

UL/cUL SYSTEM NO. W-L-1597

METAL PIPE THROUGH GYPSUM WALL ASSEMBLY

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

T-RATING = 0-HR.

M-RATING = SEE TABLE BELOW

L-RATING (WITHOUT MOVEMENT) AT AMBIENT = 5 CFM/SQ FT

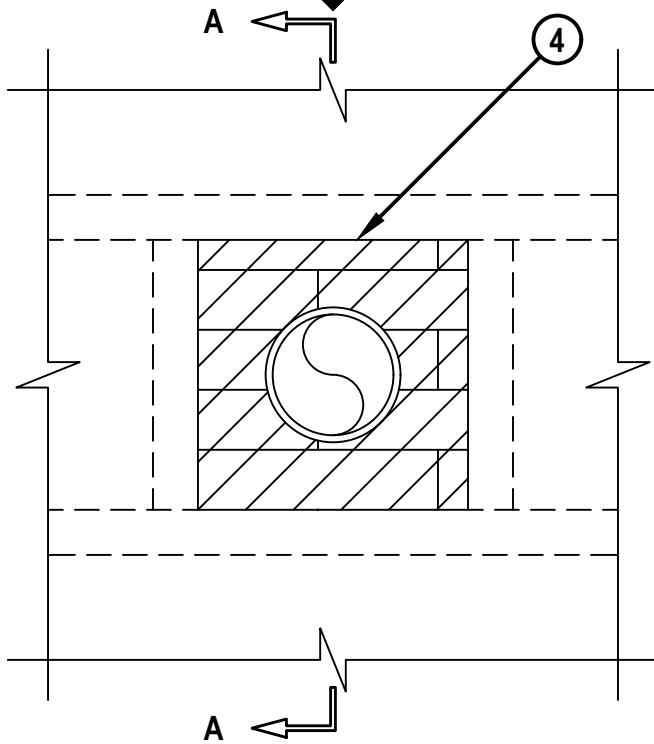
L-RATING (WITHOUT MOVEMENT) AT 400°F = 2 CFM/SQ FT

L-RATING (WITH MOVEMENT) AT AMBIENT = 5.2 CFM/SQ FT

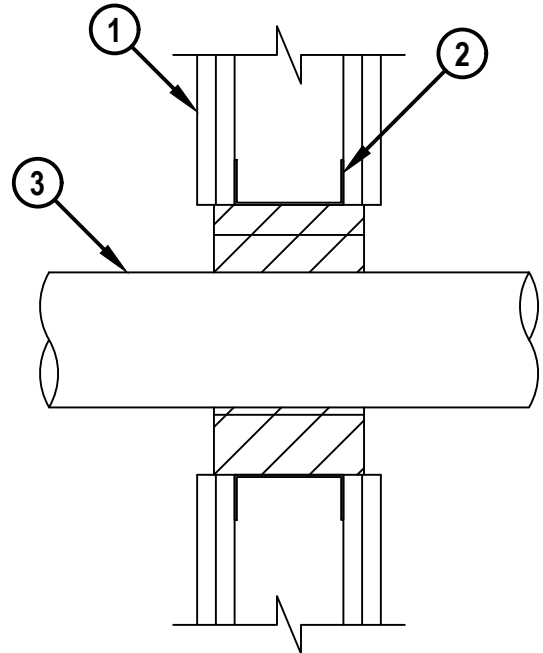
L-RATING (WITH MOVEMENT) AT 400°F = 1.03 CFM/SQ FT

WL 1597a.082925

FRONT VIEW



SECTION A-A



HILTI
Hilti Firestop Systems

HILTI, Inc.
Plano, Texas USA (800) 879-8000

Sheet	1 of 2
Scale	5/32" = 1"
Date	Aug. 29, 2025

Drawing No.

WL
1597a

Saving Lives through Innovation and Education

METAL PIPE THROUGH GYPSUM WALL ASSEMBLY

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

T-RATING = 0-HR.

M-RATING = SEE TABLE BELOW

L-RATING (WITHOUT MOVEMENT) AT AMBIENT = 5 CFM/SQ FT

L-RATING (WITHOUT MOVEMENT) AT 400°F = 2 CFM/SQ FT

L-RATING (WITH MOVEMENT) AT AMBIENT = 5.2 CFM/SQ FT

L-RATING (WITH MOVEMENT) AT 400°F = 1.03 CFM/SQ FT

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1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300, U400, V400, OR W400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN) TO INCLUDE THE FOLLOWING CONSTRUCTION FEATURES :
 - A. [NOT SHOWN] WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER (SPACED MAXIMUM 16" OC). STEEL STUDS TO BE MINIMUM 3-5/8" 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 STUD FRAMING MEMBERS.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
 - A. MAXIMUM 4" DIAMETER STEEL PIPE (SCHEDULE 40 OR HEAVIER).
 - B. MAXIMUM 4" NOMINAL DIAMETER STEEL CONDUIT.
 - C. MAXIMUM 4" NOMINAL DIAMETER STEEL EMT.
 - D. MAXIMUM 4" NOMINAL DIAMETER COPPER PIPE OR TUBING (TYPE L, REGULAR, OR HEAVIER).
 - E. MAXIMUM 2" NOMINAL DIAMETER ALUMINUM PIPE (SCH. 10 OR HEAVIER) (CLOSED OR VENTED).
 - F. MAXIMUM 2" NOMINAL DIAMETER ALUMINUM CONDUIT (CLOSED OR VENTED).
 - G. MAXIMUM 2" NOMINAL DIAMETER ALUMINUM EMT (CLOSED OR VENTED).
4. HILTI CFS-BL FIRESTOP BLOCK (2" THICK x 8" WIDE x 5" DEEP, REFERENCE : FRONT VIEW) FIRMLY PACKED AND CENTERED WITHIN WALL ASSEMBLY (SEE NOTE BELOW).

M-RATING TABLE

MOVEMENT DIRECTION	NOMINAL PENETRANT DIAM.	ANNULAR SPACE	MOVEMENT
Y	4"	MAX 2-1/2"	50%
Z	4"	2-1/2"	MAX 2.23"

****PERCENTAGE MOVEMENT BASED ON THE MINIMUM DISTANCE BETWEEN OUTER DIAMETER OF PENETRANT AND INSIDE OPENING.**

NOTES : 1. MAXIMUM AREA OF OPENING = 81 SQ. IN., WITH A MAXIMUM DIMENSION OF 9".
 2. ANNULAR SPACE = MINIMUM 0" TO MAXIMUM 2-1/2".
 3. APPLY HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT INTO ANY VOID THAT MAY EXIST (AROUND PENETRANTS OR BETWEEN FIRESTOP BLOCKS), TO MAXIMUM EXTENT POSSIBLE.
 4. FOR WALLS CONSTRUCTED OF STEEL STUDS LARGER THAN 3-5/8", FIRESTOP BLOCKS SHOULD BE INSTALLED 8" DEEP. FIRESTOP BLOCKS MAY BE RECESSED MAXIMUM 1/2" FROM SURFACE OF WALL.

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Sheet 2 of 2

Scale -

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