5/8”) CertainTeed, M2Tech® or Diamondback® Tile Backer Type X, 2 layers, each side of paired 41 mm (1-5/8”) steel studs. CertainTeed’s Sustainable Insulation™, 64 mm (2-1/2”) each side within cavity.

Attach 241 mm x 305 mm (9-1/2” x 12”) CertainTeed or M2Tech® Type X bridging vertically using 25 mm (1”) screws spaced 203 mm (8”) o.c. along edge joints, floor and ceiling tracks, and 305 mm (12”) o.c. in the field. Fasten base layers vertically using 41 mm (1-5/8”) screws spaced 203 mm (8”) o.c. along edge joints, floor and ceiling tracks, and 305 mm (12”) o.c. in the field. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.

FIRE: cUL U420  
SOUND: NRC-93-321

STC 48  
System WPA438  
12.7 mm (1/2”) CertainTeed Type C products, 3 layers, each side of 41 mm (1-5/8”) steel studs.

Fasten base layers vertically using 25 mm (1”) screws spaced 300 mm (12”) o.c. Fasten second layers vertically using 41 mm (1-5/8”) screws spaced 300 mm (12”) o.c. Fasten third layers vertically or horizontally with 57 mm (2-1/4”) screws spaced 300 mm (12”) o.c. Note, for horizontal applications use 38 mm (1-1/2”) Type G screws along the horizontal edge and in the field between studs. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.

FIRE: ULC U411  
SOUND: NOAL 18-0701

STC 53  
System WPA353  
12.7 mm (1/2”) CertainTeed Type C products, 3 layers, each side of 41 mm (1-5/8”) steel studs. Mineral wool insulation 38 mm (1-1/2”) within cavity.

Fasten base layers vertically using 25 mm (1”) screws spaced 300 mm (12”) o.c. Fasten second layers vertically using 41 mm (1-5/8”) screws spaced 300 mm (12”) o.c. Fasten third layers vertically or horizontally with 57 mm (2-1/4”) screws spaced 300 mm (12”) o.c. Note, for horizontal applications use 38 mm (1-1/2”) Type G screws along the horizontal edge and in the field between studs. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.

FIRE: ULC U411  
SOUND: NOAL 18-0704

STC 51  
System WPA451  
12.7 mm (1/2”) CertainTeed Type C products, 4 layers, each side of 41 mm (1-5/8”) steel studs.

Fasten base layers vertically using 25 mm (1”) screws spaced 300 mm (12”) o.c. Fasten second layers vertically using 41 mm (1-5/8”) screws spaced 300 mm (12”) o.c. Fasten third layers vertically with 57 mm (2-1/4”) screws spaced 300 mm (12”) o.c. Fasten fourth layers vertically or horizontally with 67 mm (2-5/8”) screws spaced 300 mm (12”) o.c. Note, for horizontal applications use 38 mm (1-1/2”) Type G screws along the horizontal edge and in the field between studs. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.

FIRE: ULC U411  
SOUND: NOAL 18-0702
## STEEL STUD PARTITIONS

### Non-Loadbearing

<table>
<thead>
<tr>
<th>STC (SOUND TRANSMISSION CLASS)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
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<tr>
<td><strong>STC 52</strong></td>
<td><strong>STC 52</strong></td>
<td><strong>System WPA452</strong></td>
<td><strong>FIRE: ULC U411</strong></td>
</tr>
<tr>
<td></td>
<td><strong>600 mm (24&quot;)</strong></td>
<td><strong>15.9 mm (5/8&quot;) CertainTeed Type X products, 4 layers, each side of 41 mm (1-5/8&quot;) steel studs.</strong></td>
<td><strong>SOUND: NOAL 18-0705</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Thickness: 168 mm (6-5/8&quot;)</strong></td>
<td><strong>Fasten base layers vertically using 25 mm (1&quot;) screws spaced 300 mm (12&quot;) o.c. Fasten second layers vertically using 41 mm (1-5/8&quot;) screws spaced 300 mm (12&quot;) o.c. Fasten third layers vertically with 57 mm (2-1/4&quot;) screws spaced 300 mm (12&quot;) o.c. Fasten fourth layers vertically or horizontally with 67 mm (2-5/8&quot;) screws spaced 300 mm (12&quot;) o.c. Note, for horizontal applications use 38 mm (1-1/2&quot;) Type G screws along the horizontal edge and in the field between studs. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Weight: 88.49 kg/m² (18.12 lb/ft²)</strong></td>
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<tr>
<td><strong>STC 55</strong></td>
<td><strong>STC 55</strong></td>
<td><strong>System WPA455</strong></td>
<td><strong>FIRE: ULC U411</strong></td>
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<tr>
<td></td>
<td><strong>600 mm (24&quot;)</strong></td>
<td><strong>12.7 mm (1/2&quot;) CertainTeed Type C products, 4 layers, each side of 41 mm (1-5/8&quot;) steel studs. CertainTeed's Sustainable Insulation™ 38 mm (1-1/2&quot;) within cavity.</strong></td>
<td><strong>SOUND: NOAL 18-0703</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Thickness: 143 mm (5-5/8&quot;)</strong></td>
<td><strong>Fasten base layers vertically using 25 mm (1&quot;) screws spaced 300 mm (12&quot;) o.c. Fasten second layers vertically using 41 mm (1-5/8&quot;) screws spaced 300 mm (12&quot;) o.c. Fasten third layers vertically with 57 mm (2-1/4&quot;) screws spaced 300 mm (12&quot;) o.c. Fasten fourth layers vertically or horizontally with 67 mm (2-5/8&quot;) screws spaced 300 mm (12&quot;) o.c. Note, for horizontal applications use 38 mm (1-1/2&quot;) Type G screws along the horizontal edge and in the field between studs. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</strong></td>
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<tr>
<td></td>
<td><strong>Weight: 79 kg/m² (16 lb/ft²)</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>STC 57</strong></td>
<td><strong>STC 57</strong></td>
<td><strong>System WPA457</strong></td>
<td><strong>FIRE: ULC U411</strong></td>
</tr>
<tr>
<td></td>
<td><strong>600 mm (24&quot;)</strong></td>
<td><strong>15.9 mm (5/8&quot;) CertainTeed Type X products, 4 layers, each side of 41 mm (1-5/8&quot;) steel studs. CertainTeed's Sustainable Insulation™ 38 mm (1-1/2&quot;) within cavity.</strong></td>
<td><strong>SOUND: NOAL 18-0706</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Thickness: 168 mm (6-5/8&quot;)</strong></td>
<td><strong>Fasten base layers vertically using 25 mm (1&quot;) screws spaced 300 mm (12&quot;) o.c. Fasten second layers vertically using 41 mm (1-5/8&quot;) screws spaced 300 mm (12&quot;) o.c. Fasten third layers vertically with 57 mm (2-1/4&quot;) screws spaced 300 mm (12&quot;) o.c. Fasten fourth layers vertically or horizontally with 67 mm (2-5/8&quot;) screws spaced 300 mm (12&quot;) o.c. Note, for horizontal applications use 38 mm (1-1/2&quot;) Type G screws along the horizontal edge and in the field between studs. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</strong></td>
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<tr>
<td></td>
<td><strong>Weight: 89.04 kg/m² (18.24 lb/ft²)</strong></td>
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</table>
# STEEL STUD PARTITIONS
## Interior – Loadbearing

<table>
<thead>
<tr>
<th>STC (SOUND TRANSMISSION CLASS)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STC 48</strong>&lt;br&gt;610 mm (24&quot;)&lt;br&gt; Thickness: 121 mm (4-3/4&quot;)&lt;br&gt; Weight: 27 kg/m² (5.6 lb/ft²)</td>
<td><strong>System WIBC148</strong>&lt;br&gt;15.9 mm (5/8&quot;) CertainTeed Type X products, 1 layer, each side of 92 mm (3-5/8&quot;), 0.84 mm (33 mils) loadbearing steel studs. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity.&lt;br&gt;Fasten boards vertically using 25 mm (1&quot;) screws spaced 305 mm (12&quot;) o.c.&lt;br&gt;Joints must be offset. Tape and finish joints with CertainTeed products.</td>
<td><strong>FIRE RESISTANCE RATING:</strong> 1h&lt;br&gt;<strong>FIRE:</strong> cUL U425&lt;br&gt;<strong>SOUND:</strong> OL12-0922</td>
</tr>
</tbody>
</table>

| STC 54<br>610 mm (24")<br> Thickness: 153 mm (6")<br> Weight: 50 kg/m² (10 lb/ft²) | **System WIBC254**<br>15.9 mm (5/8") CertainTeed Type X products, 2 layers, each side 92 mm (3-5/8"), 0.84 mm (33 mils) loadbearing steel studs. CertainTeed’s Sustainable Insulation™ 92 mm (3-5/8") within cavity.<br>Fasten base layers vertically using 25 mm (1") screws spaced 305 mm (12") o.c. Fasten face layers vertically using 41 mm (1-5/8") screws spaced 305 mm (12") o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products. | **FIRE RESISTANCE RATING:** 2h<br>**FIRE:** cUL U425<br>**SOUND:** OL12-0924 |

## Exterior – Non-Loadbearing

<table>
<thead>
<tr>
<th>STC (SOUND TRANSMISSION CLASS)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td><strong>STC 29</strong>&lt;br&gt;400 mm (16&quot;)&lt;br&gt; Thickness: 296 mm (11-5/8&quot;)</td>
<td><strong>System WPC2XX</strong>&lt;br&gt;Assembly rated for fire exposure from interior side only. 15.9 mm (5/8&quot;) CertainTeed Type X products, 2 layers on interior side of 92 mm (3-5/8&quot;) wide steel studs with steel channel bracing inserted through the stud cutouts at 1220 mm (48&quot;) o.c. and attached to studs with clip angles and screws. 15.9 mm (5/8&quot;) GlasRoc® Sheathing Type X, 1 layer on exterior side of steel studs. Exterior finished with expanded polystyrene insulation and Durabond Products Ltd’s EIFS system. Interior finished with CertainTeed products.&lt;br&gt;Interior side: Fasten base layer vertically using 32 mm (1-1/4&quot;) screws 150 mm (6&quot;) o.c. on the perimeter and 200 mm (8&quot;) o.c. in the field. Fasten face layer vertically using 41 mm (1-5/8&quot;) screws 150 mm (6&quot;) o.c. on the perimeter and 200 mm (8&quot;) o.c. in the field. Joints must be offset 600 mm (24&quot;).&lt;br&gt;Exterior side: Fasten sheathing using 41 mm (1-5/8&quot;) screws 200 mm (8&quot;) o.c. on the perimeter and 300 mm (12&quot;) o.c. in the field. Joints between sheathing to be covered with 120 mm (5&quot;) fiberglass seam tape and with a proprietary EIFS System.</td>
<td><strong>FIRE RESISTANCE RATING:</strong> 2h&lt;br&gt;<strong>FIRE:</strong> ULC W456</td>
</tr>
</tbody>
</table>

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**FIRE RESISTANCE RATING:** 1h

**FIRE RESISTANCE RATING:** 2h
## STEEL STUD PARTITIONS

### Exterior – Loadbearing

<table>
<thead>
<tr>
<th>STC (SOUND TRANSMISSION CLASS)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRE RESISTANCE RATING: 3/4h</strong></td>
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<tr>
<td><strong>STC 49</strong></td>
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</tbody>
</table>
| | | System WECB049 | FIRE: cUL U425  
SOUND: OL12-0926 |
| 15.9 mm (5/8") CertainTeed Type X products, 1 layer, interior side,  
1 layer, exterior side of 92 mm (3-5/8"), 0.84 mm (33 mils) loadbearing steel studs. 89 mm (3-1/2") CertainTeed’s Sustainable Insulation™ in the cavity, exterior finish. | | Fasten CertainTeed GlasRoc® Sheathing vertically to the exterior side using 25 mm (1") screws spaced 305 mm (12") o.c. Fasten CertainTeed Type X products vertically to the interior side using 25 mm (1") screws spaced 305 mm (12") o.c. Second layer to be fastened using Type S-12 41 mm long (1-5/8") screws. Joints must be offset. Tape and finish interior joints with CertainTeed products. | |
| | | | |
| **FIRE RESISTANCE RATING: 1h** | | | |
| **STC 53** | | | |
| | | System WECB1XX | FIRE: cUL U425  
SOUND: |
| | | Install CertainTeeds Sustainable Insulation™ between 0.84 mm (33 Mils) steel studs space 610 mm (24") o.c. Apply one layer of 15.9 mm (5/8") CertainTeed® Type X gypsum board vertically to interior side with 25 mm (1") Type S-12 steel screws spaced 305 mm (12") o.c. along edges and in the field. Joints must be offset from joints on the opposite side. Tape and finish joints. | |
| | | Apply one layer of 5/8" (15.9 mm) GlasRoc® Sheathing Type X vertically to exterior side with 25 mm (1") screws spaced 305 mm (12") o.c. along edges and in the field. Joints must be offset from joints on the opposite side. Exterior finish. | |
| | | | |
| **FIRE RESISTANCE RATING: 1-1/2h** | | | |
| **STC 53** | | | |
| | | System WECB153 | FIRE: cUL U425  
SOUND: OL12-0925  
Sound rating achieved using 0.48 mm (19 mil) studs. |
| 15.9 mm (5/8") CertainTeed Type X products, 2 layers, interior side,  
12.7 mm (1/2") CertainTeed GlasRoc® Sheathing, 1 layer, exterior side of 92 mm (3-5/8"), 0.84 mm (33 mils) loadbearing steel studs. CertainTeed’s Sustainable Insulation™, exterior finish. | | Fasten CertainTeed or GlasRoc® Sheathing vertically to the exterior side using 25 mm (1") screws spaced 305 mm (12") o.c. Fasten base layer vertically to the interior side using 32 mm (1-1/4") screws spaced 305 mm (12") o.c. Fasten face layer vertically to the using 41 mm (1-5/8") screws spaced 305 mm (12") o.c. Joints must be offset. Tape and finish interior joints with CertainTeed products. | |

**STEEL STUD PARTITIONS**

**Exterior – Loadbearing**

**FIRE RESISTANCE RATING: 3/4h**

- **STC 49**
  - 610 mm (24")
  - Thickness: 118 mm (4-5/8") plus exterior finish
  - Weight: 25 kg/m² (5.1 lb/ft²) plus exterior finish

**System WECB049**
- 15.9 mm (5/8") CertainTeed Type X products, 1 layer, interior side, 1 layer, exterior side of 92 mm (3-5/8"), 0.84 mm (33 mils) loadbearing steel studs. 89 mm (3-1/2") CertainTeed’s Sustainable Insulation™ in the cavity, exterior finish.
- Fasten CertainTeed GlasRoc® Sheathing vertically to the exterior side using 25 mm (1") screws spaced 305 mm (12") o.c. Fasten CertainTeed Type X products vertically to the interior side using 25 mm (1") screws spaced 305 mm (12") o.c. Second layer to be fastened using Type S-12 41 mm long (1-5/8") screws. Joints must be offset. Tape and finish interior joints with CertainTeed products.

