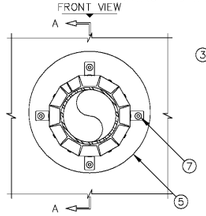
UL SYSTEM NO. W-L-2084

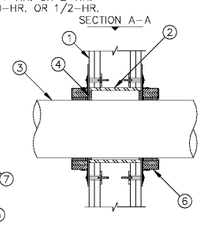
PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1-HR. OR 2-HR.
T-RATING = 0-HR. OR 1/2-HR.

FRONT VIEW



SECTION A-A



WL2084c.121505

1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300 OR U400 SERIES) (1-HR. OR 2-HR. FIRE-RATING). (2-HR. SHOWN).
2. MAXIMUM 8" NOMINAL DIAMETER STEEL PIPE SLEEVE (SCHEDULE 40 OR THINNER).
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING (ALSO SEE NOTE NO. 3 BELOW) :
   A. MAXIMUM 8" NOMINAL DIAMETER PVC PLASTIC PIPE (CELLULAR OR SOLID CORE).
   B. MAXIMUM 8" NOMINAL DIAMETER ABS PLASTIC PIPE (CELLULAR OR SOLID CORE).
   C. MAXIMUM 6" NOMINAL DIAMETER FRPP PLASTIC PIPE.
   D. MAXIMUM 6" NOMINAL DIAMETER CPVC PLASTIC PIPE.
4. [OPTIONAL] MINIMUM 1/4" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
5. SHEET METAL COVER PLATE (MINIMUM 18 GA.) PLACED OVER OPENING PRIOR TO ATTACHING HILTI CP 643N FIRESTOP COLLAR (ALSO SEE NOTE NO. 4 BELOW).
6. HILTI CP 643N FIRESTOP COLLAR WITH FASTENING HOOKS.
7. HILTI 3/16" TOGGLER BOLTS AND WASHERS TO ATTACH EACH FASTENING HOOK TO GYPSUM WALL ASSEMBLY. FOR PIPES 4" OR SMALLER, COLLARS MAY BE FASTENED WITH NO. 10 x 1-1/2" LONG DRYWALL OR LAMINATE SCREWS WITH 3/4" STEEL WASHERS.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 8".
2. ANNULAR SPACE = MINIMUM 1/4", MAXIMUM 1-1/4".
3. CLOSED OR VENTED PIPING SYSTEM (ABS, PVC, FRPP = SCHEDULE 40; CPVC = SDR 17).
4. INSIDE DIAMETER OF COVER PLATE SHOULD BE MAXIMUM 1/4" LARGER THAN OUTSIDE DIAMETER OF PIPE. OUTSIDE DIAMETER OF COVER PLATE SHOULD BE MINIMUM 2-1/2" LARGER THAN OUTSIDE DIAMETER OF PIPE.

HILTI FIRESTOP SYSTEMS | HILTI, Inc. Tulsa, Oklahoma USA (918) 252-6000 | Sheet 1 of 1 | Scale 5/32" = 1" | Date Dec. 15, 2005 | Drawing No. WL 2084e

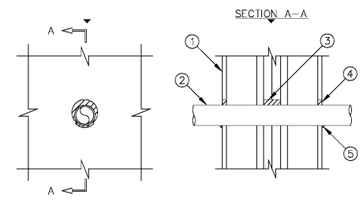
Saving Lives through Innovation and Education

UL SYSTEM NO. W-L-2472

PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 2-HR.
T-RATING = 2-HR.

