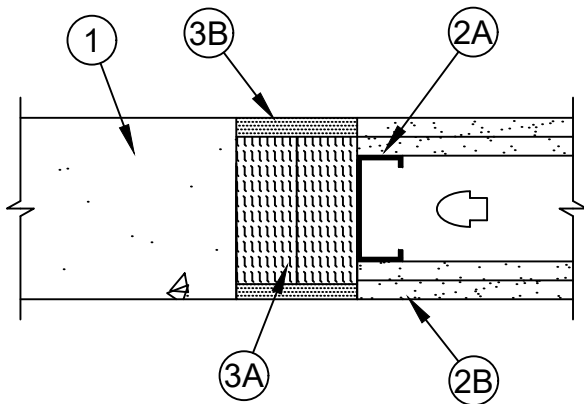


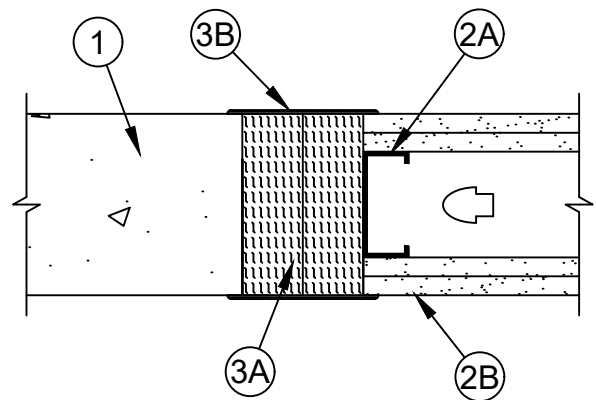


**System No. WW-D-1090**

ANSI/UL2079	CAN/ULC S115
Assembly Rating - 1 and 2 Hr (See Item 2)	F Rating - 1 and 2 Hr (See Item 2)
Nominal Joint Width - 4 in. (102 mm)	FT Rating - 1 and 2 Hr (See Item 2)
Class II Movement Capabilities - 7, 15 and 25 % Compression or Extension (See Item 3)	FH Rating - 1 and 2 Hr (See Item 2)
L Rating At Ambient - Less Than 1 CFM/sq ft	FTH Rating - 1 and 2 Hr (See Item 2)
L Rating At 400 F - Less Than 1 CFM/sq ft	Nominal Joint Width - 4 in. (102 mm)
	Class II Movement Capabilities - 7, 15 and 25 % Compression or Extension (See Item 3)
	L Rating At Ambient - Less Than 1 CFM/sq ft
	L Rating At 400 F - Less Than 1 CFM/sq ft



CONFIGURATION A



CONFIGURATION B

- Wall Assembly** - Min 6 in. (152 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) structural concrete. Additionally, thickness of concrete wall shall be equal to or greater than thickness of gypsum board wall. Wall may also be constructed of any UL Classified **Concrete Blocks**\*.  
See **Concrete Blocks** (CAZT) category in the Fire Resistance Directory for names of manufacturers.
- Wall Assembly** - The 1 or 2 h fire-rated gypsum board/steel stud wall assembly shall be constructed of the materials and in the manner specified in the individual U400, V400 or W400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
  - Studs** - Min 3-1/2 in. (89 mm) wide steel studs spaced max 24 in. (610 mm) OC.
  - Gypsum Board\*** - The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Design in the UL Fire Resistance Directory.

**The hourly ratings of the joint system are equal to the hourly rating of the gypsum wall assembly.**



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### CONFIGURATION A

3. **Joint** - Max width of joint (at time of installation) is 4 in. (102 mm). The joint system is designed to accommodate for various percentages in compression or extension from its installed width depending on the product used (See Table Below). The joint system shall consist of forming and fill materials as follows:

A. **Forming Material\*** - Min 4 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation installed in joint opening as a permanent form. Pieces of batt cut to min width of 4 in. (102 mm) and installed edge-first into joint opening, parallel with joint direction, such that batt sections are compressed min 50 percent in thickness and such that the compressed batt sections are recessed from each surface of the wall to accommodate the required thickness of fill material (Item 3B). Adjoining lengths of batt to be tightly-butted with butted seams spaced min 16 in. (406 mm) apart along the length of the joint.

