

UL/cUL SYSTEM NO. F-A-1217

METALLIC PIPE THROUGH CONCRETE FLOOR ASSEMBLY

F-RATING = 3-HR.

T-RATING = 3-HR.

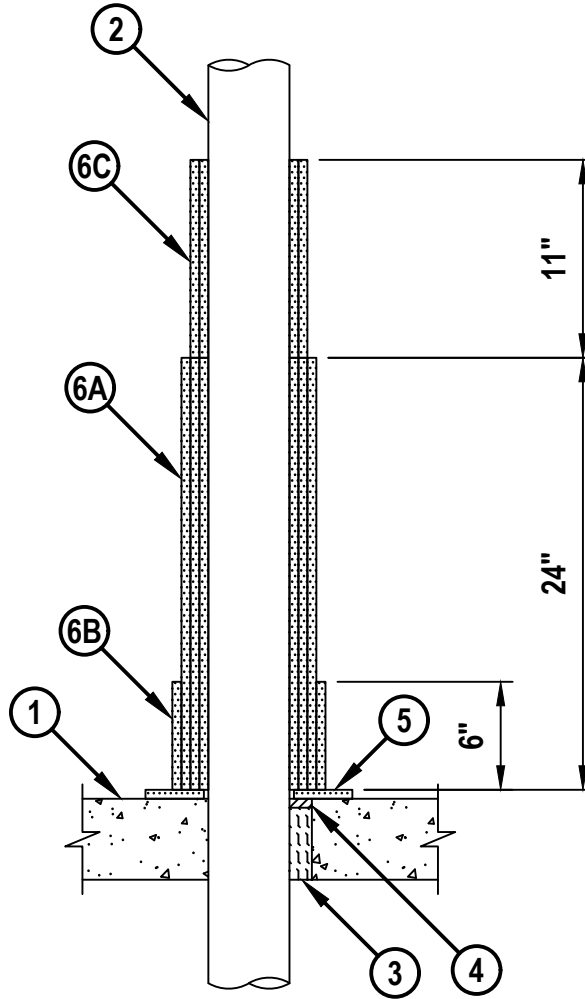
L-RATING AT AMBIENT = LESS THAN 1 CFM / SQ FT

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

W-RATING = SEE NOTE NO. 4 BELOW

FA1217a.011023

CROSS-SECTIONAL VIEW



CONFIGURATION A (FOR PENETRANTS (ITEM 2) NOMINAL 4" DIAMETER AND SMALLER)



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Scale	3/32" = 1"
Date	Jan. 10, 2023

Drawing No.