**FIRE RESISTANCE RATING: 1h**

- **STC 53**
  - 610 mm (24")
  - Thickness: 121 mm (4-3/4")

**System WECB1XX**
- Install CertainTeeds Sustainable Insulation™ between 0.84 mm (33 Mils) steel studs space 610 mm (24") o.c. Apply one layer of 15.9 mm (5/8") CertainTeed® Type X gypsum board vertically to interior side with 25 mm (1") Type S-12 steel screws spaced 305 mm (12") o.c. along edges and in the field. Joints must be offset from joints on the opposite side. Tape and finish joints.
- Apply one layer of 5/8" (15.9 mm) GlasRoc® Sheathing Type X vertically to exterior side with 25 mm (1") screws spaced 305 mm (12") o.c. along edges and in the field. Joints must be offset from joints on the opposite side. Exterior finish.

**FIRE RESISTANCE RATING: 1-1/2h**

- **STC 53**
  - 610 mm (24")
  - Thickness: 137 mm (5-3/8") plus exterior finish
  - Weight: 33.61 kg/m² (6.88 lb/ft²) plus exterior finish

**System WECB153**
- 15.9 mm (5/8") CertainTeed Type X products, 2 layers, interior side, 12.7 mm (1/2") CertainTeed GlasRoc® Sheathing, 1 layer, exterior side of 92 mm (3-5/8"), 0.84 mm (33 mils) loadbearing steel studs. CertainTeed’s Sustainable Insulation™, exterior finish.
- Fasten CertainTeed or GlasRoc® Sheathing vertically to the exterior side using 25 mm (1") screws spaced 305 mm (12") o.c. Fasten base layer vertically to the interior side using 32 mm (1-1/4") screws spaced 305 mm (12") o.c. Fasten face layer vertically to the using 41 mm (1-5/8") screws spaced 305 mm (12") o.c. Joints must be offset. Tape and finish interior joints with CertainTeed products.
## WOOD STUD PARTITIONS

### Interior – Loadbearing

<table>
<thead>
<tr>
<th>STC</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRE RESISTANCE RATING: 3/4h</strong></td>
<td></td>
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</tbody>
</table>
| STC 32 | ![Diagram](image1) | System WPE032  
12.7 mm (1/2") CertainTeed Type C products, 1 layer, each side of 38 mm x 89 mm (2" x 4") wood studs.  
Fasten boards vertically using 44 mm (1-3/4") nails spaced 175 mm (7") o.c. Joints must be offset. Tape and finish joints with CertainTeed products. Widths other than 1200 mm (48") must be installed horizontally. | FIRE: ULC W302  
SOUND: NBCC (2015) Table A-9.10.3.1.A - Wall W1e & W1b |
| **FIRE RESISTANCE RATING: 1h** | | | |
| STC 32 | ![Diagram](image2) | System WPE132  
15.9 mm (5/8") CertainTeed Type X products, 1 layer, each side of 38 mm x 89 mm (2" x 4") wood studs.  
Fasten boards vertically using 51 mm (2") nails spaced 175 mm (7") o.c. Joints must be offset. Tape and finish joints with CertainTeed products. | FIRE: ULC W 301, cUL U305  
SOUND: NBCC (2015) Table A-9.10.3.1.A  
Wall W1d |
| STC 35 | ![Diagram](image3) | System WPE135  
15.9 mm (5/8") CertainTeed Type C products, 1 layer, each side of 38 mm x 89 mm (2" x 4") wood studs. Mineral wool insulation 89 mm (3-1/2") within cavity.  
Fasten boards vertically using 32 mm (1-1/4") screws spaced 305 mm (12") o.c.; or 32 mm (1-1/4") nails spaced 203 mm (8") o.c. Joints must be offset. Tape and finish joints with CertainTeed products. | FIRE: cUL U305  
SOUND: OL 18-1232 |
| STC 47 | ![Diagram](image4) | System WPE147  
15.9 mm (5/8") CertainTeed Type X products, 1 layer on 38 mm x 89 mm (2" x 4") wood studs, one side on resilient channels. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2") within cavity.  
Fasten board vertically or horizontally to one side with 41 mm (1-5/8") screws spaced 305 mm (12") o.c. Attach resilient channels with tabs downwards, horizontally at 406 mm (16") or 610 mm (24") o.c. to studs on opposite side with 32 mm (1-1/4") screws. Upper channel 150 mm (6") from top, lower channel 406 mm (16") up from bottom and at the bottom of the partition, install an inverted channel. Fasten board vertically to the resilient channels with 25 mm (1") screws spaced 203 mm (8") o.c. Joints must be offset. Tape and finish joints with CertainTeed products. | FIRE: cUL U305  
SOUND: OL 18-0818 |
| STC 51 | ![Diagram](image5) | System WPE151  
15.9 mm (5/8") CertainTeed Type X products, 1 layer, 1 side of staggered 38 mm x 89 mm (2" x 4") wood studs on common 38 mm x 150 mm (2" x 6") plate. 2 layers on the other side. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2") within cavity.  
Fasten 1 layer vertically or horizontally to both sides with 32 mm (1-1/4") type W screws spaced 203 mm (8") o.c. Fasten face layer using 60 mm (2-3/8") long nails spaced 203 mm (8") o.c. Vertical joints located over studs. All joints in face layer staggered with joints in base layer.  
Tape and finish outer layer joints with CertainTeed products. | FIRE: ULC W313  
SOUND: OL 18-0825 |

Thickness: 114 mm (4-1/2")  
Weight: 27 kg/m² (5.4 lb/ft²)  
Thickness: 121 mm (4-3/4")  
Weight: 31 kg/m² (6.3 lb/ft²)  
Thickness: 114 mm (4-1/2")  
Weight: 30 kg/m² (6.2 lb/ft²)  
Thickness: 133 mm (5-1/4")  
Weight: 33 kg/m² (6.8 lb/ft²)  
Thickness: 200 mm (7-7/8")  
Weight: 47 kg/m² (9.7 lb/ft²)  
Thickness: 406 mm (16")  
Weight: 30 kg/m² (6.2 lb/ft²)  
Thickness: 406 mm (16")  
Weight: 30 kg/m² (6.2 lb/ft²)  
Thickness: 610 mm (24")  
Weight: 47 kg/m² (9.7 lb/ft²)
WOOD STUD PARTITIONS
Interior – Loadbearing

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<th>STC (SOUND TRANSMISSION CLASS)</th>
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<th>DESCRIPTION</th>
<th>FIRE RESISTANCE RATING: 1h (continued)</th>
<th>DESIGN NUMBER/ TEST REPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>STC 52</td>
<td></td>
<td>System WPE152</td>
<td>15.9 mm (5/8&quot;) CertainTeed Type X products, 1 layer, 1 side of 38 mm x 89 mm (2&quot; x 4&quot;) wood studs. Other side, 2 layers on resilient channels. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity.</td>
<td>FIRE: cUL U305 &lt;br&gt;SOUND: NOAL 18-0711</td>
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<tr>
<td></td>
<td></td>
<td>Fasten board vertically or horizontally to one side with 41 mm (1-5/8&quot;) screws spaced 305 mm (12&quot;) o.c. Attach resilient channels with tabs downwards, horizontally at 406 mm (16&quot;) or 610 mm (24&quot;) o.c. to studs on opposite side with 32 mm (1-1/4&quot;) screws. Upper channel 150 mm (6&quot;) from top, lower channel 406 mm (16&quot;) up from bottom and at the bottom of the partition, install an inverted channel. Fasten base layer vertically to the resilient channels with 25 mm (1&quot;) screws spaced 203 mm (8&quot;) o.c. Fasten face layer vertically or horizontally with 41 mm (1-5/8&quot;) screws spaced 305 mm (12&quot;) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</td>
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<tr>
<td></td>
<td></td>
<td>Thickness: 149 mm (5-7/8&quot;) &lt;br&gt;Weight: 41.25 kg/m² (8.45 lb/ft²)</td>
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<tr>
<td>STC 55</td>
<td></td>
<td>System WPE155</td>
<td>15.9 mm (5/8&quot;) CertainTeed Type X product, 1 layer, one side of staggered 38 mm x 89 mm (2&quot; x 4&quot;) wood studs. Other side, 1 layer 15.9 mm (5/8&quot;) CertainTeed SilentFX® QuickCut™ Type X and CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity.</td>
<td>FIRE: ULC W313 &lt;br&gt;SOUND: OL 15-1112</td>
</tr>
<tr>
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<td>Fasten boards vertically using 42 mm (1-5/8&quot;) screws spaced 305 mm (12&quot;) o.c. in the field and 203 mm (8&quot;) along the top and bottom edges of the wall. Joints centered over studs. Joints on opposite sides of studs, staggered by at least one stud spacing. Acoustical sealant applied in perimeter gap. Tape and finish joints with CertainTeed products.</td>
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<tr>
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<td>Thickness: 171.5 mm (9-1/4&quot;) &lt;br&gt;Weight: 37.9 kg/m² (7.8 lb/ft²)</td>
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</tr>
<tr>
<td>STC 57</td>
<td></td>
<td>System WPE157</td>
<td>15.9 mm (5/8&quot;) CertainTeed Type X products, 1 layer, 1 side of double row of 38 mm x 89 mm (2&quot; x 4&quot;) wood studs. Other side, 2 layers. 89 mm (3-1/2&quot;) CertainTeed’s Sustainable Insulation™ in one cavity.</td>
<td>FIRE: cUL U309 &lt;br&gt;SOUND: &lt;br&gt;NBCC (2015) &lt;br&gt;Table A-9.10.3.1.A &lt;br&gt;Wall W14c</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Set plates 25.4 mm (1&quot;) apart. Fasten base layers vertically or horizontally using 41 mm (1-5/8&quot;) screws spaced 305 mm (12&quot;) o.c.; or 38 mm (1-1/2&quot;) nails spaced 203 mm (8&quot;) o.c. Fasten face layer to one side vertically or horizontally using 51 mm (2&quot;) screws spaced 305 mm (12&quot;) o.c.; or 51 mm (2&quot;) nails spaced 203 mm (8&quot;) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</td>
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<tr>
<td></td>
<td></td>
<td>Thickness: 251 mm (9-7/8&quot;) &lt;br&gt;Weight: 53 kg/m² (10.9 lb/ft²)</td>
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<tr>
<td>STC 58</td>
<td></td>
<td>System WPE158</td>
<td>15.9 mm (5/8&quot;) CertainTeed Type X products, 1 layer, each side of double row of 38 mm x 89 mm (2&quot; x 4&quot;) wood studs. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity.</td>
<td>FIRE: ULC W313 &lt;br&gt;SOUND: NOAL 18-0714</td>
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<tr>
<td></td>
<td></td>
<td>Set plates 25.4 mm (1&quot;) apart. Fasten boards vertically or horizontally using 32 mm (1-1/4&quot;) screws spaced 203 mm (8&quot;) o.c.; or 47 mm (1-7/8&quot;) nails spaced 178 mm (7&quot;) o.c. Joints must be offset. Tape and finish joints with CertainTeed products.</td>
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<tr>
<td></td>
<td></td>
<td>Thickness: 235 mm (9-1/4&quot;) &lt;br&gt;Weight: 33.61 kg/m² (6.88 lb/ft²)</td>
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Note: For other high STC assemblies see 2 hour fire ratings.
## WOOD STUD PARTITIONS

### Interior – Loadbearing

<table>
<thead>
<tr>
<th>STC (SOUND TRANSMISSION CLASS)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>FIRE RESISTANCE RATING: 1h (continued)</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>STC 61</td>
<td>System WPE161a</td>
<td>Double row 38 x 89 mm (2” x 4”) wood studs on separate plates, 406 mm (16”) o.c. with 25.4 mm (1”) gap. One side, 15.9 mm (5/8”) SilentFX® QuickCut™ Type X applied with 32 mm (1-1/4”) type W screws 203 mm (8”) o.c. Opposite side, 15.9 mm (5/8”) CertainTeed Type X applied with 32 mm (1-1/4”) type W screws 203 mm (8”) o.c. All joints staggered. 89 mm (3-1/2”) 89 mm (3-1/2”) CertainTeed’s NoiseReducer™ Sound Attenuation Batts in the stud cavities.</td>
<td>FIRE: ULC W313&lt;br&gt;SOUND: OL 17-0214</td>
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<tr>
<td></td>
<td></td>
<td>Thickness 241 mm (9-1/4”)&lt;br&gt;Weight: 38.56 kg/m2 (7.9 lb/ft²)</td>
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<tr>
<td></td>
<td>System WPE161b</td>
<td>15.9 mm (5/8”) CertainTeed Type X products, 1 layer, 1 side of double row 38 mm x 89 mm (2” x 4”) wood studs. Other side, 2 layers. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2”) within cavity, both sides. Set plates 25.4 mm (1”) apart. Fasten base layers vertically or horizontally using 32 mm (1-1/4”) Type W screws spaced 203 mm (8”) o.c.; or 48 mm (1-7/8”) nails spaced 178 mm (7”) o.c. Fasten face layer to one side vertically or horizontally using 60 mm (2-3/8”) nails spaced 203 mm (8”) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</td>
<td>FIRE: ULC W313&lt;br&gt;SOUND: NBCC (2015) Table A-9.10.3.1.A Wall W4ia</td>
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<tr>
<td></td>
<td></td>
<td>Thickness: 251 mm (9-7/8”)&lt;br&gt;Weight: 56 kg/m2 (11.4 lb/ft²)</td>
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<tr>
<td></td>
<td>System WPE162</td>
<td>15.9 mm (5/8”) CertainTeed Type X products, 2 layers, 1 side of staggered 38 mm x 89 mm (2” x 4”) wood studs. Other side, 2 layers on resilient channels. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2”) within cavity. Fasten base layer vertically or horizontally to one side with 41 mm (1-5/8”) screws spaced 300 mm (12”) o.c. Fasten face layer vertically or horizontally with 51 mm (2”) screws spaced 300 mm (12”) o.c. Attach resilient channels with tabs down, horizontally at 400 mm (16”) o.c. or 600 mm (24”) o.c. to studs on opposite side with 32 mm (1-1/4”) screws. Upper channel 150 mm (6”) from top, lower channel 400 mm (16”) up from bottom and at the bottom of the partition, install an inverted channel. Fasten base layer vertically to the resilient channels with 25 mm (1”) screws spaced 300 mm (12”) o.c. Fasten face layer vertically or horizontally with 41 mm (1-5/8”) screws spaced 300 mm (12”) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</td>
<td>FIRE: NBCC (2015) Table A-9.10.3.1.A Wall W10a&lt;br&gt;SOUND: NBCC (2015) Table A-9.10.3.1.A Wall W10a</td>
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<tr>
<td></td>
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<td>Thickness: 216 mm (8-1/2”)&lt;br&gt;Weight: 59 kg/m2 (12 lb/ft²)</td>
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<td>System WPE236</td>
<td>15.9 mm (5/8”) CertainTeed Type X products, 2 layers, each side of 38 mm x 89 mm (2” x 4”) wood studs. Fasten base layers vertically or horizontally using 47 mm (1-7/8”) nails spaced 150 mm (6”) o.c. Fasten face layers vertically or horizontally using 60 mm (2-3/8”) nails spaced 203 mm (8”) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</td>
<td>FIRE: cUL U301&lt;br&gt;SOUND: NBCC (2015) Table A-9.10.3.1.A Wall W2d, W2a</td>
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<td>Thickness: 152 mm (6”)&lt;br&gt;Weight: 54 kg/m2 (11 lb/ft²)</td>
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**FIRE RESISTANCE RATING:** 1h (continued)

**STC 61**

- **CONSTRUCTION**
  - 406 mm (16”)
  - 600 mm (24”)
  - 400 mm (16”)

- **DESCRIPTION**
  - System WPE161a
  - Double row 38 x 89 mm (2” x 4”) wood studs on separate plates, 406 mm (16”) o.c. with 25.4 mm (1”) gap. One side, 15.9 mm (5/8”) SilentFX® QuickCut™ Type X applied with 32 mm (1-1/4”) type W screws 203 mm (8”) o.c. Opposite side, 15.9 mm (5/8”) CertainTeed Type X applied with 32 mm (1-1/4”) type W screws 203 mm (8”) o.c. All joints staggered. 89 mm (3-1/2”) 89 mm (3-1/2”) CertainTeed’s NoiseReducer™ Sound Attenuation Batts in the stud cavities.

