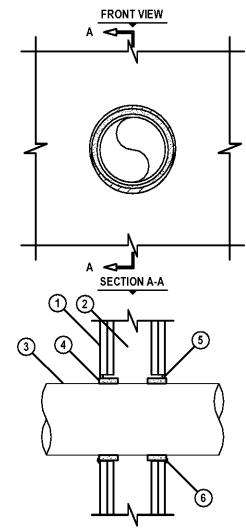




VP ENGINEERING
 CONSULTING ENGINEERS, P.A.
 2015 Coliseum Boulevard Drive, Suite 180
 Charlotte, NC 28202
 704.372.1785
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**UL SYSTEM NO. W-1-2406
 PLASTIC PIPE THROUGH GYPSUM WALL ASSEMBLY**

F-RATING = 1-HR. OR 2-HR.
 T-RATING = 0-HR., 1/2-HR. OR 3/4-HR.
 L-RATING AT AMBIENT = 1.2 CFM/SQ. FT.
 L-RATING AT 400°F = LESS THAN 1 CFM/SQ. FT.



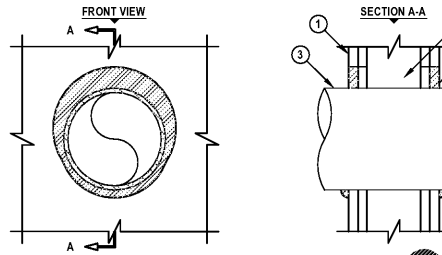
1. GYPSUM WALL ASSEMBLY (UL CLASSIFIED U300 OR U400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. NOT SHOWN: WOOD STUDS TO CONSIST OF NOMINAL 2" X 4" LUMBER. STEEL STUDS TO BE MINIMUM 3/4" WIDE.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:
 A. MAXIMUM 4" NOMINAL DIAMETER PVC PLASTIC PIPE (CELLULAR OR SOLID CORE).
 B. MAXIMUM 4" NOMINAL DIAMETER ABS PLASTIC PIPE (CELLULAR OR SOLID CORE).
 C. MAXIMUM 4" NOMINAL DIAMETER CPVC PLASTIC PIPE (CLOSED PIPING SYSTEM).
4. HILTI CP 6486 FIRESTOP WRAP STRIP WRAPPED CONTINUOUSLY AROUND CIRCUMFERENCE OF PIPE AND SECURED IN PLACE WITH INTEGRATED FASTENING TAPE, SUCH THAT THE WRAP STRIP PROTRUDES 1/8" FROM WALL SURFACE.
5. MINIMUM 1/4" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT (OPTIONAL IN 1-HR. WALLS ON PIPES 4" OR SMALLER, AND IN 2-HR. WALLS ON PIPES 3" AND SMALLER).
6. MINIMUM 1/4" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT AT WRAP STRIP/GYPSUM WALL INTERFACE (OPTIONAL IN 1-HR. WALLS ON PIPES 4" OR SMALLER, AND IN 2-HR. WALLS ON PIPES 3" AND SMALLER).

NOMINAL PIPE DIAMETER	TYPE OF PIPE	PRODUCT DESCRIPTION	MAXIMUM DIAMETER OF OPENING	ANNULAR SPACE	
				MINIMUM	MAXIMUM
1-1/2"	ALL	CP 6485 - 1.5"	2-3/8"	3/16"	5/16"
2"	ALL	CP 6485 - 2"	3"	3/16"	5/16"
3"	ALL	CP 6485 - 3"	4"	3/16"	5/16"
4"	ALL	CP 6485 - 4"	5-3/8"	3/8"	1/2"
6"	PVC AND CPVC	CP 6485 - 6"	8"	9/16"	13/16"

NOTES: 1. CLOSED OR VENTED PIPING SYSTEM (PVC, ABS & SCHEDULE 40, CPVC & SDR 15.8)
 2. L-RATINGS ONLY APPLY WHEN HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT IS USED.