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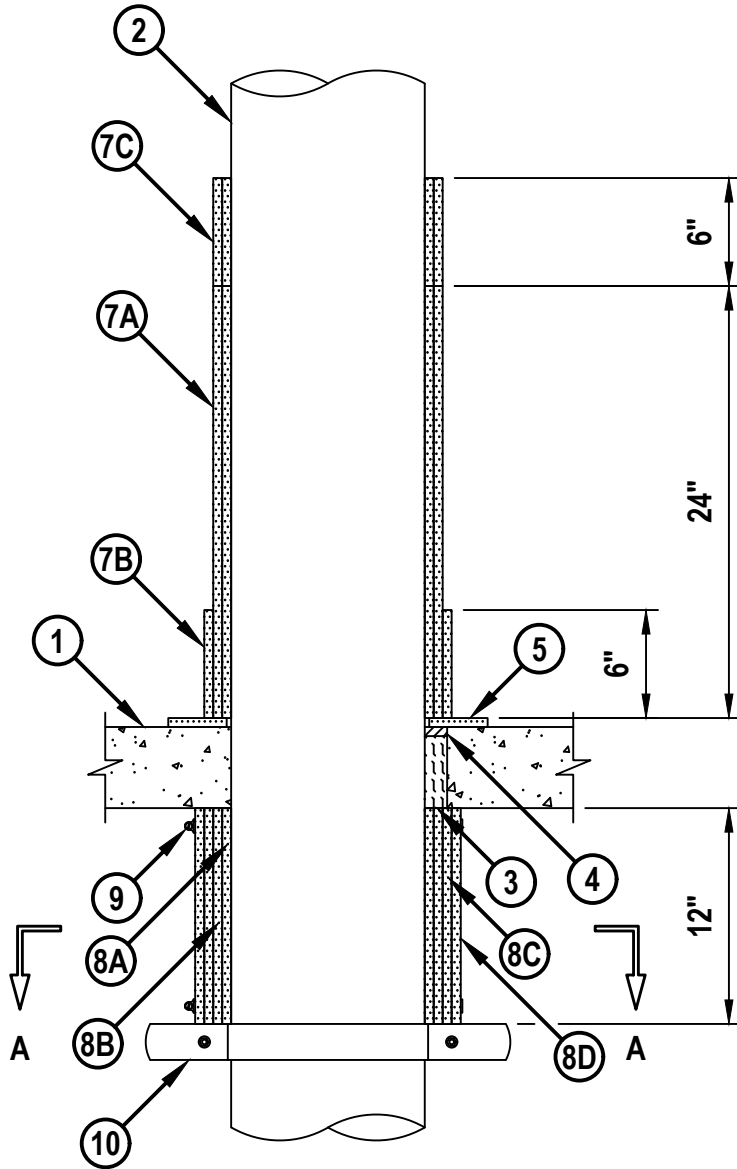
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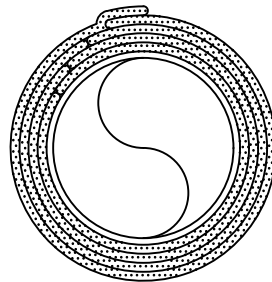
W-RATING = SEE NOTE NO. 4 BELOW

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CROSS-SECTIONAL VIEW



SECTION A-A SEAM DETAIL



CONFIGURATION B (FOR PENETRANTS (ITEM 2) GREATER THAN NOMINAL 4" DIAMETER)



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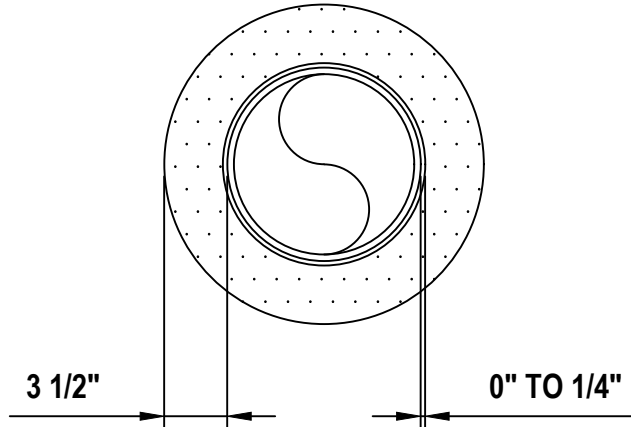
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SURFACE INSULATION
"BORDER" DETAIL



1. CONCRETE FLOOR ASSEMBLY (3-HR. FIRE-RATING) :
 - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2" THICK).
 - B. ANY UL/cUL CLASSIFIED PRECAST (HOLLOW-CORE) CONCRETE FLOOR (MINIMUM 6" THICK).
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:
 - A. MAXIMUM 10" NOMINAL DIAMETER STEEL PIPE (SCH 10 OR HEAVIER).
 - B. MAXIMUM 10" NOMINAL DIAMETER CAST OR DUCTILE IRON PIPE.
 - C. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT.
 - D. MAXIMUM 4" NOMINAL DIAMETER EMT.
3. MINIMUM 4" THICKNESS MINERAL WOOL (NOMINAL 4 PCF DENSITY) TIGHTLY PACKED AND RECESSED TO ACCOMMODATE SEALANT (SEE NOTE NO. 5 BELOW).
4. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT, HILTI CP 601S ELASTOMERIC FIRESTOP SEALANT, HILTI CP 606 FLEXIBLE FIRESTOP SEALANT, HILTI CFS-S SIL GG FIRESTOP SILICONE SEALANT, OR HILTI CFS-S SIL SL FIRESTOP SILICONE SEALANT FLUSH WITH TOP OF FLOOR.
5. ENDO-SHIELD BORDER TO BE SIZED A MINIMUM OF 7" LARGER THAN THE DIAMETER OF STEEL PIPE (ITEM 2) AND CUT IN HALF. ENDO-SHIELD THEN TO BE CUT TO CONTOUR AROUND PIPE SUCH THAT THE ANNULAR SPACE BETWEEN ENDO-SHIELD BORDER AND PIPE IS MINIMUM 0", MAXIMUM 1/4". BORDER TO BE PLACED FLAT ON CONCRETE FLOOR COVERING ANNULAR SPACE. SEAMS WITHIN ENDO-SHIELD BORDER TO BE TIGHTLY BUTTED AND SEALED WITH NOMINAL 3" WIDE ALUMINUM TAPE.