- **FIRE RESISTANCE RATING:** 1h

- **STC 61**

- **CONSTRUCTION**
  - 600 mm (24”)
  - 400 mm (16”)

- **DESCRIPTION**
  - System WPE161b
  - 15.9 mm (5/8”) CertainTeed Type X products, 1 layer, 1 side of double row 38 mm x 89 mm (2” x 4”) wood studs. Other side, 2 layers. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2”) within cavity, both sides. Set plates 25.4 mm (1”) apart. Fasten base layers vertically or horizontally using 32 mm (1-1/4”) Type W screws spaced 203 mm (8”) o.c.; or 48 mm (1-7/8”) nails spaced 178 mm (7”) o.c. Fasten face layer to one side vertically or horizontally using 60 mm (2-3/8”) nails spaced 203 mm (8”) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.

- **FIRE RESISTANCE RATING:** 1h

- **STC 62**

- **CONSTRUCTION**
  - 600 mm (24”)
  - 400 mm (16”)

- **DESCRIPTION**
  - System WPE162
  - 15.9 mm (5/8”) CertainTeed Type X products, 2 layers, 1 side of staggered 38 mm x 89 mm (2” x 4”) wood studs. Other side, 2 layers on resilient channels. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2”) within cavity. Fasten base layer vertically or horizontally to one side with 41 mm (1-5/8”) screws spaced 300 mm (12”) o.c. Fasten face layer vertically or horizontally with 51 mm (2”) screws spaced 300 mm (12”) o.c. Attach resilient channels with tabs down, horizontally at 400 mm (16”) o.c. or 600 mm (24”) o.c. to studs on opposite side with 32 mm (1-1/4”) screws. Upper channel 150 mm (6”) from top, lower channel 400 mm (16”) up from bottom and at the bottom of the partition, install an inverted channel. Fasten base layer vertically to the resilient channels with 25 mm (1”) screws spaced 300 mm (12”) o.c. Fasten face layer vertically or horizontally with 41 mm (1-5/8”) screws spaced 300 mm (12”) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.

- **FIRE RESISTANCE RATING:** 1-1/2h

- **STC 36**

- **CONSTRUCTION**
  - 406 mm (16”)

- **DESCRIPTION**
  - System WPE236
  - 15.9 mm (5/8”) CertainTeed Type X products, 2 layers, each side of 38 mm x 89 mm (2” x 4”) wood studs. Fasten base layers vertically or horizontally using 47 mm (1-7/8”) nails spaced 150 mm (6”) o.c. Fasten face layers vertically or horizontally using 60 mm (2-3/8”) nails spaced 203 mm (8”) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.

- **FIRE RESISTANCE RATING:** 2h

### FIRE RESISTANCE RATING: 1h

**STC 61**

- **CONSTRUCTION**
  - 406 mm (16”)

- **DESCRIPTION**
  - System WPE161a
  - Double row 38 x 89 mm (2” x 4”) wood studs on separate plates, 406 mm (16”) o.c. with 25.4 mm (1”) gap. One side, 15.9 mm (5/8”) SilentFX® QuickCut™ Type X applied with 32 mm (1-1/4”) type W screws 203 mm (8”) o.c. Opposite side, 15.9 mm (5/8”) CertainTeed Type X applied with 32 mm (1-1/4”) type W screws 203 mm (8”) o.c. All joints staggered. 89 mm (3-1/2”) 89 mm (3-1/2”) CertainTeed’s NoiseReducer™ Sound Attenuation Batts in the stud cavities.

- **THICKNESS:** 241 mm (9-1/4”)
- **WEIGHT:** 38.56 kg/m² (7.9 lb/ft²)
### WOOD STUD PARTITIONS

**Interior – Loadbearing**

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<td><strong>STC 56</strong></td>
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<td></td>
<td>[Diagram of System WPE256a]</td>
<td><strong>System WPE256a</strong>&lt;br&gt;15.9 mm (5/8&quot;) CertainTeed Type X products, 2 layers, each side of staggered 38 mm x 89 mm (2&quot; x 4&quot;) wood studs. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity.&lt;br&gt;Fasten base layers vertically or horizontally using 47 mm (1-7/8&quot;) nails spaced 150 mm (6&quot;) o.c. Fasten face layers vertically or horizontally using 60 mm (2-3/8&quot;) nails spaced 203 mm (8&quot;) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</td>
<td>FIRE: ULC W313&lt;br&gt;SOUND: NBCC (2015) Table A-9.10.3.1A&lt;br&gt;Wall W9a</td>
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<td>[Diagram of System WPE256b]</td>
<td><strong>System WPE256b</strong>&lt;br&gt;15.9 mm (5/8&quot;) CertainTeed Type X products, 2 layers, 1 side 38 mm x 89 mm (2&quot; x 4&quot;) wood studs. Other side, 2 layers on resilient channels. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity.&lt;br&gt;Fasten base layer vertically or horizontally to one side with 41 mm (1-5/8&quot;) screws spaced 305 mm (12&quot;) o.c. Fasten face layer vertically or horizontally with 51 mm (2&quot;) screws spaced 305 mm (12&quot;) o.c. Attach resilient channels with tabs down, horizontally at 610 mm (24&quot;) up from bottom and at the bottom of the partition, install an inverted channel. Fasten base layer vertically to the resilient channels with 25 mm (1&quot;) screws spaced 610 mm (24&quot;) o.c. Fasten face layer vertically or horizontally with 41 mm (1-5/8&quot;) screws spaced 305 mm (12&quot;) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</td>
<td>FIRE: cUL U301&lt;br&gt;SOUND: NOAL 18-0713</td>
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<td><strong>STC 67</strong></td>
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<td>[Diagram of System WPE267]</td>
<td><strong>System WPE267</strong>&lt;br&gt;15.9 mm (5/8&quot;) CertainTeed Type X products, 2 layers, each side of double row of 38 mm x 89 mm (2&quot; x 4&quot;) wood studs. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity, both sides.&lt;br&gt;Set plates 25.4 mm (1&quot;) apart. Fasten base layers vertically or horizontally using 47 mm (1-7/8&quot;) nails spaced 150 mm (6&quot;) o.c. Fasten face layers vertically or horizontally using 60 mm (2-3/8&quot;) nails spaced 203 mm (8&quot;) o.c. Joints must be offset. Tape and finish outer layer joints with CertainTeed products.</td>
<td>FIRE: ULC W313&lt;br&gt;SOUND: NOAL 18-0716</td>
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**FIRE RESISTANCE RATING:** **2h** (continued)
WOOD STUD PARTITIONS

Exterior - Loadbearing

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<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
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</table>
| **STC 36**                    | System WXE136 | Fasten 1 layer of 15.9 mm (5/8") CertainTeed Type X products vertically to interior side of 38 mm x 89 mm (2" x 4") wood studs. Fasten 1 layer of 15.9 mm (5/8") CertainTeed GlasRoc® Sheathing Type X vertically to exterior side. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2") within cavity. All boards fastened using 51 mm (2") nails spaced 175 mm (7") o.c. Joints must be offset. Tape and finish interior joints with CertainTeed products. Exterior cladding system applied. | FIRE: ULC W301  
SOUND: NBCC (2015)  
Table A-9.10.3.1.A  
Wall W1a |
| **STC 37**                    | System WXE137 | Fasten 1 layer of 15.9 mm (5/8") CertainTeed Type X products vertically or horizontally to interior side of 38 mm x 89 mm (2" x 4") wood studs with 38 mm (1-1/2") drywall nails spaced 200 mm (8") o.c. or 41 mm (1-5/8") screws spaced 300 mm (12") o.c. Fasten 1 layer of 12.7 mm (1/2") CertainTeed GlasRoc® Sheathing horizontally to exterior side with 44 mm (1-3/4") roofing nails spaced 150 mm (6") o.c. Mineral wool insulation 89 mm (3-1/2") within cavity. Joints must be offset. Tape and finish interior joints with CertainTeed products. Exterior cladding system applied. | FIRE: NBCC (2015)  
Table A-9.10.3.1.A  
Wall EW1a  
SOUND: Calculated to ASTM E413 |
| **STC 38**                    | System WXE238 | Fasten base layer of 15.9 mm (5/8") CertainTeed Type X products vertically or horizontally to interior side of 38 mm x 89 mm (2" x 4") wood studs with 47 mm (1-7/8") nails spaced 150 mm (6") o.c. Fasten face layer of 15.9 mm (5/8") CertainTeed or M2Tech® Type X vertically or horizontally with 63 mm (2-1/2") cement-coated nails spaced 200 mm (8") o.c. Fasten 1 layer of 15.9 mm (5/8") CertainTeed GlasRoc® Sheathing Type X or GlasRoc® Sheathing Type X vertically or horizontally with 60 mm (2-3/8") nails spaced 203 mm (8") o.c. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2") within cavity. Joints must be offset. Tape and finish interior joints with CertainTeed products. Exterior cladding system applied. | FIRE: cUL U301  
SOUND: NBCC (2015)  
Table A-9.10.3.1.A  
Wall W2a  
SOUND: Calculated to ASTM E413 |
| **STC 42**                    | System WXE242 | Fasten base layer of 15.9 mm (5/8") CertainTeed Type X products vertically or horizontally to interior side of 38 mm x 89 mm (2" x 4") wood studs with 51 mm (2") cement-coated nails spaced 200 mm (8") o.c. Fasten face layer of 15.9 mm (5/8") CertainTeed or M2Tech® Type X vertically or horizontally with 63 mm (2-1/2") cement-coated nails spaced 200 mm (8") o.c. Fasten 1 layer of 12.7 mm (1/2") CertainTeed GlasRoc® Sheathing horizontally to exterior side with 45 mm (1-3/4") roofing nails spaced 150 mm (6") o.c. CertainTeed’s Sustainable Insulation™ 89 mm (3-1/2") within cavity. Joints must be offset. Tape and finish interior joints with CertainTeed products. Exterior brick veneer system applied. | FIRE: ULC U302  
SOUND: Calculated to ASTM E413 |

Note: Any wall as listed in “Wood Stud Partitions” may also be used as an exterior wall, provided it is covered with a sheathing membrane and exterior cladding.
M2Tech® or GlasRoc® Shaftliner, “J” Track, “C-H, C-T or I” Studs and Shaftliner Framing Installation

Lay out per construction drawings. Secure “J” track as perimeter framing on all sides, top and bottom, with suitable fasteners spaced 600 mm (24”) o.c. maximum.

Pre-plan stud layout 600 mm (24”) o.c. maximum so the terminal stud on either end will fall 200 mm (8”) minimum from the end of the opening.

Erect the first 25.4 mm (1”) M2Tech® or GlasRoc® Shaftliner panel by inserting between the flanges of the “J” track at the top and bottom at one end of the opening. Plumb the panel flush against the web of “J” track sections at the end of the opening.

Secure with 41 mm (1-5/8”) type S screws 305 mm (12”) o.c. to the flange at the end of the opening, starting 150 mm (6”) from the top or bottom. No screws are required at the top or bottom “J” tracks.

Fit a C-H, C-T or I stud to the Shaftliner making sure it’s engaged in the “J” track at the top and bottom.

Erect the adjacent Shaftliner panel by inserting in the top and bottom “J” track and the previously installed stud. Install succeeding studs and Shaftliner panels in this manner to complete the framing. Screws are not required for the top and bottom “J” tracks except at the ends of the opening, as described.

For doors, ducts or other openings install “J” track as perimeter framing.

When required for higher STC ratings, insulation should be friction fitted in the cavity before finishing on the cavity side with 15.9 mm (5/8”) CertainTeed Type X products. Resilient channels may be attached horizontally 600 mm (24”) o.c. to the studs with 10 mm (3/8”) pan head screws at each stud.

Helpful Hints
1. Use a fastening plate to secure the “J” track whenever fasteners are closer than 100 mm (4”) to the edge. Setting the plate at the time of concrete construction will avoid spalling by mechanical fasteners.
2. Pre-cut studs 12.7 mm (1/2”) less than the height of the opening.
3. Pre-cut M2Tech® or GlasRoc® Shaftliner panels 25.4 mm (1”) less than the height of the opening.
4. In structural steel frame construction, install “J” track sections before applying spray-on fireproofing.
5. Items to be anchored to the wall (cabinets, sinks, handrails, etc.) should be fastened to the C-H, C-T or I studs or to plates secured behind or between the layers of 15.9 mm (5/8”) CertainTeed Type X products.
6. Joint compounds should be applied at ambient temperatures above 10˚C (50˚F). Provide adequate ventilation to “drive-off” excess moisture.
7. For acoustic sealant and prevention of air leakage, use a bead of flexible caulking at the perimeter of each wall under the face layer of 15.9 mm (5/8”) CertainTeed Type X products and under the 54 mm (2-1/8”) flange of “J” track for shaftwall finished on one side.
8. Use type S screws for 0.46 mm (18 mils) steel framing. Use type S-12 screws for 0.84 mm (33 mils) or heavier steel framing.

Note: The sketches in this manual are intended for use by architects, engineers, contractors, consultants and designers for planning purposes only. These sketches may not be used for construction.
M2Tech® or GlasRoc® Shaftliner panels may be abutted (spliced) to span the floor-ceiling height. The shorter panel should be at least 600 mm (24”) long or of sufficient length to engage at least two “I” stud tabs on each panel edge, if “I” studs are used. Succeeding butt joints between adjoining panels should be spaced no closer than 600 mm (24”) in elevation.