**IIG MINWOOL L L C** - MinWool-1200 Safing

**JOHNS MANVILLE INTERNATIONAL INC** - Safing

**ROCK WOOL MANUFACTURING CO** - Delta Board

**ROCKWOOL MALAYSIA SDN BHD** - SAFE

**ROXUL INC** - SAFE

**THERMAFIBER INC** - Type SAF

B. **Fill, Void or Cavity Material\* Sealant** - Min 5/8 in. (16 mm) thickness of fill material installed on each side of the wall between the side of the gypsum board and the face of the concrete wall assembly, flush with each surface of the gypsum wall.

**SPECIFIED TECHNOLOGIES INC** - SpecSeal ES Sealant, SpecSeal LC150 Sealant, SpecSeal LCI Sealant and SpecSeal SIL300 Series Sealant

**The Movement Capabilities for each product are shown in following table:**

Product	Movement Capabilities, %	
	Compression	Extension
ES Sealant	15	15
ES Sealant	25	0
LC150 Sealant	7	7
LCI Sealant	25	0
SIL300 Sealant	25	25

### CONFIGURATION B

4. **Joint** - Max width of joint (at time of installation) 4 in. (102 mm). **The joint system is designed to accommodate a max 25% in compression or extension from its installed width.** The joint system shall consist of forming and fill materials as follows:

A. **Forming Material\*** - Sections of min 4 pcf (64 kg/m<sup>3</sup>) density mineral wool batt compressed 50 percent in thickness and installed cut edge first to completely fill the gap between the gypsum board and the concrete wall. The forming material shall be installed flush with both surfaces of wall.

**IIG MINWOOL L L C** - MinWool-1200 Safing

**JOHNS MANVILLE INTERNATIONAL INC** - Safing

**ROCK WOOL MANUFACTURING CO** - Delta Board

**ROCKWOOL MALAYSIA SDN BHD** - SAFE

**ROXUL INC** - SAFE

**THERMAFIBER INC** - Type SAF

B. **Fill, Void or Cavity Material\* - Sealant** - Min 1/16 in. (1.6 mm) dry thickness (1/8 in. or 3.2 mm wet thickness) of fill material spray applied over the forming material (Item 3A) on each side of the wall and overlap a min 1/2 in. (13 mm) onto gypsum board and concrete wall on both sides of the wall.

**SPECIFIED TECHNOLOGIES INC** - SpecSeal AS200 Elastomeric Spray

**\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



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WW-D-1090  
PAGE 2 OF 2

UL/cUL SYSTEM NO. W-L-7188

## SUPPORT MEMBER THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.

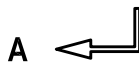
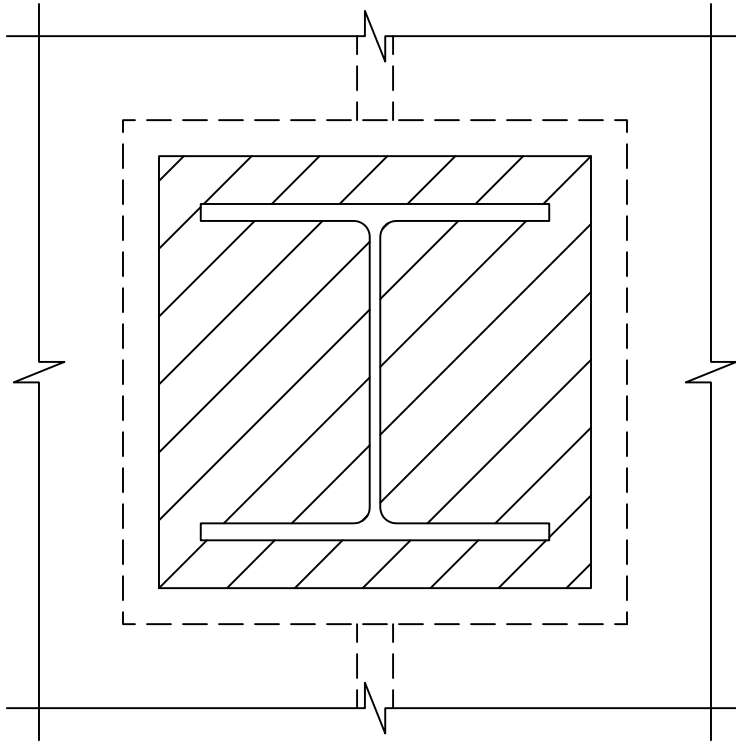
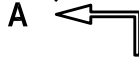
T-RATING = 0-HR.