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CONFIGURATION A (FOR PENETRANTS (ITEM 2) NOMINAL 4" DIAMETER AND SMALLER)

6. HILTI CFP-ES ENDO-SHIELD INSTALLED IN ONE THREE-LAYER STACK AND ONE TWO-LAYER STACK AS FOLLOWS :

- A. A 24" HIGH STACK OF ENDO-SHIELD IS TO BE TIGHTLY BUTTED TO THE BORDER AND CONTINUOUSLY WRAPPED AROUND STEEL PIPE IN THREE LAYERS WITH THE END OF THE FINAL LAYER OVERLAPPING 2" BEYOND THE START OF THE FIRST LAYER. AT THE LONGITUDINAL SEAM ON THE FINAL LAYER APPLY NOMINAL 3" WIDE ALUMINUM TAPE, CENTERED AT SEAM, FOR FULL HEIGHT OF SEAM.
- B. AN ADDITIONAL 6" HIGH LAYER OF ENDO-SHIELD IS TO CONTINUOUSLY WRAPPED AROUND THE OUTER LAYER OF ITEM 6A WITH THE END OF THE FINAL LAYER OVERLAPPING 2" BEYOND THE START OF THE FIRST LAYER. AT THE LONGITUDINAL SEAM ON THE FINAL LAYER APPLY NOMINAL 3" WIDE ALUMINUM TAPE, CENTERED AT SEAM, FOR FULL HEIGHT OF SEAM.
- C. A 11" HIGH STACK OF ENDO-SHIELD IS TO BE TIGHTLY BUTTED TO THE TOP OF ITEM 6A AND BE CONTINUOUSLY WRAPPED AROUND STEEL PIPE IN TWO LAYERS WITH THE END OF THE FINAL LAYER OVERLAPPING 2" BEYOND THE START OF THE FIRST LAYER. AT THE LONGITUDINAL SEAM ON THE FINAL LAYER APPLY NOMINAL 3" WIDE ALUMINUM TAPE, CENTERED AT SEAM, FOR FULL HEIGHT OF SEAM.

CONFIGURATION B (FOR PENETRANTS (ITEM 2) GREATER THAN NOMINAL 4" DIAMETER)

7. HILTI CFP-ES ENDO-SHIELD INSTALLED IN TWO TWO-LAYER STACKS AS FOLLOWS :

- A. A 24" HIGH STACK OF ENDO-SHIELD IS TO BE TIGHTLY BUTTED TO THE BORDER AND CONTINUOUSLY WRAPPED AROUND STEEL PIPE IN TWO LAYERS WITH THE END OF THE FINAL LAYER OVERLAPPING 2" BEYOND THE START OF THE FIRST LAYER. AT THE LONGITUDINAL SEAM ON THE FINAL LAYER APPLY NOMINAL 3" WIDE ALUMINUM TAPE, CENTERED AT SEAM, FOR FULL HEIGHT OF SEAM.
- B. AN ADDITIONAL 6" HIGH LAYER OF ENDO-SHIELD IS TO CONTINUOUSLY WRAPPED AROUND THE OUTER LAYER OF ITEM 7A WITH THE END OF THE FINAL LAYER OVERLAPPING 2" BEYOND THE START OF THE FIRST LAYER. AT THE LONGITUDINAL SEAM ON THE FINAL LAYER APPLY NOMINAL 3" WIDE ALUMINUM TAPE, CENTERED AT SEAM, FOR FULL HEIGHT OF SEAM.
- C. A 6" HIGH STACK OF ENDO-SHIELD IS TO BE TIGHTLY BUTTED TO THE TOP OF ITEM 6A AND BE CONTINUOUSLY WRAPPED AROUND STEEL PIPE IN TWO LAYERS WITH THE END OF THE FINAL LAYER OVERLAPPING 2" BEYOND THE START OF THE FIRST LAYER. AT THE LONGITUDINAL SEAM ON THE FINAL LAYER APPLY NOMINAL 3" WIDE ALUMINUM TAPE, CENTERED AT SEAM, FOR FULL HEIGHT OF SEAM.