As an option, and as required in some building code jurisdictions, butt joints in Shaftliner panels may be back blocked in the cavity by screw-attaching a 300 mm x 600 mm (12” x 24”) piece of M2Tech® or GlasRoc® Shaftliner or 15.9 mm (5/8”) CertainTeed Type X products over the joint to the tabs of the studs.

**First Layer**

The first layer of 15.9 mm (5/8”) CertainTeed Type X products should be installed with horizontal joints offset a minimum of 300 mm (12”) from any butt joint in the M2Tech® or GlasRoc® Shaftliner. Any vertical butt joints in the first layer should be staggered in 1200 mm (48”) increments between succeeding courses. In addition, joints must be offset from joints on opposite side.

**Second Layer**

The second layer of 15.9 mm (5/8”) CertainTeed Type X products should be installed with vertical joints offset 600 mm (24”) from any vertical butt joints in the first layer. Any horizontal butt joints in the second layer should be offset a minimum of 300 mm (12”) from any horizontal joints in the first layer and from any butt joints in the M2Tech® or GlasRoc® Shaftliner. Succeeding butt joints in the second layer between adjoining panels should be spaced no closer that 600 mm (24”) in elevation.

**Third Layer, if needed for a 3-Hour Vertical Shaftwall System**

The third layer of 15.9 mm (5/8”) CertainTeed Type C products should be installed with vertical joints offset 600 mm (24”) from any vertical joints in the second layer. Any horizontal butt joints in the third layer should be offset a minimum of 150 mm (6”) from any horizontal joint in the previous layer, including M2Tech® Shaftliner. Succeeding butt joints in the third layer between adjoining panels should be spaced no closer than 300 mm (12”) in elevation.

**Section Details**
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<tr>
<td>STC 42</td>
<td>610 mm (24&quot;)</td>
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<tr>
<td>System WSD142</td>
<td>Vertical Shaftwall System <em>Finished one side</em> 25.4 mm (1&quot;) M2Tech® or GlasRoc® Shaftliner gypsum boards are inserted between 64 mm (2-1/2&quot;), 102 mm (4&quot;) or 152 mm (6&quot;) C-H or C-T studs. A single layer of any 15.9 mm (5/8&quot;) CertainTeed Type X product is applied vertically, on open stud-face side with 25.4 mm (1&quot;) Type S screws spaced 305 mm (12&quot;) on center at all location. Exposed joints and screwheads are to be finished with CertainTeed Finishing System.</td>
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<td>FIRE: ULC W446</td>
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<td>System WSD250</td>
<td>Vertical Shaftwall System <em>Finished one side</em> GlasRoc® Shaftliner gypsum boards are inserted between 64 mm (2-1/2&quot;), 102 mm (4&quot;) or 152 mm (6&quot;) C-H or C-T studs. Two layers of any 12.7 mm (1/2&quot;) CertainTeed Type C product or any 15.9 mm (5/8&quot;) CertainTeed Type X product are applied to one side, with the base layer applied vertically or horizontally to the open-stud-face of framing studs with 25 mm (1&quot;) Type S buglehead screws spaced 610 mm (24&quot;) o.c. The second layer is placed vertically or horizontally (opposite of base layer) over the base layer and fastened using 41 mm (1-5/8&quot;) No. 6 Type S screws spaced 610 mm (24&quot;) o.c., staggered 305 mm (12&quot;) from base layer screws. Exposed joints and screwheads are to be finished with CertainTeed Finishing system.</td>
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<td>FIRE: ULC W446</td>
<td>SOUND: Intertek 3123470EEV STC 50 with 15.9 mm (5/8&quot;) CertainTeed Type X products, resilient channel and CertainTeed's Sustainable Insulation™</td>
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<td>Thickness: 95 mm (3-3/4&quot;) Weight: 44 kg/m² (9 psf)</td>
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<td>System WSD250a</td>
<td>Vertical Shaftwall System <em>Finished both sides</em> GlasRoc® Shaftliner gypsum boards are inserted between 64 mm (2-1/2&quot;), 102 mm (4&quot;) or 152 mm (6&quot;) C-H or C-T studs. A single layer of any 12.7 mm (1/2&quot;) CertainTeed Type C product or any 15.9 mm (5/8&quot;) CertainTeed Type X product is applied vertically on both sides, parallel to framing, with 25 mm (1&quot;) Type S screws spaced 305 mm (12&quot;) o.c. Vertical joints on opposite sides of wall staggered a minimum of 610 mm (24”). Exposed joints and screwheads are to be finished with CertainTeed Finishing System.</td>
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<tr>
<td>FIRE: ULC W446</td>
<td>SOUND: Intertek 3123470EEV STC 50 with resilient channel and CertainTeed's Sustainable Insulation™</td>
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<td>Thickness: 95 mm (3-3/4&quot;) Weight: 44 kg/m² (9 psf)</td>
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<td>System WSD254</td>
<td>Finished one side. 15.9 mm (5/8&quot;) CertainTeed Type X products or 12.7 mm (1/2&quot;) CertainTeed Type C products, 2 layers, corridor side. CertainTeed's Sustainable Insulation™ 89 mm (3-1/2&quot;) within cavity. Install 101 mm (4&quot;) C-H or C-T studs and M2Tech® or GlasRoc® Shaftliner panels. Fasten base layer horizontally or vertically to corridor side with 25 mm (1&quot;) screws spaced 610 mm (24&quot;) o.c. starting 75 mm (3&quot;) from the top of each stud. Fasten face layer opposite of base layer with 41 mm (1-5/8&quot;) screws spaced 610 mm (24&quot;) o.c., staggered 305 mm (12&quot;) from base layer screws starting 152 mm (6&quot;) from top of each stud. Screws are not required along top or bottom tracks. Joints must be offset. Tape and finish corridor joints with CertainTeed products.</td>
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## SHAFTWALLS

### Non-Loadbearing

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| **2h** (continued)     | **System WSD255**  
**Finished one side.**  
15.9 mm (5/8") CertainTeed Type X products or 12.7 mm (1/2") CertainTeed Type C products, 2 layers, corridor side.  
Install 64 mm (2-1/2") C-T studs, **SilentFX® QuickCut™** Type X and GlasRoc® Shaftliner panels. Fasten 15.9 mm (5/8") **SilentFX® QuickCut™** Type X base layer horizontally or vertically to corridor side with 25 mm (1") screws spaced 610 mm (24") o.c. starting 75 mm (3") from the top of each stud.  
Fasten face layer opposite of base layer with 41 mm (1-5/8") screws spaced 610 mm (24") o.c. staggered 305 mm (12") from base layer screws starting 152 mm (6") from top of each stud. Screws are not required along top or bottom tracks. Joints must be offset. Tape and finish corridor joints with CertainTeed products.  
| FIRE: cUL U417  
SOUND: NOAL 17-1141  
Tested with CertainTeed's Sustainable Insulation™  
38 mm (1-1/2") within cavity | |
| **3h**                  | **System WSD350**  
**Vertical Shaftwall System**  
**Finished one side.**  
25.4 mm (1") M2Tech® Shaftliner gypsum boards are inserted between 64 mm (2-1/2"), 102 mm (4") or 152 mm (6") C-H or C-T studs. Three layers of any 15.9 mm (5/8") CertainTeed Type C product are installed on the open stud-face with the base layer installed vertically with 25 mm (1") Type S screws spaced 610 mm (24") o.c. Remaining layers applied horizontally or vertically, middle layer with 41 mm (1-5/8") and face with 57 mm (2-1/4") Type S screws. Screws offset 152 mm (6") from layer below. When board is applied horizontally, 38 mm (1-1/2") Type G screws to be installed at the center of each stud cavity, 38 mm (1-1/2") from both sides of the horizontal joint. Exposed joints and screwheads finished with CertainTeed Finishing System.  
| FIRE: ULC W446  
SOUND: NOAL 18-0719 | |
| **3h**                  | **System WSD350a**  
**Vertical Shaftwall System**  
**Finished two sides.**  
25.4 mm (1") M2Tech® Shaftliner gypsum boards are inserted between 64 mm (2-1/2"), 102 mm (4") or 152 mm (6") C-H or C-T studs. A single layer of any 15.9 mm (5/8") CertainTeed Type C product is installed on top of M2Tech® Shaftliner, applied vertically and attached with 25.4 mm (1") long Type S screws spaced 305 mm (12") o.c.. Two layers of any 15.9 mm (5/8") CertainTeed Type C product are installed on the open stud-face. Base layer is installed vertically with 25 mm (1") Type S screws spaced 610 mm (24") o.c. Face layer is applied horizontally or vertically with 41 mm (1-5/8") Type S screws. Screws offset 152 mm (6") from layer below. When board is applied horizontally, 38 mm (1-1/2") Type G screws to be installed at the center of each stud cavity, 38 mm (1-1/2") from both sides of the horizontal joint. Exposed joints and screwheads finished with CertainTeed Finishing System.  
| FIRE: ULC W446  
SOUND: NOAL 18-0720 | |
**SHAFTWALL HORIZONTAL SYSTEMS**

**Non-Loadbearing**

<table>
<thead>
<tr>
<th>STC (SOUND TRANSMISSION CLASS)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRE RESISTANCE RATING: 1h</strong></td>
<td></td>
<td></td>
<td>FIRE: ULC ER3660-01 Evaluation Report</td>
</tr>
<tr>
<td><strong>STC 35</strong></td>
<td></td>
<td><strong>System WSD135</strong> Horizontal Ceiling System For corridors.</td>
<td>Sound: Intertek 3123470EEV 64 mm (2-1/2&quot;) Studs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25.4 mm (1&quot;) M2Tech® or GlasRoc® Shaftliner gypsum boards are inserted between 64 mm (2-1/2&quot;), 102 mm (4&quot;) or 152 mm (6&quot;) C-H, C-T or I Studs. A single layer of any 15.9 mm (5/8&quot;) CertainTeed Type X product is applied at right angles to the C-H, CT or I Studs, with 25 mm (1&quot;) Type S screws spaced 300 mm (12&quot;) o.c.</td>
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<tr>
<td></td>
<td></td>
<td>Thickness: 80 mm (3-1/8&quot;)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weight: 31 kg/m² (6.5 psf)</td>
<td></td>
</tr>
</tbody>
</table>

| **FIRE RESISTANCE RATING: 2h** |              | **System WSD240** Horizontal Ceiling System For corridors. | FIRE: ULC ER3660-01 Evaluation Report |
| **STC 40** |          | 25.4 mm (1") M2Tech® or GlasRoc® Shaftliner gypsum boards are inserted between 64 mm (2-1/2"), 102 mm (4") or 152 mm (6") C-H, C-T or I Studs. Two layers of any 12.7 mm (1/2") CertainTeed Type C product are installed on the open stud face with the first layer installed at right angles to the C-H, CT or I Studs with 25 mm (1") Type S screws spaced at 300 mm (12") o.c., and the second layer installed parallel to the C-H, CT or I Studs with 38 mm (1-1/2") Type S screws at 600 mm (24") o.c. | Sound: Intertek 3123470EEV 64 mm (2-1/2") Studs |
|      |          | Thickness: 89 mm (3-1/2") |
|      |          | Weight: 39 kg/m² (9 psf) |
SHAFTWALL HORIZONTAL SYSTEMS
Non-Loadbearing

<table>
<thead>
<tr>
<th>STC (SOUND TRANSMISSION CLASS)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRE RESISTANCE RATING:</strong> 2h</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**System WSD240a**
Horizontal Membrane for Duct Enclosure
*For corridors, ducts, enclosures, etc.*

- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- 38 mm (1-1/2") TYPE G SCREWS
- 200 mm (8") O.C.

- J-TRACK
- 41 mm (1-5/8") SCREWS
- 300 mm (12") O.C.

**System WSD200**

**FIRE:** ULC ER3660-01 Evaluation Report
**SOUND:** Intertek 3123470EEV

**Thickness:** 102 mm (4")
**Weight:** 54 kg/m² (11 psf)

**SPANS OF HORIZONTAL MEMBERS (CEILINGS OVER CORRIDORS OR STAIRWAYS) SHOULD NOT EXCEED SPANS SPECIFIED BY STUD MANUFACTURER. C-H, C-T, OR I STUDS ARE PERMISSIBLE.**
SHAFTWALLS
Vertical Assembly Details

**TYPICAL DETAILS – FINISHED ONE SIDE**

**OUTSIDE CORNER**
- Corner Bead
- Shaft Side
- J-Track with Panhead Screws
- Track to Track (L Corner Optional)
- 25.4 mm (1") M2TECH® or GLASROC® Shaftliner Type X
- C-H, C-T or I Stud
- 610 mm (24") O.C. Max.

**INSIDE AND OUTSIDE CORNER**
- J-Track
- Shaft Side
- Joint Taped and Finished
- 25.4 mm (1") M2TECH® or GLASROC® Shaftliner Type X

**TYPICAL START/END OF WALL**
- 25.4 mm (1") M2TECH® or GLASROC® Shaftliner Type X
- Sealant
- J-Track
- Shaft Side
- Joint Taped and Finished

**ALTERNATE END OF WALL SECTION**
- 25.4 mm (1") M2TECH® or GLASROC® Shaftliner Type X
- Sealant
- J-Track

**WALL INTERSECTION ON SHAFTLINER SIDE**
- 25.4 mm (1") M2TECH® or GLASROC® Shaftliner Type X
- 15.9 mm (5/8") CertainTeed Type X
- Screws
- 600 mm (24") O.C.

**SEPARATION WALL INTERSECTION ON FINISHED SIDE**
- 25.4 mm (1") M2TECH® or GLASROC® Shaftliner Type X
- Joint Taped and Finished
- CertainTeed 12.7 mm (1/2") Type C or 15.9 mm (5/8") Type X Products

CertainTeed Canada, Inc. 2424 Lakeshore Rd. W., Mississauga, ON L5J 1K4 Professional: 800-233-8990 Consumer: 800-782-8777 certainteed.ca
SHAFTWALLS
Vertical Assembly Details

**TYPICAL DETAILS – FINISHED BOTH SIDES**

**ABUTMENT TO MASONRY**

- CERTAINEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- SEALANT

**WALL INTERSECTION ON CAVITY SIDE**

- CERTAINEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- 25 mm (1") SCREWS 300 mm (12") O.C.