**UL/GUL SYSTEM NO. W-L-1054
 METAL 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°F = LESS THAN 1 CFM / SQ FT

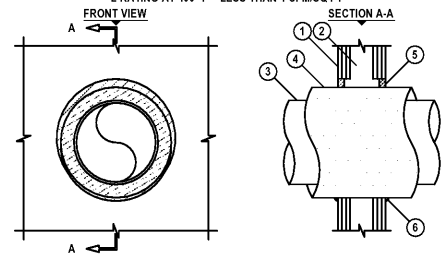


1. GYPSUM WALL ASSEMBLY (UL/GUL CLASSIFIED U300 OR U400 SERIES) (1-HR. OR 2-HR. FIRE-RATING) (2-HR. SHOWN).
2. NOT SHOWN: WOOD STUDS TO CONSIST OF NOMINAL 2" X 4" LUMBER. STEEL STUDS TO BE MINIMUM 3/4" WIDE.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:
 A. MAXIMUM 30" DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
 B. MAXIMUM 30" DIAMETER CAST IRON PIPE.
 C. MAXIMUM 4" NOMINAL DIAMETER COPPER PIPE.
 D. MAXIMUM 4" NOMINAL DIAMETER STEEL PIPE.
 E. MAXIMUM 4" NOMINAL DIAMETER DUCT.
4. MINIMUM 5/8" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT.
5. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 18-5/8"
 A. 3/4" FOR STEEL STUD WALLS.
 B. 1/2" FOR WOOD STUD WALLS.
 2. ANNULAR SPACE = MINIMUM OF MAXIMUM 2-1/4"
 3. PIPE MAY BE INSTALLED WITH CONTINUOUS POINT OF CONTACT.
 4. PIPE MAY BE INSTALLED AT AN ANGLE NOT GREATER THAN 45 FROM PERPENDICULAR.

**UL/GUL SYSTEM NO. W-L-5029
 INSULATED METAL PIPE THROUGH GYPSUM WALL ASSEMBLY**

F-RATING = 1-HR., 2-HR., OR 3-HR.
 T-RATING = 0-HR., 1/2-HR., 1-HR., OR 1-1/4-HR. (SEE UL FIRE RESISTANCE DIRECTORY)
 L-RATING AT AMBIENT = 4 CFM/SQ FT
 L-RATING AT 400°F = LESS THAN 1 CFM/SQ FT



1. GYPSUM WALL ASSEMBLY (UL/GUL CLASSIFIED U300, U400, V400, OR W400 SERIES) (1-HR., 2-HR., OR 3-HR. FIRE-RATING) (2-HR. SHOWN).
2. NOT SHOWN: WOOD STUDS TO CONSIST OF NOMINAL 2" X 4" LUMBER. STEEL STUDS TO BE MINIMUM 3/4" FOR 1-HR. OR 2-HR. FIRE-RATING OR 3/4" FOR 3-HR. FIRE-RATING WIDE.
3. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:
 A. MAXIMUM 12" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
 B. MAXIMUM 12" NOMINAL DIAMETER CAST OR DUCTILE IRON PIPE.
 C. MAXIMUM 4" NOMINAL DIAMETER COPPER PIPE OR TUBING (FOR 3-HR. WALLS, COPPER PIPE OR TUBING SHALL BE MAXIMUM 4" NOMINAL DIAMETER).
4. NOMINAL 1-1/2" OR 2" THICK GLASS-FIBER PIPE INSULATION OR MAXIMUM 2" THICK CALCIUM SILICATE PIPE INSULATION (SEE NOTE NO. 4 BELOW).
5. HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT:
 A. MINIMUM 5/8" DEPTH REQUIRED FOR 1-HR. OR 2-HR. FIRE-RATING.
 B. MINIMUM 1" DEPTH REQUIRED FOR 3-HR. FIRE-RATING.
6. MINIMUM 1/2" DEPTH HILTI FS-ONE INTUMESCENT FIRESTOP SEALANT APPLIED AT POINT OF CONTACT.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 18-5/8"
 2. ANNULAR SPACE FOR 1-HR. OR 2-HR. FIRE-RATING = MINIMUM OF MAXIMUM 1-7/8".
 3. ANNULAR SPACE FOR 3-HR. FIRE-RATING = MINIMUM OF MAXIMUM 1-1/4".
 4. WHEN CALCIUM SILICATE PIPE INSULATION IS USED, SECURE INSULATION TO PIPE WITH STAINLESS STEEL BANDS OR MINIMUM 16 AWG STAINLESS STEEL WIRE AT MAXIMUM 12" O.C.

PIPE PENETRATION DETAILS
 N.T.S.
 NOTE: DETAIL BASED ON HILTI SYSTEMS, OTHER UL APPROVED SYSTEMS ARE ACCEPTABLE.

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Number	Date	Description

Project Title:
SOUTH CHARLOTTE HYUNDAI

Project No: **4802.00**
 Drawing Title:
PIPE PENETRATION DETAILS

SET ISSUE DATE
 MAR 4, 2020

Sheet
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