SECTION A-A



WL2472b.112407

1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300 SERIES) (2-HR. FIRE-RATING) CONSISTING OF THE FOLLOWING :
   A. NOMINAL 2 x 4 STUDS SPACED MAXIMUM 24" OC.
   B. STEEL "H" SHAPED STUDS SPACED MAXIMUM 24" OC.
   C. TWO LAYERS 1" GYPSUM WALLBOARD LINER PANELS.
   D. MINIMUM 1/2" THICK GYPSUM WALLBOARD.
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 2" NOMINAL DIAMETER PVC PLASTIC PIPE (CELLULAR OR SOLID CORE).
   B. MAXIMUM 2" NOMINAL DIAMETER CPVC PLASTIC PIPE (CLOSED PIPING SYSTEM ONLY).
   C. MAXIMUM 2" NOMINAL DIAMETER RNC-PVC CONDUIT.
3. MINIMUM 2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED WITHIN GYPSUM WALLBOARD LINER PANELS.
4. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED FLUSH WITH OUTER SURFACES OF GYPSUM WALLBOARD.
5. MINIMUM 1/4" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT WITH OUTER SURFACE OF GYPSUM WALLBOARD.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 4".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 5/8".
3. CLOSED OR VENTED PIPING SYSTEM (PVC = SCHEDULE 40; CPVC = SDR 13.5).

HILTI FIRESTOP SYSTEMS | HILTI, Inc. Tulsa, Oklahoma USA (918) 252-6000 | Sheet 1 of 1 | Scale 5/32" = 1" | Date Nov. 24, 2007 | Drawing No. WL 2472b

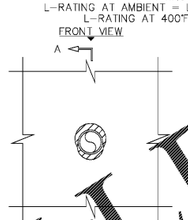
Saving Lives through Innovation and Education

UL SYSTEM NO. W-L-2474

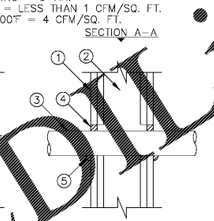
PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY

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° = 4 CFM/SQ. FT.

FRONT VIEW



SECTION A-A



WL2474c.022312

1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300 OR V400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. MAXIMUM 2" NOMINAL DIAMETER PVC PLASTIC PIPE (SCHEDULE 40 OR HEAVIER) (CELLULAR OR SOLID CORE) (CLOSED PIPING SYSTEM).
3. MAXIMUM 2" NOMINAL DIAMETER CPVC PLASTIC PIPE (SDR 13.5) (CLOSED PIPING SYSTEM ONLY).
4. MAXIMUM 2" NOMINAL DIAMETER PEX TUBING (SDR 9) (CLOSED PIPING SYSTEM ONLY).
5. MAXIMUM 2" NOMINAL DIAMETER RNC-PVC CONDUIT (SCHEDULE 40).
6. MINIMUM 5/8" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
7. MINIMUM 1/2" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 3".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1/2".

HILTI FIRESTOP SYSTEMS | HILTI, Inc. Tulsa, Oklahoma USA (918) 252-6000 | Sheet 1 of 1 | Scale 3/16" = 1" | Date Feb. 23, 2012 | Drawing No. WL 2474b

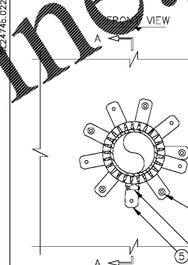
Saving Lives through Innovation and Education

UL SYSTEM NO. W-L-2251

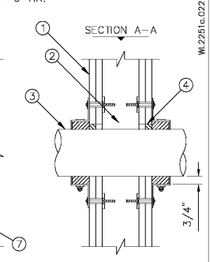
PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1 AND 2-HR.
T-RATING = 0-HR.

FRONT VIEW



SECTION A-A



WL2251a.022702

1. GYPSUM WALL ASSEMBLY (UL/ULC CLASSIFIED U300 OR U400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. (NOT SHOWN), WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER. STEEL STUDS TO BE MINIMUM 2-1/2" WIDE.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING (ALSO SEE NOTE NO. 3 BELOW) :
   A. MAXIMUM 4" NOMINAL DIAMETER PVC PLASTIC PIPE (CLOSED OR VENTED PIPING SYSTEM).
   B. MAXIMUM 4" NOMINAL DIAMETER CPVC PLASTIC PIPE (CLOSED PIPING SYSTEM).
4. MINIMUM 5/8" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
5. HILTI RETAINING COLLAR WRAPPED AROUND PIPE, OVERLAPPING MINIMUM 2", AND COMPLETELY FILLED WITH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
6. HILTI RETAINING COLLAR CLAMP FASTENED AT MID-HEIGHT OF RETAINING COLLAR.
7. HILTI 1/4" TOGGLER BOLTS TO FASTEN EVERY OTHER TAB OF RETAINING COLLAR.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 5".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1/2".
3. PVC = SCHEDULE 40, CELLULAR OR SOLID CORE; CPVC = SDR 13.5).