**INSIDE AND OUTSIDE CORNER**

- CERTAINEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- 25 mm (1") SCREWS 600 mm (24") O.C.
SHAFTWALLS
Vertical Assembly TYPICAL DETAILS

**SHAFTWALL TO BEAM**

- J TRACK SET TO BEAM BEFORE BEAM FIREPROOFING
- SUITABLE FASTENERS 600 mm (24") O.C.
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- CERTAINTEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS

**SHAFTWALL OFFSET FROM BEAM**

- 38 mm (1-1/2") MIN.
- 200 mm (8") MAX.
- FASTENERS 600 mm (24") O.C.
- 1.72 mm (68 MILS.) STEEL PLATE
- CERTAINTEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS

**SHAFTWALL OFFSET FROM DECK**

- 200 mm (8") MAX.
- 38 mm (1-1/2") MIN.
- FASTENERS 600 mm (24") O.C.
- 1.72 mm (68 MILS.) STEEL PLATE
- CERTAINTEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS

**CORNER COLUMN BYPASS**

- J-TRACK
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- CERTAINTEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS

**BYPASS OF LARGE COLUMNS**

- SET C-H, C-T OR I STUDS BEFORE FIREPROOFING WHERE SPACING BETWEEN J-TRACKS EXCEEDS 610 mm (24")
- COLUMN FIREPROOFING

 CERTAINTEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS
SHAFTWALLS
Vertical Assembly TYPICAL DETAILS

TOP AT BEAM AND FLOOR BYPASS
- Spray on fireproofing
- 25.4 mm (1") M2TECH® or GLASROC® Shaftliner Type X
- Suitable fasteners 600 mm (24") O.C.
- CertainTeed 12.7 mm (1/2") Type C or 15.9 mm (5/8") Type X products
- J-Track
- Sealant

SHAFT CANTILEVER
- 25.4 mm (1") M2TECH® or GLASROC® Shaftliner Type X
- CertainTeed 12.7 mm (1/2") Type C or 15.9 mm (5/8") Type X products
- J-Track
- Sealant

HAND RAIL ATTACHMENT DETAILS
- HEAVY
  - 25.4 mm (1") M2TECH® or GLASROC® Shaftliner Type X
  - CertainTeed 12.7 mm (1/2") Type C or 15.9 mm (5/8") Type X products
  - 150 mm x 150 mm (6" x 6") 1.37 mm (54 MILS.) Steel plate
  - No. 10 or larger screws

- MEDIUM
  - 25.4 mm (1") M2TECH® or GLASROC® Shaftliner Type X
  - CertainTeed 12.7 mm (1/2") Type C or 15.9 mm (5/8") Type X products
  - Attach through face layer into stud
  - No. 10 or larger screws
  - 150 mm x 660 mm (6" x 26") 0.84 mm (33 MILS.) Steel strip

- LIGHT
  - 25.4 mm (1") M2TECH® or GLASROC® Shaftliner Type X
  - CertainTeed 12.7 mm (1/2") Type C or 15.9 mm (5/8") Type X products
  - Attach through face layer into stud
  - No. 10 or larger screws
  - 150 mm x 660 mm (6" x 26") 0.84 mm (33 MILS.) Steel strip
SHAFTWALLS
Vertical Assembly TYPICAL DETAILS

SHAFTWALL ELEVATOR ELECTRICAL CONTROL LAYOUT

NOTE: STUD SIZE VARIES ACCORDING TO APPLICATION

MAIL CHUTE

CHASE WALL
SHAFTWALLS
Vertical Assembly TYPICAL DETAILS

ILLUSTRATED WITH 2h RATED ASSEMBLY

NOTE:
CLEARANCE OPENINGS AND ATTACHMENTS DETAILS SHOULD BE AS PER FIRE DAMPER MANUFACTURER’S INSTALLATION REQUIREMENTS
SHAFTWALLS
Vertical Assembly TYPICAL DETAILS

ELEVATOR DOOR FRAMING

- 0.46 mm (18 MILS.) 57 mm (2-1/4") LEG J-TRACK
- 0.85 mm (33 MILS.) 75 mm (3") LEG J-TRACK
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- CERTAINEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS
- 0.46 mm (18 MILS.) 57 mm (2-1/4") LEG J-TRACK
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- CERTAINEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS

ELEVATOR DOOR HEAD

- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- 0.46 mm (18 MILS.) 57 mm (2-1/4") LEG J-TRACK
- CERTAINEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS

J-TRACK FRAMING ABOVE DOOR

- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- 0.46 mm (18 MILS.) 57 mm (2-1/4") LEG J-TRACK
- 0.84 mm (33 MILS.) 75 mm (3") LEG J-TRACK
- CERTAINEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS

ELEVATOR DOOR JAMB

- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- 0.84 mm (33 MILS.) 75 mm (3") LEG J-TRACK
- JAMB ANCHOR CLIP
- CERTAINEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS
SHAFTWALLS
Vertical Assembly TYPICAL DETAILS

ELEVATOR DOOR FRAMING

- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- CERTAINTEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS
- 0.46 mm (18 MILS.) 57 mm (2-1/4") LEG J-TRACK
- 0.84 mm (33 MILS.) 75 mm (3") LEG J-TRACK

ELEVATOR DOOR JAMB

- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- CERTAINTEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS
- 0.84 mm (33 MILS.) 75 mm (3") LEG J-TRACK
- JAMB ANCHOR CLIP

ELEVATOR DOOR HEAD

- CERTAINTEED OR 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X
- 0.46 mm (18 MILS.) 57 mm (2-1/4") LEG J-TRACK
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER TYPE X

J-TRACK FRAMING ABOVE ELEVATOR DOOR

- CERTAINTEED 12.7 mm (1/2") TYPE C OR 15.9 mm (5/8") TYPE X PRODUCTS
- 0.46 mm (18 MILS.) 57 mm (2-1/4") LEG J-TRACK
M2Tech® or GlasRoc® Shaftliner gypsum boards are used in conjunction with other CertainTeed gypsum board products in Firewalls. Firewalls are solid type separation walls assembled using 25.4 mm (1") M2Tech® or GlasRoc® Shaftliner gypsum boards, metal framing and any minimum 12.7 mm (1/2") CertainTeed gypsum boards approved for wall construction for the interior finish. The firewall is easily stacked, floor to floor, allowing progressive construction.

Breakaway aluminum clips are used to attach the interior wall to adjacent structural metal framing and provide lateral support. When one side is exposed to fire, the clips will soften and release if the burning unit collapses. The clips on the non-fire side are protected by the firewall and will continue to support the firewall. The Firewall will remain intact to protect neighboring spaces. Firewalls are easier and faster to construct, lighter weight, and take up less space than masonry wall systems.

Installation*

Steel framing and installation of 25.4 mm (1") M2Tech® or GlasRoc® Shaftliner gypsum boards for solid type Firewalls are used as the common wall of one unit. A Firewall can be constructed by following these steps before continuing to frame the adjacent unit.

1. Attach 51 mm (2") wide C-Track to slab at bottom of wall using suitable fasteners at a maximum of 610 mm (24") o.c. Allow a minimum 19 mm (3/4") space from wood stud framing on each side of the firewall. As an alternate to the 19 mm (3/4") air space the steel components are permitted to be covered with either (a) 152 mm (6") wide batten strips of 12.7 mm (1/2") gypsum panel screw attached to the framing with 25.4 mm (1") Type S drywall screws or (b) 25.4 mm (1") mineral wood fiber insulation. Space ends of adjacent sections of C-Track a minimum of 6 mm (1/4") apart. When required, use an approved acoustical sealant to caulk around the perimeter of wall sections.

2. Install vertical C-Track at the beginning of the wall and support as needed.

3. Insert two sections of 25.4 mm (1") M2Tech® or GlasRoc® Shaftliner gypsum boards in the bottom channel and plumb to vertical C-Track. Make sure the first two shaftliner panels are seated all the way into the floor and vertical C-Tracks and that the edges are flush. Insert an H-Stud into the floor C-Track and engage the H-Stud legs over the long edges of the shaftliner panels.

4. Install the next 25.4 mm (1") M2Tech® or GlasRoc® Shaftliner gypsum boards vertically into the H-Studs. Continue wall as needed by placing H-Studs between the proceeding panels every 610 mm (24") for the length of the wall and enclose the end boards with vertical C-Track.

5. Cap the wall assembly before continuing higher using C-Track fastened to the H-Studs on alternate sides with 10 mm (3/8") Type S screws. A second C-Track for the next row of shaftliner panels is then placed back to back with end joints staggered at least 300 mm (12") o.c. and fastened with double 10 mm (3/8") Type S screws at ends and 600 mm (24") o.c.

6. Attachment Clips: Aluminum angle; 16 mm (0.063") thick, minimum 51 mm (2") and 57 mm (2-1/4") legs. Clips are secured with Type S screws 10 mm (3/8") long to H-Studs and with Type W screws 32 mm (1-1/4") long to wood framing through holes provided in the clip. Clips should be attached to each H-Stud per the following schedule:

• For firewalls up to 7 m (23') high, clip placement should be:
  i. Clips are required to be spaced a maximum of 3 m (10') o.c. vertically between wood framing and H-Studs.

• For firewalls greater than 7 m (23') high and up to 13.4 m (44') high, clip placement should be:
  i. The lower 6.1 m (20') requires clips to be spaced a maximum of 1.5 m (5') o.c. vertically between the wood framing and the H-Studs.
  ii. The upper section of the wall (6.1 m to 13.4 m) (20' to 44') requires the clips to be spaced a maximum of 3 m (10') o.c. vertically between the wood framing and the H-Studs.

• For firewalls greater than 13.4 m (44') high and up to 20.7 m (68') high, clip placement should be:
  i. The lower 7.3 m (24') requires clips to be spaced a maximum of 1 m (40") o.c. vertically between the wood framing and the H-Studs.
  ii. The next 6.1 m (20') section requires clips to be spaced a maximum of 1.5 m (5') o.c. vertically between the wood framing and the H-Studs.
  iii. The upper section of the wall 13.4 m to 20.7 m (44' to 68') requires the clips to be spaced a maximum of 3 m (10') o.c. vertically between the wood framing and the H-Studs.
7. Cap the top of the assembly with 51 mm (2") C-Track and protect the entire installation from moisture. The firewall must extend above the roof deck.

* It is important for structural purposes that the above installation particulars be followed to provide lateral support for the firewall.

**Interior Finish Wall**

8. Wood Studs – Nominal 38 mm x 89 mm (2" x 4") with a maximum spacing of 610 mm (24") o.c. Studs are cross-braced at mid-height where necessary for clip attachment. Ensure a minimum 19 mm (3/4") separation between wood framing and Firewall.

9. Insulation (Optional) – CertainTeed’s Sustainable Insulation™ (Optional) – CertainTeed CertaSound™ NoiseReducer™, Sustainable Insulation™, or equivalent, installed between wood studs to meet listed STC performance.

10. CertainTeed gypsum boards, minimum 12.7 mm (1/2") thick, 1220 mm (48") wide, applied either horizontally or vertically. Gypsum boards are attached to studs with 32 mm (1-1/4") long steel drywall nails or 32 mm (1-1/4") Type W drywall screws spaced 200 mm (8") o.c. Vertical joints are located over studs. Joints and fasteners are finished with CertainTeed Finishing system.
## FIREWALLS
### Non-Loadbearing

<table>
<thead>
<tr>
<th>STC</th>
<th>System</th>
<th>Construction Description</th>
<th>Design Number/Test Reports</th>
</tr>
</thead>
</table>
| STC 61 | System WAH261 | 0.46 mm (8 MILS) GALV 51 mm (2") STEEL CHANNEL, (FASTENED 610 mm (24") O.C. MAXIMUM) | FIRE: ULC W311 ITS Report No. 100260628SAT-006A, 006B  
SOUND: RAL-TL00-176 |
| Thickness: 292 mm (11-1/2")  
Weight: 63 kg/m² (13 psf) | | | |
| STC 70 | System WAH270 | 0.46 mm (8 MILS) GALV 51 mm (2") STEEL CHANNEL, (FASTENED 610 mm (24") O.C. MAXIMUM) | FIRE: ULC W311  
SOUND: NOAL 17-1134 |
| Thickness: 292 mm (11-1/2")  
Weight: 73 kg/m² (14.97 psf) | | | |
| STC 71 | System WAH271 | 0.46 mm (8 MILS) GALV 51 mm (2") STEEL CHANNEL, (FASTENED 610 mm (24") O.C. MAXIMUM) | FIRE: ULC W311  
SOUND: NGC 2017121_R2 |
| Thickness: 292 mm (11-1/2")  
Weight: 69.42 kg/m² (13.34 psf) | | | |
FIREWALLS
Non-Loadbearing

TYPICAL INSTALLATION DETAILS

- **H-STUD**
  - 51 mm (2"
  - 32 mm (1-1/4"

- **ALUMINUM CLIP**
  - 51 mm (2"
  - 25.4 mm (1"

- **C-TRACK**
  - 51 mm (2"
  - 25.4 mm (1"

- **FIRE RESISTANCE RATING:** 2h

**INTERMEDIATE STOREY**
- MINIMUM 12.7 mm (1/2"
- CERTAINTEED GYPSUM BOARD
- CERTAINTEED’S SUSTAINABLE INSULATION™

**INTERMEDIATE FLOOR**
- CERTAINTEED’S SUSTAINABLE INSULATION™
- 25.4 mm (1"

**FIRST FLOOR**
- CERTAINTEED’S SUSTAINABLE INSULATION™
- C-TRACK FASTENERS
- 610 mm (24" O.C.

**FOUNDATION OR BEARING WALL**
- CERTAINTEED’S SUSTAINABLE INSULATION™
- ALUMINUM CLIPS

**WOOD FRAMING**
- 38 X 89 mm (2"X4"
- CERTAINTEED’S SUSTAINABLE INSULATION™
- M2TECH® OR GLASROC® SHAFTLINER (2 LAYERS)
- ALUMINUM CLIPS
- 19.1 mm (3/4"

**AIR SPACE**
- 19.1 mm (3/4"
- CERTAINTEED’S SUSTAINABLE INSULATION™

**FLUSHING**
- 32 mm (1-1/4"
- 51 mm (2"

**ROOFING**
- 150 mm (6"

**PARAPET CAP**
- CERTAINTEED’S SUSTAINABLE INSULATION™

**VERTICAL H-STUDS NOT SHOWN**

**STC (SOUND TRANSMISSION CLASS)**

**CONSTRUCTION**

**DESCRIPTION**

**DESIGN NUMBER/TEST REPORTS**
FIRE RESISTANCE RATING: 2h

INTERMEDIATE FLOOR INTERSECTION LOCATION OF CLIPS

- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER
- DOUBLE C-TRACK SCREWED BACK-TO-BACK
- SEALANT
- FLOOR JOIST
- CEILING
- 10 mm (3/8") TYPE S PAN HEAD SCREWS
- 12.7 mm (1/2") CERTAINTED GYPSUM BOARD PRODUCT
- CERTAINTED'S SUSTAINABLE INSULATION
- 19 mm (3/4") AIR SPACE

32 mm (1-1/4") TYPE W SCREW
- ALUMINUM CLIP
- 19 mm (3/4") AIR SPACE

FIRE BLOCKING AS REQUIRED

12.7 mm (1/2") CERTAINTED GYPSUM BOARD PRODUCT
- NOMINAL 38 mm X 89 mm (2"X4") WOOD STUDS @ 610 mm (24") O.C. MAX.