L-RATING AT AMBIENT = LESS THAN 1 CFM / SQ FT

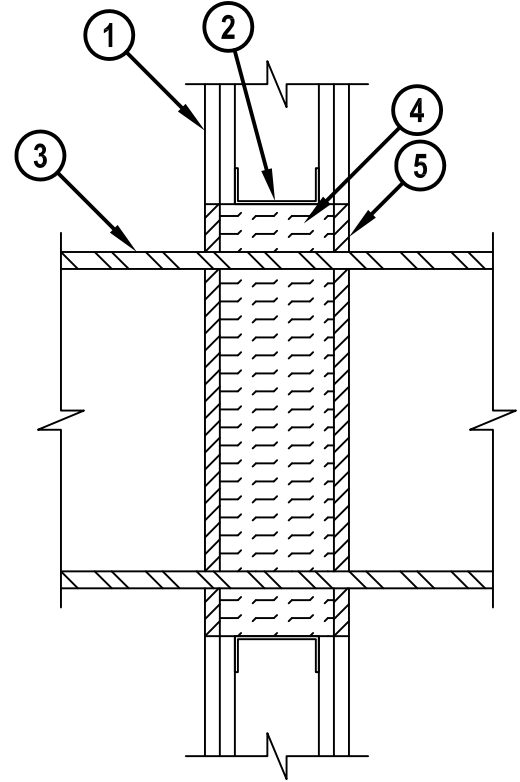
L-RATING AT 400°F = LESS THAN 1 CFM / SQ FT

WL7188b.011415

**FRONT VIEW**

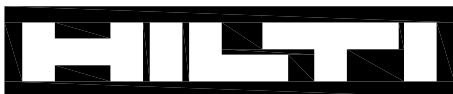


**SECTION A-A**



1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U400 OR V400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN) TO INCLUDE THE FOLLOWING CONSTRUCTION FEATURES :
  - A. STEEL STUDS TO BE MINIMUM 3-1/2" WIDE (SPACED MAXIMUM 24" OC).
  - B. NOMINAL 5/8" THICK GYPSUM WALLBOARD. TYPE, NUMBER OF LAYERS, AND SHEET ORIENTATION AS SPECIFIED IN THE INDIVIDUAL UL DESIGN.
2. OPENING TO BE FRAMED OUT WITH ADDITIONAL FRAMING MEMBERS.
3. STEEL I-BEAM SERVICE SUPPORT (MAXIMUM SIZE : W14x90).
4. MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED, RECESSED TO ACCOMMODATE SEALANT.
5. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX OR FS-ONE INTUMESCENT FIRESTOP SEALANT.

NOTES : 1. MAXIMUM SIZE OF OPENING = 324 SQ. IN., WITH A MAXIMUM DIMENSION OF 18".  
2. ANNULAR SPACE = MINIMUM 1/2", MAXIMUM 3".



**Hilti Firestop Systems**

HILTI, Inc.  
Tulsa, Oklahoma USA (800) 879-8000

Sheet	1 of 1
Scale	1/8" = 1"
Date	Jan. 14, 2015

Drawing No.