HILTI FIRESTOP SYSTEMS | HILTI, Inc. Tulsa, Oklahoma USA (918) 252-6000 | Sheet 1 of 1 | Scale 3/16" = 1" | Date Feb. 27, 2002 | Drawing No. WL 2251a

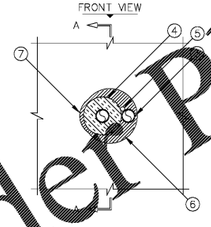
Saving Lives through Innovation and Education

UL/cUL SYSTEM NO. W-L-8047

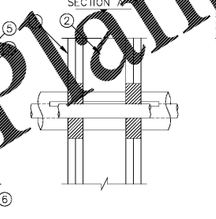
HVAC LINE SET THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 2-HR.
T-RATING = 1/4-HR.

FRONT VIEW



SECTION A-A



WL8047c.021708

1. GYPSUM WALL ASSEMBLY (UL/cUL CLASSIFIED U300 OR U400 SERIES) (2-HR. FIRE-RATING).
2. (NOT SHOWN), STEEL STUDS TO BE MINIMUM 3-1/2" WIDE. WOOD STUDS TO CONSIST OF NOMINAL 2" x 4" LUMBER.
3. MAXIMUM 1" NOMINAL DIAMETER COPPER PIPE OR TUBE (MAXIMUM QUANTITY = 2).
4. NOMINAL 3/4" THICKNESS AB/PVC PIPE INSULATION INSTALLED ON ONE COPPER PIPE.
5. MAXIMUM 4 PAIR NO. 18 AWG THERMOSTAT CABLE WITH PVC JACKET.
6. MINIMUM 1-1/4" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
7. MINIMUM 1/2" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 4-1/2".
2. ANNULAR SPACE BETWEEN PENETRANTS AND PERIPHERY OF OPENING = MINIMUM 0", MAXIMUM 1-1/4".
3. ANNULAR SPACE BETWEEN PENETRANTS = 0".

HILTI FIRESTOP SYSTEMS | HILTI, Inc. Tulsa, Oklahoma USA (918) 252-6000 | Sheet 1 of 1 | Scale 7/32" = 1" | Date July 19, 2005 | Drawing No. WL 8047c

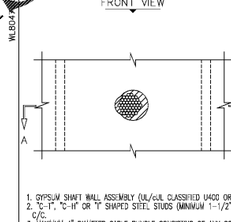
Saving Lives through Innovation and Education

UL/cUL SYSTEM NO. W-L-3278

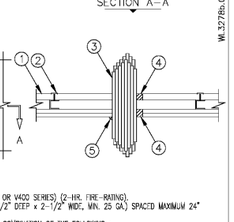
CABLE BUNDLE THROUGH GYPSUM SHAFT WALL ASSEMBLY

F-RATING = 2-HR.
T-RATING = 0-HR. OR 1/4-HR.

FRONT VIEW



SECTION A-A



WL3278b.012908

1. GYPSUM SHAFT WALL ASSEMBLY (UL/cUL CLASSIFIED U400 OR V400 SERIES) (2-HR. FIRE-RATING).
2. "C-T", "C-H" OR "I" SHAPED STEEL STUDS (MINIMUM 1-1/2" DEEP x 2-1/2" WIDE, MIN. 25 GA) SPACED MAXIMUM 24" O/C.
3. MAXIMUM 4" DIAMETER CABLE BUNDLE CONSISTING OF ANY COMBINATION OF THE FOLLOWING :
   A. MAXIMUM 100 PAIR NO. 24 AWG TELEPHONE CABLE WITH PVC JACKET.
   B. MAXIMUM 500 KCMIL POWER CABLE WITH PVC JACKET.
   C. MAXIMUM RG/U COAXIAL CABLE WITH FLUORINATED ETHYLENE OR PVC JACKET.
   D. MAXIMUM 3/C NO. 8 AWG STEEL CABLE CABLE.
   E. MAXIMUM 1-1/4" DIAMETER SINGLE OR MULTIPLE CONDUCTOR TYPE MI CABLE (SEE NOTE NO. 3 BELOW).
4. MINIMUM 1" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT FLUSH WITH EACH SURFACE OF WALL ASSEMBLY.
5. MINIMUM 1/2" BEAD HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT ON FINISHED SIDE OF SHAFT WALL.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 5".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1".
3. A MINIMUM 1/8" SEPARATION SHOULD BE MAINTAINED BETWEEN MI CABLES AND ANY OTHER TYPES OF CABLE.