H-STUD
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER
- 19 mm (3/4") AIR SPACE

450 mm (18") MIN. (OR AS REQ'D BY LOCAL CODES)

CERTAINTED'S SUSTAINABLE INSULATION

EXTerior WALL INTERSECTION

- 12.7 mm (1/2") CERTAINTED GYPSUM BOARD PRODUCT
- CERTAINTED'S SUSTAINABLE INSULATION

EXTerior FINISH
- 51 mm (2") C-TRACK
- CAULK

FIRE BLOCKING, AS REQUIRED

12.7 mm (1/2") CERTAINTED REGULAR GLASROC® SHEATHING
- H-Stud
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER
- 19 mm (3/4") AIR SPACE

NOMINAL 38 mm X 89 mm (2"X4") WOOD STUDS @ 610 mm (24") O.C. MAX.

EXTerior WALL FRAMING

PROTRUDING EXTerior WALL

- 12.7 mm (1/2") CERTAINTED REGULAR GLASROC® SHEATHING
- EXTERIOR FACING
- FLASHERING KAULKING CAP
- 51 mm (2") C-TRACK

FIRE BLOCKING, AS REQUIRED

12.7 mm (1/2") CERTAINTED REGULAR GLASROC® SHEATHING
- H-Stud
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER
- 19 mm (3/4") AIR SPACE

NOMINAL 38 mm X 89 mm (2"X4") WOOD STUDS @ 610 mm (24") O.C. MAX.

EXTerior WALL FRAMING

TYPICAL ROOF PARAPET DETAIL

- FIRE BLOCKING, AS REQUIRED
- 51 mm (2") C-TRACK
- PARAPET CAP
- FLASHERING
- ROOFING

CERTAINTED'S SUSTAINABLE INSULATION
- ALUMINUM CLIP
- 25.4 mm (1") M2TECH® OR GLASROC® SHAFTLINER

19 mm (3/4") AIR SPACE

150 mm (6")
## STEEL JOIST FLOORS & CEILINGS

<table>
<thead>
<tr>
<th>Sound Transmission Class (STC)</th>
<th>Construction</th>
<th>Description</th>
<th>Design Number/Test Reports</th>
</tr>
</thead>
</table>
| **STC 53** | System WFS1B | 51 mm (2"), 19 MPa (2800 psi) concrete floor. 15.9 mm (5/8") CertainTeed Type X products, 1 layer on steel furring channels. Fasten boards perpendicular to furring channels with 25 mm (1") screws spaced 300 mm (12") o.c. Locate screws 10 mm (3/8") minimum from edges and ends of board. Joints must be offset. Tape and finish joints with CertainTeed products. | FIRE: ULC I509  
SOUND: Calculated to ASTM E413 |
| | Thickness: 395 mm (15-1/2")  
Weight: 156 kg/m² (32 lb/ft²) | | |
| **STC 52** | System WFS152 | 12.7 mm (1/2") CertainTeed Type C products or 15.9 mm (5/8") CertainTeed Type X products, 2 layers. Cold formed steel joists, resilient channels and 150 mm (6") CertainTeed glass fibre. Subfloor-plywood, OSB or waferboard. Fasten base layer perpendicular to resilient channels with 32 mm (1-1/4") screws spaced 300 mm (12") o.c. Fasten face layer perpendicular to resilient channels with 41 mm (1-5/8") screws spaced 300 mm (12") o.c. Locate face layer end joints at double resilient channels. Locate screws minimum of 38 mm (1-1/2") from edges of board. Joints must be offset. Tape and finish joints with CertainTeed products. | FIRE: NRC 98-764/  
NBCC (2015) Table A-9.10.1.1B  
Floor F45d  
SOUND: Calculated to ASTM E413 |
| | Thickness: 257 mm (10-1/8")  
Weight: 68 kg/m² (14 lb/ft²) | | |
| | System WFS1XX | Fire rating provided by membrane only. 15.9 mm (5/8") CertainTeed Type X products, 2 layers, steel structural member, maximum spacing 600 mm (24") o.c. Fasten base layer perpendicular to supports with 25 mm (1") screws spaced 300 mm (12") o.c. Fasten face layer perpendicular to supports with 41 mm (1-5/8") screws spaced 300 mm (12") o.c. Joints must be offset. Tape and finish joints with CertainTeed products. | FIRE: NBCC (2015)  
Appendix D  
Table D.2.3.4-B |
| | Thickness: Varies  
Weight: 22 kg/m² (4.6 lb/ft²) plus framing | | |
| **STC 53** | System WFS1B | 64 mm (2-1/2"), 28 MPa (4000 psi) concrete floor. 12.7 mm (1/2") CertainTeed Type C products, 1 layer on steel furring channels. Fasten boards perpendicular to furring channels with 25 mm (1") screws spaced 200 mm (8") o.c. along end joints and 300 mm (12") o.c. in the field. Locate screws 35 mm (1-1/2") and 40 mm (1-5/8") minimum from end and side joints respectively. Joints must be offset. Tape and finish joints with CertainTeed products. | FIRE: ULC I511  
SOUND: Calculated to ASTM E413 |
| | Thickness: 355 mm (14")  
Weight: 190 kg/m² (39 lb/ft²) | | |
STEEL JOIST FLOORS & CEILINGS

<table>
<thead>
<tr>
<th>FIRE RESISTANCE RATING: 2h (continued)</th>
<th>SYSTEM WFS2E</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td></td>
</tr>
<tr>
<td>65 mm (2-1/2&quot;), 24 MPa (3500 psi) concrete floor. 12.7 mm (1/2&quot;) CertainTeed Type C products, 1 layer on steel furring channels.</td>
<td></td>
</tr>
<tr>
<td>Fasten boards perpendicular to furring channels with 25 mm (1&quot;) screws spaced 300 mm (12&quot;) o.c. Locate screws 20 mm (3/4&quot;) minimum from edges and 50 mm (2&quot;) from ends of board. Butt joints may be protected by 75 mm (3&quot;) wide by 12.7 mm (1/2&quot;) thick gypsum board back blocking. Joints must be offset. Tape and finish joints with CertainTeed products.</td>
<td></td>
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<tr>
<td>FIRE: ULC I506</td>
<td></td>
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<tr>
<td>SOUND: Calculated to ASTM E413</td>
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<table>
<thead>
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<th>SYSTEM WFS2XX</th>
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<tbody>
<tr>
<td>FIRE RESISTANCE RATING: 2h (continued)</td>
</tr>
<tr>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>Fire rating provided by membrane only. 15.9 mm (5/8&quot;) CertainTeed Type X products, 4 layers. Steel Channel joists 203 mm (8&quot;) deep with 38 mm (1-1/2&quot;) flanges and 12.7 mm (1/2&quot;) stiffening flanges spaced 610 mm (24&quot;) o.c. Minimum yield strength of joist is 227 MPa (33 ksi). Subflooring is 19 mm (3/4&quot;) thick T&amp;G wood structural panels.</td>
</tr>
<tr>
<td>First three layers perpendicular to joist with adjacent butt joints staggered 1220 mm (48&quot;). Overlapping layers installed so edges and butt joints offset minimum 250 mm (10&quot;) from previous layer. Fasten base layer with 32 mm (1-1/4&quot;) screws spaced 305 mm (12&quot;) o.c. Fasten second layer with 50 mm (2&quot;) screws spaced 305 mm (12&quot;) o.c. Fasten third layer with 63 mm (2-1/2&quot;) screws spaced 305 mm (12&quot;) o.c. Fasten hat shaped furring channels spaced 610 mm (24&quot;) o.c. perpendicular to joists with 63 mm (2-1/2&quot;) screws spaced 305 mm (12&quot;) o.c. Fasten fourth layer perpendicular to hat channels with 29 mm (1-1/8&quot;) screws spaced 305 mm (12&quot;) o.c. Screws spaced 12.7 mm (1/2&quot;) from butt end joints and 25.4 mm (1&quot;) from side joints. Tape and finish face layer joints with CertainTeed finishing products.</td>
</tr>
<tr>
<td>FIRE: ULC M514</td>
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| WOOD JOIST FLOORS & CEILINGS |

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<tr>
<th>FIRE RESISTANCE RATING: 3h</th>
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<tbody>
<tr>
<td>SYSTEM WFS3A</td>
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<tr>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>90 mm (3-1/2&quot;), 24 MPa (3500 psi) concrete floor. 12.7 mm (1/2&quot;) CertainTeed Type C products, 1 layer on steel furring channels.</td>
</tr>
<tr>
<td>Fasten boards perpendicular to furring channels with 25 mm (1&quot;) screws spaced 300 mm (12&quot;) o.c. Locate screws 20 mm (3/4&quot;) minimum from edges and 50 mm (2&quot;) from ends of board. Butt joints may be protected by 75 mm (3&quot;) wide by 12.7 mm (1/2&quot;) thick gypsum board back blocking. Joints must be offset. Tape and finish joints with CertainTeed products.</td>
</tr>
<tr>
<td>FIRE: ULC I506</td>
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<tr>
<td>SOUND: Calculated to ASTM E413</td>
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</table>

<table>
<thead>
<tr>
<th>SYSTEM WFF050</th>
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<tbody>
<tr>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>15.9 mm (5/8&quot;) CertainTeed Type X products, 1 layer. 241 mm (9-1/2&quot;) TJII wood I-joists and resilient channels. Subfloor 19 mm (3/4&quot;) OSB.</td>
</tr>
<tr>
<td>Fasten boards perpendicular to resilient channels with 32 mm (1-1/4&quot;) screws. Locate edge joints between joists. End joints staggered at least 600 mm (24&quot;). Locate 2 rows of screws 19 mm (3/4&quot;) from edge and 15 mm (5/8&quot;) from end joints. Tape and finish joints with CertainTeed products.</td>
</tr>
<tr>
<td>FIRE: ITS WNR/FCA 45-01</td>
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<tr>
<td>SOUND: With insulation.</td>
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<td>STC 57 with minimum 38 mm (1-1/2&quot;) topping.</td>
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</tbody>
</table>
## WOOD JOIST FLOORS & CEILINGS

<table>
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<tr>
<th>SOUND TRANSMISSION CLASS (STC)</th>
<th>DESCRIPTION</th>
<th>FIRE RESISTANCE RATING</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
</tr>
</thead>
</table>
| **STC 34** | System WFF134  
12.7 mm (1/2") CertainTeed Type C products, 1 layer. 38 mm x 235 mm (2 x 10) wood joists spaced 400 mm (16") o.c. Subfloor 12.5 mm (1/2") sheathing grade Douglas Fir plywood. Finished floor 15.5 mm (5/8") T&G sheathing Douglas Fir plywood. Fasten boards perpendicular to joists with 44 mm (1-3/4") nails spaced 150 mm (6") o.c. Locate nails 20 mm (3/4") from edge and 15 mm (5/8") from end joints. Tape and finish joints with CertainTeed products. | **1h** | FIRE: ULC M502  
SOUND: Calculated to ASTM E413 |
| **STC 35** | System WFF135  
19.9 mm (5/8") CertainTeed Type X products, 1 layer. 38 mm x 235 mm (2 x 10) wood joists spaced 400 mm (16") o.c. Subfloor 12.5 mm (1/2") sheathing grade Douglas Fir plywood. Finished floor 15.5 mm (5/8") T&G sheathing Douglas Fir plywood. Fasten boards perpendicular to joists with 44 mm (1-3/4") nails spaced 150 mm (6") o.c. Locate nails 20 mm (3/4") from edge and 15 mm (5/8") from end joints. Tape and finish joints with CertainTeed products. | **1h** | FIRE: ULC M500  
SOUND: Calculated to ASTM E413 |
| **STC 41** | System WFF141B  
19.9 mm (5/8") CertainTeed Type C products, 1 layer. 241 mm (9-1/2") TJI® wood I-joists with flanges minimum 2-1/2" wide by 1-1/2" deep and hat channels. Subfloor 15.9 mm (5/8") OSB or plywood. Fasten boards perpendicular to furring channels with 32 mm (1-1/4") screws spaced 150 mm (6") o.c. Locate edge joints between joists. End joints at double row of furring channel and staggered 1200 mm (48"). Locate screws 76 mm (3") from edges and ends of board. Tape and finish joints with CertainTeed products. | **1h** | FIRE: WNR/WIJ 60-01  
SOUND: Calculated to ASTM E413 |
| **STC 42** | System WFF142  
12.7 mm (1/2") CertainTeed Type C products, 1 layer. 38 mm x 235 mm (2 x 10) wood joists and resilient channels spaced 600 mm (24") o.c. spaced 400 mm (16") o.c. and resilient channels. Subfloor 12.5 mm (1/2") sheathing grade Douglas Fir plywood. Finished floor 15.5 mm (5/8") T&G sheathing Douglas Fir plywood. Fasten boards perpendicular to resilient channels with 25 mm (1") Type S screws spaced 300 mm (12") o.c. Locate edge joints between joists. Fasten board end joints to additional pieces of resilient channel extending 150 mm (6") beyond end joints and attached to joists. Locate screws 15 mm (5/8") from edges and ends of board. Tape and finish joints with CertainTeed products. | **1h** | FIRE: ULC M501  
SOUND: Calculated to ASTM E413 |
| **STC 54** | System WFF154  
Face layer of 12.7 mm (1/2") CertainTeed Type C product and 15.9 mm (5/8") base layer SilentFX® QuickCut™ Type X product. Wood I-joists 241 mm (9-1/2") deep wood I-joists spaced 610 mm (24") o.c. Subfloor 15.1 mm (19/32") plywood, OSB or waferboard with a sound mat and gypcrete 19.1 mm (3/4"). Fasten base layer perpendicular to resilient channels with 32 mm (1-1/4") screws spaced 300 mm (12") o.c. and 200 mm (8") at the butt joints. Locate edge joints between joists. End joints staggered 1200 mm (48"). Fasten face layer perpendicular to furring channels with 41 mm (1-5/8") screws spaced 200 mm (8") o.c. Butt joints must be staggered 1525 mm (60") while side joints of face layer must be offset from base layer by 610 mm (24"). Locate end joints of face layer at double resilient channels. Locate screws 38 mm (1-1/2") from edges of board. Tape and finish joints with CertainTeed products. | **1h** | FIRE: cUL M535  
SOUND: NGC 5017060 |
WOOD JOIST FLOORS & CEILINGS

**System WFF1XX**

- Fire rating provided by membrane only. 15.9 mm (5/8") CertainTeed Type X products, 2 layers. Wood joists any type, resilient or furring channels (optional). Subfloor plywood, OSB or waferboard.
- Fasten base layer perpendicular to resilient channels with 25 mm (1") screws spaced 300 mm (12") o.c. Fasten face layer perpendicular to resilient channels with 41 mm (1-5/8") screws spaced 300 mm (12") o.c. If resilient channels are not used, attach board perpendicular to wood joists with 51 mm (2") screws spaced 300 mm (12") o.c. for both layers. Joints must be offset. Tape and finish joints with CertainTeed products.