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8. HILTI CFP-ES ENDO-SHIELD INSTALLED IN LAYERS AS FOLLOWS :

- A. FIRST LAYER OF ENDO-SHIELD SHALL EXTEND MINIMUM 12" BELOW THE FLOOR AND BE TIGHTLY WRAPPED AROUND THE PENETRANT WITH ENDS TIGHTLY BUTTED.
- B. SECOND LAYER OF ENDO-SHIELD SHALL EXTEND MINIMUM 12" BELOW THE FLOOR AND BE TIGHTLY WRAPPED AROUND THE FIRST LAYER OF ENDO-SHIELD WITH ENDS TIGHTLY BUTTED AND VERTICAL SEAM OFFSET 2" FROM SEAM IN FIRST LAYER OF ENDO-SHIELD.
- C. THIRD LAYER OF ENDO-SHIELD SHALL EXTEND MINIMUM 12" BELOW THE FLOOR AND BE TIGHTLY WRAPPED AROUND THE SECOND LAYER OF ENDO-SHIELD WITH ENDS TIGHTLY BUTTED AND VERTICAL SEAM OFFSET 2" FROM SEAM IN FIRST LAYER OF ENDO-SHIELD.
- D. FOURTH LAYER OF ENDO-SHIELD SHALL EXTEND MINIMUM 12" BELOW THE FLOOR AND BE TIGHTLY WRAPPED AROUND THE THIRD LAYER OF ENDO-SHIELD OFFSET 2" FROM SEAM WITHIN THIRD LAYER OF ENDO-SHIELD AND TO EXTEND NOMINAL 2" BEYOND START OF SEAM WITHIN THE FOURTH LAYER.
- E. NOMINAL 3" WIDE ALUMINUM TAPE TO BE APPLIED AND CENTERED OVER LONGITUDINAL SEAMS WITHIN EACH LAYER OF ENDO-SHIELD.

9. STAINLESS STEEL CLAMP: INSTALL 1/2" WIDE STAINLESS STEEL HOSE CLAMPS TO SECURE INSULATION (ITEM 8) AROUND PENETRATING ITEM (ITEM 2). INSTALL HOSE CLAMPS AROUND INSULATION SPACED 2" FROM THE ENDS OF THE INSULATION.

10. RISER CLAMP: INSTALL 10" GALVANIZED STEEL RISER CLAMP AROUND PENETRATING ITEM (ITEM 2) FLUSH WITH THE END OF THE INSULATION (ITEM 8).

- NOTES :**
- 1. MAXIMUM DIAMETER OF OPENING = 12".
 - 2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-1/2".
 - 3. [NOT SHOWN] WHEN ANNULAR SPACE IS 0", APPLY NOMINAL 1/2" BEAD HILTI FS-ONE MAX, HILTI CP 601S, HILTI CP 606 OR HILTI CFS-S SIL GG AT POINT OF CONTACT BEFORE APPLICATION OF ENDO-SHIELD BORDER (ITEM 5). WHEN HILTI CFS-S SIL SL IS USED, BEAD OF SEALANT IS NOT REQUIRED.
 - 4. W-RATING ONLY APPLIES WHEN HILTI FS-ONE MAX, HILTI CP 601S, HILTI CFS-S SIL GG, OR HILTI CFS-S SIL SL IS USED.
 - 5. MINERAL WOOL REQUIRED TO BE INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR WHEN INSTALLED IN PRECAST (HOLLOW-CORE) CONCRETE.



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