**WL  
7188b**

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Classified by  
Underwriters Laboratories, Inc.  
to UL 2079 and CAN/ULC-S115

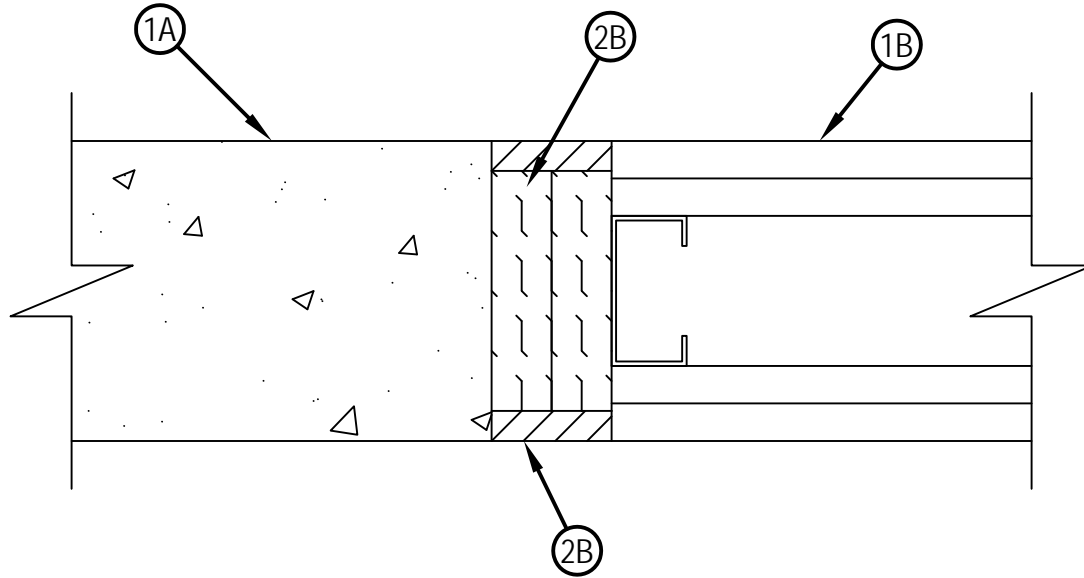
# System No. WW-D-0068

Assembly Rating — 1 and 2 Hr (See Item 1)

Nominal Joint Width — 2 in.

Class II Movement Capabilities — 12.5% Compression or Extension

WW-D-0068



1. Wall Assembly — The wall assembly shall consist of the following:

A. Min 2-3/4 and 4 in. (70 and 102 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) structural concrete for 1 and 2 hr rated assemblies, respectively. Additionally, thickness of concrete wall shall be equal to or greater than thickness of gypsum board wall. Wall may also be constructed of any UL Classified Concrete Blocks\*.

See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

B. Nonbearing 1 or 2 hr fire rated gypsum board/steel stud assembly constructed of the materials and in the manner described in the individual U400 or V400 Series Wall and Partition Design in the UL Fire Resistance Directory and shall include the following construction features:

A. Studs — Min 1-1/2 in. (38 mm) wide steel studs spaced max 24 in. (610 mm) OC.

B. Gypsum Board\* — The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U400 or V400 Series Design in the UL Fire Resistance Directory.

The hourly assembly rating of the joint system is equal to the hourly fire rating of the wall assembly in which it is installed.

2. Joint System — Max width of joint (at time of installation of joint system) is 2 in. (51 mm) The joint system is designed to accommodate a max 12.5 percent compression or extension from its installed width. The joint system shall consist of the following:

A. Forming Material\* — Min 4.0 pcf (64 kg/m<sup>3</sup>) mineral wool batt insulation installed in joint opening as a permanent form. Pieces of batt cut to min width of 1-3/4, 3, or 4-1/4 in. (44, 76 or 108 mm) for 1, 2 and 3 hr rated assemblies, respectively. Pieces of batt installed edge-first into joint opening, parallel with joint direction, such that batt sections are compressed min 50 percent in thickness and such that the compressed batt sections are recessed from both surfaces of gypsum board wall to accommodate the required thickness of fill material.

FIBREX INSULATIONS INC — FBX Safing Insulation

B. Fill, Void or Cavity Material\* - Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the joint, flush with both surfaces of gypsum board wall.

HILTI CONSTRUCTION CHEMICALS, DIV OF

HILTI INC — CP606 Flexible Firestop Sealant

\*Bearing the UL Classification Mark



**Hilti Firestop Systems**

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April 15, 2009