**System WFF235**

- 15.9 mm (5/8") CertainTeed Type C products, 2 layers. 38 mm x 235 mm (2 x 10) wood joists spaced 400 mm (16") o.c. and resilient channels. Subfloor 12.5 mm (1/2") sheathing grade Douglas Fir plywood. Finished floor 15.5 mm (5/8") T&G sheathing Douglas Fir plywood.
- Fasten base layer perpendicular to joists with 63 mm (2-1/2") 8d box nails spaced 180 mm (7") o.c. Locate nails a minimum 15 mm (5/8") from edges of boards. Attach resilient channels perpendicular to joists 600 mm (24") o.c. with 64 mm (2-1/2") 8d common nails. Provide a 102 mm (4") overlap at splices and a minimum 20 mm (3/4") wall clearance. Fasten face layer perpendicular to resilient channels with 25 mm (1") screws spaced 300 mm (12") o.c. with additional screws 75 mm (3") from side joints. Located edge joints between joists and fasten end joints of boards to additional pieces of resilient channel extending 150 mm (6") beyond end joints and attached to joists. Locate screws a minimum 25.4 mm (1") from edges of board. Tape and finish joints with CertainTeed products.

**System WFF254**

- 15.9 mm (5/8") CertainTeed Type C products, 3 layers. 241 mm (9-1/2") TJI® wood I-joists and resilient channels. Subfloor 15.9 mm (5/8") OSB or plywood.
- Fasten base layer perpendicular to joists with 41 mm (1-5/8") screws spaced 200 mm (8") o.c. Attach furring channels perpendicular to joists and resilient channels 400 mm (16") o.c. with 48 mm (1-7/8") screws at each joist. Fasten second layer perpendicular to furring channel with 32 mm (1-1/4") screws spaced 200 mm (8") o.c. and edges of board located between floor I-joists. Fasten face layer perpendicular to furring channels with 48 mm (1-7/8") screws spaced 200 mm (8") o.c. with joints offset. Locate screws 38 mm (1-1/2") from edges and 19 mm (3/4") from ends of boards. End joints must be staggered. Tape and finish joints with CertainTeed products.

**System WFF2XX**

- Fire rating provided by membrane only. 15.9 mm (5/8") CertainTeed Type X products, 4 layers. Wood joists, 38 mm x 184 mm (2" x 9") or minimum 450 mm (17-3/4") deep parallel chord trusses spaced a maximum of 610 mm (24"). Subflooring 19 mm (3/4") thick T&G wood structural panels.
- First three layers perpendicular to bottom of chord with adjacent butt joints staggered 1220 mm (48"). Overlapping layers installed so edges and butt joints offset minimum 250 mm (10") from previous layer. Fasten base layer with 32 mm (1-1/4") screws spaced 305 mm (12") o.c. Fasten second layer with 50 mm (2") screws spaced 305 mm (12") o.c. Fasten third layer with 63 mm (2-1/2") screws spaced 305 mm (12") o.c. Fasten hat shaped furring channels spaced 610 mm (24") o.c. perpendicular to joists with 63 mm (2-1/2") screws spaced 305 mm (12") o.c. Fasten fourth layer perpendicular to hat channels with 29 mm (1-1/8") screws spaced 305 mm (12") o.c. Screws spaced 12.7 mm (1/2") from butt end joints and 25.4 mm (1") from side joints. Tape and finish face layer joints with CertainTeed finishing products.
## COLUMN & BEAM PROTECTION

### FIRE RESISTANCE RATING: 1h

<table>
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<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
</tr>
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<tbody>
<tr>
<td><strong>Column</strong></td>
<td>System WC1Aa</td>
<td>FIRE: cUL X528</td>
</tr>
<tr>
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<td>12.7 mm (1/2&quot;) CertainTeed Type C product, 1 layer. 41 mm (1-5/8&quot;) steel studs positioned at column corners, 12.7 mm (1/2&quot;) less than column height. Install board vertically with 25 mm (1&quot;) screws spaced 610 mm (24&quot;) o.c. Apply corner bead with 25 mm (1&quot;) screws spaced 305 mm (12&quot;) o.c. Tape and finish joints with CertainTeed products.</td>
<td>(See also NBCC (2015) Appendix D Table D-2.6.1.F.)</td>
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<tr>
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<td>System WC1Ab</td>
<td>FIRE: cUL X528</td>
</tr>
<tr>
<td></td>
<td>12.7 mm (1/2&quot;) CertainTeed Type C product, 2 layers. 41 mm (1-5/8&quot;) steel studs positioned at column corners of HSS – 102 x 102 x 5 (4&quot; x 4&quot; x 0.188&quot;) column, 12.7 mm (1/2&quot;) less than column height. Install board vertically with 25 mm (1&quot;) screws spaced 610 mm (24&quot;) o.c. and fasten first layer using 25 mm (1&quot;) screws spaced 610 mm (24&quot;) o.c. Second layer fastened using 44 mm (1-3/4&quot;) screws spaces 305 mm (12&quot;) o.c. For an HSS – 200 x 200 x 6 (8&quot; x 8&quot; x 0.250&quot;) column, replace two layers of 12.7 mm (1/2&quot;) CertainTeed Type C with 1 layer of 15.9 mm (5/8&quot;) CertainTeed Type X. Fasten using 25 mm (1&quot;) screws spaced 610 mm (24&quot;) o.c. Apply corner bead with 25 mm (1&quot;) screws spaced 305 mm (12&quot;) o.c. Tape and finish joints with CertainTeed products.</td>
<td>(See also NBCC (2015) Appendix D Table D-2.6.1.F.)</td>
</tr>
</tbody>
</table>

| **Beam**     | System WB2A  | FIRE: ULC OS01             |
|              | 15.9 mm (5/8") CertainTeed Type X products, 2 layers. 43 mm x 25.4 mm (1-1/16" x 1") steel channels and 25.4 mm x 50 mm (1" x 2") steel angles. Leave a minimum 12.7 mm (1/2") clearance at sides and bottom of beam. Attach angle to steel deck with 12 mm (1/2") Phillips pan head screws spaced 300 mm (12") o.c. Attach channel brackets to angle 600 mm (24") o.c. with 12 mm (1/2") Phillips pan head screws. Attach steel angle to lower corners of U-brackets with 12 mm (1/2") Phillips pan head screws spaced 400 mm (16") o.c. Install base layer of board with 30 mm (1-1/4") screws spaced 400 mm (16") o.c. Install face layer with 45 mm (1-3/4") screws spaced 200 mm (8") o.c. Joints must be offset. Attach corner bead, tape and finish joints with CertainTeed products. | |
|              | System WB2B  | FIRE: ULC OS02             |
|              | 15.9 mm (5/8") CertainTeed Type X products, 2 layers. 43 mm x 25.4 mm (1-1/16" x 1") steel channels. Leave a minimum 12.7 mm (1/2") clearance at sides and bottom of beam. Attach angle to steel deck with 12 mm (1/2") Phillips pan head screws spaced 300 mm (12") o.c. Attach channel brackets to angle 600 mm (24") o.c. with 12 mm (1/2") Phillips pan head screws. Insert corner angle in channel bracket cutout, screw attachment is not required. Install base layer of board with 30 mm (1-1/4") screws spaced 400 mm (16") o.c. Install face layer with 45 mm (1-3/4") screws spaced 200 mm (8") o.c. Joints must be offset. Attach corner bead, tape and finish joints with CertainTeed products. | |
## COLUMN & BEAM PROTECTION

<table>
<thead>
<tr>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
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<tbody>
<tr>
<td><strong>COLUMN</strong></td>
<td><strong>System WC2Aa</strong></td>
<td>FIRE: cUL X528</td>
</tr>
<tr>
<td>Base layer 12.7 mm (1/2&quot;) CertainTeed Type C gypsum board, face layer 15.9 mm (5/8&quot;) CertainTeed Type X product. 41 mm (1-5/8&quot;) steel studs positioned at column corners, 12.7 mm (1/2&quot;) less than column height. Install base layer of board vertically with 25 mm (1&quot;) screws spaced 610 mm (24&quot;) o.c. Install face layer vertically with 44 mm (1-3/4&quot;) screws spaced 305 mm (12&quot;) o.c. Apply corner bead with 41 mm (1-5/8&quot;) screws spaced 305 mm (12&quot;) o.c. Tape and finish joints with CertainTeed products.</td>
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</tr>
</tbody>
</table>

Minimum W250 x 73 (W10 x 49) steel column.

| **COLUMN** | **System WC2Aa** | FIRE: cUL X528 |
| Base layer 12.7 mm (1/2") CertainTeed Type C gypsum board, second layer and face layer 15.9 mm (5/8") CertainTeed Type X product. 41 mm (1-5/8") steel studs positioned at HSS – 102 x 102 x 5 (4" x 4" x 0.188") column corners, 12.7 mm (1/2") less than column height. Install base layer of board vertically with 25 mm (1") screws spaced 610 mm (24") o.c. Install second layer of board vertically with 44 mm (1-3/4") screws spaced 305 mm (12") o.c. Install face layer using 57 mm (2-1/2") screws spaced 305 mm (12") o.c. For HSS – 200 x 200 x 6 (8" x 8" x 0.250") columns, all three gypsum board layers are 12.7 mm (1/2") thick. Apply corner bead with 41 mm (1-5/8") screws spaced 305 mm (12") o.c. Tape and finish joints with CertainTeed products. | |

HSS – 102 x 102 x 5 (4" x 4" x 0.188")

HSS – 200 x 200 x 6 (8" x 8" x 0.250")

| **COLUMN** | **System WC3A** | FIRE: ULC Z502 |
| 15.9 mm (5/8") CertainTeed Type X products, 3 layers. 41 mm (1-5/8") steel studs positioned at column corners, 12.7 mm (1/2") less than column height. Install base layer of board vertically with 25 mm (1") screws spaced 600 mm (24") o.c. Install second layer vertically with 45 mm (1-3/4") screws spaced 300 mm (12") o.c. Install face layer vertically with 57 mm (2-1/4") No. 8 screws spaced 300 mm (12") o.c. Apply corner bead with 45 mm (1-3/4") 6d nails spaced 300 mm (12") o.c. Tape and finish joints with CertainTeed products. | |

Minimum W250 x 73 (W10 x 49) steel column. Weight: 39 kg/m² (8 lb/ft²)
CONCRETE BLOCK/GYPSUM BOARD WALLS

<table>
<thead>
<tr>
<th>SOUND TRANSMISSION CLASS (STC)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
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<tr>
<td><strong>FIRE RESISTANCE RATING: 2h</strong></td>
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<tr>
<td>STC 47</td>
<td>System WBA247</td>
<td>140 mm (nominal 6&quot;) concrete block, 15.9 mm (5/8&quot;) CertainTeed Type X products, 1 layer, directly applied each side. Install board vertically or horizontal to each side with adhesive or mechanical fasteners. Tape and finish joints with CertainTeed products.</td>
<td>FIRE: NBCC (2015) Table A-9.10.3.1.A Wall B2b</td>
</tr>
<tr>
<td>STC 51</td>
<td>System WBA251</td>
<td>140 mm (nominal 6&quot;) concrete block, 15.9 mm (5/8&quot;) CertainTeed Type X products, 1 layer, directly applied one side. Other side, 1 layer on resilient channels. Install board on one side vertically or horizontally with adhesive or mechanical fasteners. Attach resilient channels horizontally at 610 mm (24&quot;) o.c. or 406 mm (16&quot;) o.c. to other side of the block wall. Install mineral fibre insulation in the furred space and fasten board vertically or horizontally to the resilient channels with 25 mm (1&quot;) screws spaced 300 mm (12&quot;) o.c. Tape and finish joints with CertainTeed products.</td>
<td>FIRE: NBCC (2015) Table A-9.10.3.1.A Wall B3a</td>
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<tr>
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<td></td>
<td>SOUND: NBCC (2015) Table A-9.10.3.1.A Wall B3a</td>
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<tr>
<td><strong>FIRE RESISTANCE RATING: 3h</strong></td>
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<tr>
<td>STC 50</td>
<td>System WBB350</td>
<td>190 mm (nominal 8&quot;) concrete block, 15.9 mm (5/8&quot;) CertainTeed Type X products, 1 layer, directly applied each side. Install board vertically or horizontal to each side with adhesive or mechanical fasteners. Tape and finish joints with CertainTeed products.</td>
<td>FIRE: NBCC (2015) Table A-9.10.3.1.A Wall B3e</td>
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<td>SOUND: NBCC (2015) Table A-9.10.3.1.A Wall B3e</td>
</tr>
<tr>
<td>STC 54</td>
<td>System WBB354</td>
<td>190 mm (nominal 8&quot;) concrete block, 15.9 mm (5/8&quot;) CertainTeed Type X products, 1 layer, directly applied one side. Other side, 1 layer on resilient channel. Install board on one side vertically or horizontally with adhesive or mechanical fasteners. Attach resilient channels horizontally at 610 mm (24&quot;) o.c. or 406 mm (16&quot;) o.c. to other side of the block wall. Install mineral fibre insulation in the furred space and fasten board vertically or horizontally to the resilient channels with 25 mm (1&quot;) screws spaced 300 mm (12&quot;) o.c. Tape and finish joints with CertainTeed products.</td>
<td>FIRE: NBCC (2015) Table A-9.10.3.1.A Wall B3c</td>
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<td>SOUND: NBCC (2015) Table A-9.10.3.1.A Wall B3c</td>
</tr>
<tr>
<td>STC 56</td>
<td>System WBB356</td>
<td>190 mm (nominal 8&quot;) concrete block, 15.9 mm (5/8&quot;) CertainTeed Type X products, 2 layers, on resilient channel, 1 side. Attach resilient channels horizontally at 610 mm (24&quot;) o.c. to one side of the block wall. Install mineral fibre insulation in the furred space and fasten base layer of board vertically or horizontally to the resilient channels with 25 mm (1&quot;) screws spaced 300 mm (12&quot;) o.c. Install face layer of board vertically or horizontally to resilient channel with 41 mm (1-5/8) screws spaced 300 mm (12&quot;) o.c. Joints must be offset. Tape and finish joints with CertainTeed products.</td>
<td>FIRE: NBCC (2015) Table A-9.10.3.1.A Wall B10a</td>
</tr>
<tr>
<td></td>
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<td>SOUND: NBCC (2015) Table A-9.10.3.1.A Wall B10a</td>
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</table>
STEEL STUD PERMABASE® PARTITIONS
Non-Loadbearing

<table>
<thead>
<tr>
<th>Thickness: 121 mm (4-3/4&quot;)</th>
<th>Weight: 31 kg/m² (6.4 lb/ft²)</th>
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<tbody>
<tr>
<td>400 mm (16&quot;)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Thickness: 130 mm (5-1/8&quot;)</th>
<th>Weight: 38 kg/m² (7.8 lb/ft²)</th>
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<tbody>
<tr>
<td>400 mm (16&quot;)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Thickness: 130 mm (5-1/8&quot;)</th>
<th>Weight: 44 kg/m² (9.0 lb/ft²)</th>
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</thead>
<tbody>
<tr>
<td>400 mm (16&quot;)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Thickness: 143 mm (5-5/8&quot;)</th>
<th>Weight: 47 kg/m² (9.6 lb/ft²)</th>
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</thead>
<tbody>
<tr>
<td>400 mm (16&quot;)</td>
<td></td>
</tr>
</tbody>
</table>

**FIRE RESISTANCE RATING: 1h**

**System PPC151**
Fasten 12.7 mm (1/2") PermaBase horizontally to one side of the 92 mm (3-5/8") steel studs using 25 mm (1") screws spaced 150 mm (6") o.c. on the perimeter and 200 mm (8") o.c. in the field. Install 89 mm (3-1/2") minimum 45 kg/m³ (2.8 lb/ft³) mineral wool insulation in the cavity. Fasten 15.9 mm (5/8") CertainTeed Type X products vertically to the other side with 25 mm (1") screws spaced 300 mm (12") o.c. All joints must be staggered a minimum of 300 mm (12"). Tape and finish PermaBase joints with fiberglass mesh joint tape and latex-modified Portland cement mortar applied at a minimum rate of 2.7 kg/m² (0.55 lb/ft²). Tape and finish CertainTeed Type X joints with CertainTeed products.