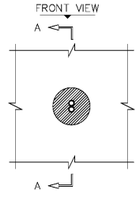
HILTI Firestop Systems | HILTI, Inc. Tulsa, Oklahoma USA (918) 252-6000 | Sheet 1 of 1 | Scale 7/64" = 1" | Date Jan. 29, 2008 | Drawing No. WL 3278b

Saving Lives through Innovation and Education

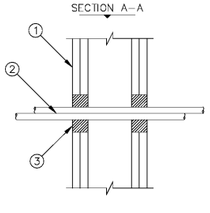
CABLES THROUGH GYPSUM WALL ASSEMBLY

F-RATING = 1 AND 2-HR.
T-RATING = 1/4 AND 3/4-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L RATING AT 400° F = 4 CFM/SQ. FT.

FRONT VIEW



SECTION A-A



WL3071e.091699

1. GYPSUM WALL ASSEMBLY (UL/ULC CLASSIFIED U300 OR U400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. MAXIMUM 3/C (+ GRND) NO. 2/0 AWG ALUMINUM OR COPPER SER CABLE WITH PVC INSULATION (MAX. QTY. = 2).
3. HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT:
   A. MINIMUM 5/8" DEPTH, FOR A 1-HR. FIRE-RATING.
   B. MINIMUM 1-1/4" DEPTH, FOR A 2-HR. FIRE-RATING.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 3".
2. ANNULAR SPACE = MINIMUM 1/2", MAXIMUM 1-1/2".

HILTI FIRESTOP SYSTEMS | HILTI, Inc. Tulsa, Oklahoma USA (918) 252-6000 | Sheet 1 of 1 | Scale 3/16" = 1" | Date SEPT. 16, 1999 | Drawing No. WL 3071e

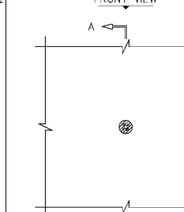
Saving Lives through Innovation and Education

UL/cUL SYSTEM NO. W-L-3058

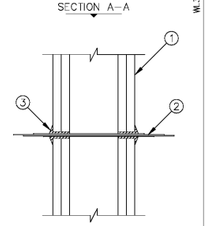
CABLE THROUGH GYPSUM WALL ASSEMBLY

F RATING = 2-HR.
T RATING = 1-1/2-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L RATING AT 400° F = 4 CFM/SQ. FT.

FRONT VIEW



SECTION A-A



WL3058c.091699

1. GYPSUM WALL ASSEMBLY (UL/ULC CLASSIFIED U300 OR U400 SERIES) (2-HR. FIRE-RATING).
2. MAXIMUM 25 PAIR NO. 24 AWG TELEPHONE CABLE.
3. HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT FORCED INTO ANNULAR SPACE TO MAXIMUM EXTENT POSSIBLE, WITH ADDITIONAL 1/4" CROWN AROUND CABLE AS SHOWN.

NOTE : MAXIMUM DIAMETER OF OPENING = 1/2".

HILTI FIRESTOP SYSTEMS | HILTI, Inc. Tulsa, Oklahoma USA (918) 252-6000 | Sheet 1 of 1 | Scale 3/16" = 1" | Date SEPT. 16, 1999 | Drawing No. WL 3058c

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Project:	1928.00
CADD File:	CODE
Drawn By:	SGS
Checked By:	GA

Permit Release:
May 15, 2020
Construction Release Set:
May 15, 2020

Revisions

No.	Date	Description

ASI / RFI Revisions

No.	Date	Description

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33 Broad MF, LLC
in Chattanooga, Tennessee

Drawing Title:
Rated Assemblies
Penetrations

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