**FIRE: ULC W438**
**SOUND: NRC CR-6466.1**

**System PPC155**
Fasten 12.7 mm (1/2") CertainTeed Type C products vertically or horizontally to one side of 92 mm (3-5/8") steel studs using 25 mm (1") screws spaced 200 mm (8") on the perimeter and 300 mm (12") o.c. in the field. Fasten a face layer of 12.7 mm (1/2") PermaBase horizontally to the same side using 41 mm (1-5/8") screws spaced 150 mm (6") o.c. on the perimeter and 200 mm (8") o.c. in the field. Install 89 mm (3-1/2") minimum 45 kg/m³ (2.8 lb/ft³) mineral wool insulation in the cavity. Fasten 12.7 mm (1/2") CertainTeed Type C products vertically to the other side with 25 mm (1") screws spaced 200 mm (8") on the perimeter and 300 mm (12") o.c. in the field. All joints must be staggered a minimum of 300 mm (12"). Tape and finish PermaBase joints with fiberglass mesh joint tape and latex-modified Portland cement mortar applied at a minimum rate of 2.7 kg/m² (0.55 lb/ft²). Tape and finish outer layer CertainTeed Type C joints with CertainTeed products. 15.9 mm (5/8") CertainTeed Type X products may be substituted for the 12.7 mm (1/2") CertainTeed Type C products in this assembly.

**FIRE: ULC W437**
**SOUND: NRC CR-6466.6**

**System PPC159**
Fasten 12.7 mm (1/2") CertainTeed Type C products vertically or horizontally to one side of 92 mm (3-5/8") steel studs using 25 mm (1") screws spaced 300 mm (12") o.c. Widths other than 1200 mm must be installed horizontally. Fasten a face layer of 12.7 mm (1/2") PermaBase horizontally to the same side using 41 mm (1-5/8") screws spaced 150 mm (6") on the perimeter and 200 mm (8") o.c. in the field. Install 89 mm (3-1/2") minimum 45 kg/m³ (2.8 lb/ft³) mineral wool insulation in the cavity. Fasten 12.7 mm (1/2") PermaBase horizontally to the other side with 25 mm (1") screws spaced 150 mm (6") on the perimeter and 200 mm (8") o.c. in the field. All joints must be staggered a minimum of 300 mm (12"). Tape and finish PermaBase joints with fiberglass mesh joint tape and latex-modified Portland cement mortar applied at a minimum rate of 2.7 kg/m² (0.55 lb/ft²). 15.9 mm (5/8") CertainTeed Type X products may be substituted for the 12.7 mm (1/2") CertainTeed Type C products in this assembly.

**FIRE: ULC W436**
**SOUND: NRC CR-6466.3**

**System PPC259**
Fasten 12.7 mm (1/2") CertainTeed Type C products vertically or horizontally to one side of 92 mm (3-5/8") steel studs using 25 mm (1") screws spaced 305 mm (12") o.c. Fasten a face layer of 12.7 mm (1/2") PermaBase horizontally to the same side using 41 mm (1-5/8") screws spaced 230 mm (9") o.c. Joints must be staggered a minimum of 300 mm (12") from joints in the base layer. Install 89 mm (3-1/2") minimum 34 kg/m³ (2.1 lb/ft³) mineral wool insulation in the cavity. Fasten 12.7 mm (1/2") CertainTeed Type C board vertically or horizontally to other side using 25 mm (1") screws spaced 300 mm (12") o.c. Fasten a face layer of 12.7 mm (1/2") CertainTeed Type C products vertically or horizontally to one side of 41 mm (1-5/8") screws spaced 230 mm (9") o.c. Joints must be staggered a minimum of 600 mm (24") from joints in the base layer. Tape and finish PermaBase joints with fiberglass mesh joint tape and latex-modified Portland cement mortar applied at a minimum rate of 2.7 kg/m² (0.55 lb/ft²). Tape and finish outer layer CertainTeed or M2Tech® Type C joints with CertainTeed products. 15.9 mm (5/8") CertainTeed Type X products may be substituted for the 12.7 mm (1/2") CertainTeed Type C products in this assembly.

**FIRE: ULC W439**
**SOUND: NRC CR-6466.4**
STEEL STUD PERMABASE PARTITIONS
Non-Loadbearing

<table>
<thead>
<tr>
<th>SOUND TRANSMISSION CLASS (STC)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
</tr>
</thead>
</table>
| **FIRE RESISTANCE RATING:** 2h | System PPC261 | Fasten 12.7 mm (1/2") CertainTeed Type C products vertically or horizontally to each side of 92 mm (3-5/8") steel studs using 25 mm (1") screws spaced 305 mm (12") o.c. Fasten a face layer of 12.7 mm (1/2") PermaBase horizontally to each side using 41 mm (1-5/8") screws spaced 230 mm (9") o.c. Install 89 mm (3-1/2") minimum 34 kg/m³ (2.1 lb/ft³) mineral wool insulation in the cavity. All joints must be staggered a minimum of 300 mm (12"). Tape and finish PermaBase joints with fiberglass mesh joint tape and latex-modified Portland cement mortar applied at a minimum rate of 2.7 kg/m² (0.55 lb/ft²). 15.9 mm (5/8") CertainTeed Type X products may be substituted for the 12.7 mm (1/2") CertainTeed Type C products in this assembly. | FIRE: ULC W439  
SOUND: NRC CR-6466.5 |
| STC 61 | 400 mm (16") | Thickness: 143 mm (5-5/8")  
Weight: 53 kg/m² (11 lb/ft²) | |

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STEEL STUD PERMABASE PARTITIONS
(CHASE WALL)* Non-Loadbearing

| FIRE RESISTANCE RATING: 1h | System PPA153 | Position paired 41 mm (1-5/8") steel studs and track a minimum of 9.5 mm (3/8") apart. Maintain separation between paired steel studs by attaching steel stud bridging 760 mm (30") o.c. to steel stud webs using self-drilling, self-tapping screws (two per stud).  
Fasten 12.7 mm (1/2") PermaBase horizontally to one side using 25 mm (1") screws spaced 150 mm (6") o.c. on the perimeter and 200 mm (8") o.c. in the field. Install 89 mm (3-1/2") minimum 45 kg/m³ (2.8 lb/ft³) mineral wool insulation in the cavity. Fasten 15.9 mm (5/8") CertainTeed Type X products vertically to the other side with 25 mm (1") screws spaced 300 mm (12") o.c. All joints must be staggered a minimum of 300 mm (12"). Tape and finish PermaBase joints with fiberglass mesh joint tape and latex-modified Portland cement mortar applied at a minimum rate of 2.7 kg/m² (0.55 lb/ft²). 15.9 mm (5/8") CertainTeed Type X products may be substituted for the 12.7 mm (1/2") CertainTeed Type C products in this assembly. | FIRE: ULC W438  
SOUND: Estimate based on NRC CR-6466.1 |
| STC 53 | 400 mm (16") | Thickness: 121 mm (4-3/4")  
Weight: 53 kg/m² (6.7 lb/ft²) | |

| System PPA157 | Position paired 41 mm (1-5/8") steel studs and track a minimum of 9.5 mm (3/8") apart. Maintain separation between paired steel studs by attaching steel stud bridging 760 mm (30") o.c. to steel stud webs using self-drilling, self-tapping screws (two per stud).  
Fasten 12.7 mm (1/2") CertainTeed Type C products vertically or horizontally to one side using 25 mm (1") screws spaced 200 mm (8") on the perimeter and 300 mm (12") o.c. in the field. Fasten a face layer of 12.7 mm (1/2") PermaBase horizontally to the same side using 41 mm (1-5/8") screws spaced 150 mm (6") o.c. on the perimeter and 200 mm (8") o.c. in the field. Install 89 mm (3-1/2") minimum 45 kg/m³ (2.8 lb/ft³) mineral wool insulation in the cavity. Fasten 12.7 mm (1/2") CertainTeed Type C board vertically to the other side with 25 mm (1") screws spaced 200 mm (8") on the perimeter and 300 mm (12") o.c. in the field. All joints must be staggered a minimum of 300 mm (12"). Tape and finish PermaBase joints with fiberglass mesh joint tape and latex-modified Portland cement mortar applied at a minimum rate of 2.7 kg/m² (0.55 lb/ft²). Tape and finish outer layer CertainTeed Type C products’ joints with CertainTeed products. 15.9 mm (5/8") CertainTeed Type X products may be substituted for the 12.7 mm (1/2") CertainTeed Type C products in this assembly. | FIRE: ULC W437  
SOUND: NRC CR-6466.8 |
| STC 57 | 400 mm (16") | Thickness: 130 mm (5-1/8")  
Weight: 40 kg/m² (8.1 lb/ft²) | |
STEEL STUD PERMABASE PARTITIONS
(CHASE WALL)* Non-Loadbearing

<table>
<thead>
<tr>
<th>SOUND TRANSMISSION CLASS (STC)</th>
<th>CONSTRUCTION</th>
<th>DESCRIPTION</th>
<th>DESIGN NUMBER/TEST REPORTS</th>
</tr>
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<tbody>
<tr>
<td><strong>FIRE RESISTANCE RATING: 1h</strong> (continued)</td>
<td></td>
<td></td>
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</table>

**STC 60**

System PPA160
Position paired 41 mm (1-5/8") steel studs and track a minimum of 9.5 mm (3/8") apart. Maintain separation between paired steel studs by attaching steel stud bridging 760 mm (30") o.c. to steel stud webs using self-drilling, self-tapping screws (two per stud).

Fasten 12.7 mm (1/2") CertainTeed Type C products vertically or horizontally to one side using 25 mm (1") screws spaced 305 mm (12") o.c. Fasten a face layer of 12.7 mm (1/2") PermaBase horizontally to the same side using 41 mm (1-5/8") screws spaced 150 mm (6") on the perimeter and 200 mm (8") o.c. in the field. Install 89 mm (3-1/2") minimum 45 kg/m³ (2.8 lb/ft³) mineral wool insulation in the cavity. Fasten 12.7 mm (1/2") PermaBase horizontally to the other side using 25 mm (1") screws spaced 150 mm (6") on the perimeter and 200 mm (8") o.c. in the field. All joints must be staggered a minimum of 300 mm (12"). Tape and finish PermaBase joints with fiberglass mesh joint tape and latex-modified Portland cement mortar applied at a minimum rate of 2.7 kg/m² (0.55 lb/ft²). 15.9 mm (5/8") CertainTeed Type X products may be substituted for the 12.7 mm (1/2") CertainTeed Type C products in this assembly.

**STC 61**

System PPA261
Position paired 41 mm (1-5/8") steel studs and track a minimum of 9.5 mm (3/8") apart. Maintain separation between paired steel studs by attaching steel stud bridging 760 mm (30") o.c. to steel stud webs using self-drilling, self-tapping screws (two per stud).

Fasten 12.7 mm (1/2") CertainTeed Type C products vertically or horizontally to one side using 25 mm (1") screws spaced 305 mm (12") o.c. Fasten a face layer of 12.7 mm (1/2") PermaBase horizontally to the same side using 41 mm (1-5/8") screws spaced 230 mm (9") o.c. Joints must be staggered a minimum of 300 mm (12") from joints in the base layer. Install 89 mm (3-1/2") minimum 34 kg/m³ (2.1 lb/ft³) mineral wool insulation in the cavity. Fasten 12.7 mm (1/2") CertainTeed Type C products vertically or horizontally to the other side using 25 mm (1") screws spaced 305 mm (12") o.c. Fasten a face layer of 12.7 mm (1/2") CertainTeed Type C products vertically or horizontally to the same side using 41 mm (1-5/8") screws spaced 200 mm (8") o.c. Joints must be staggered a minimum of 600 mm (24") from joints in the base layer. Tape and finish PermaBase joints with fiberglass mesh joint tape and latex-modified Portland cement mortar applied at a minimum rate of 2.7 kg/m² (0.55 lb/ft²). Tape and finish outer layer CertainTeed Type C products’ joints with CertainTeed products. 15.9 mm (5/8") CertainTeed Type X products may be substituted for the 12.7 mm (1/2") CertainTeed Type C products in this assembly.

**STC 63**

System PPA263
Position paired 41 mm (1-5/8") steel studs and track a minimum of 9.5 mm (3/8") apart. Maintain separation between paired steel studs by attaching steel stud bridging 760 mm (30") o.c. to steel stud webs using self-drilling, self-tapping screws (two per stud).

Fasten 12.7 mm (1/2") CertainTeed Type C products vertically or horizontally to each side using 25 mm (1") screws spaced 305 mm (12") o.c. Fasten a face layer of 12.7 mm (1/2") PermaBase horizontally to each side using 41 mm (1-5/8") screws spaced 230 mm (9") o.c. Install 89 mm (3-1/2") minimum 34 kg/m³ (2.1 lb/ft³) mineral wool insulation in the cavity. All joints must be staggered a minimum of 300 mm (12"). Tape and finish PermaBase joints with fiberglass mesh joint tape and latex-modified Portland cement mortar applied at a minimum rate of 2.7 kg/m² (0.55 lb/ft²). 15.9 mm (5/8") CertainTeed Type X products may be substituted for the 12.7 mm (1/2") CertainTeed Type C products in this assembly.

* Chase Wall Partitions provide a space in the partition cavity to accommodate plumbing, electrical and other services.
The Canadian Gypsum and Insulation Systems Manual is the result of CertainTeed’s focus on innovation, safety, durability and sustainability. Many of the assemblies within are composed of sustainable products recognized by independent 3rd parties. For more information on CertainTeed products or to download a digital copy of this manual, visit certainteed.ca.