UL/cUL SYSTEM NO. F-A-1168
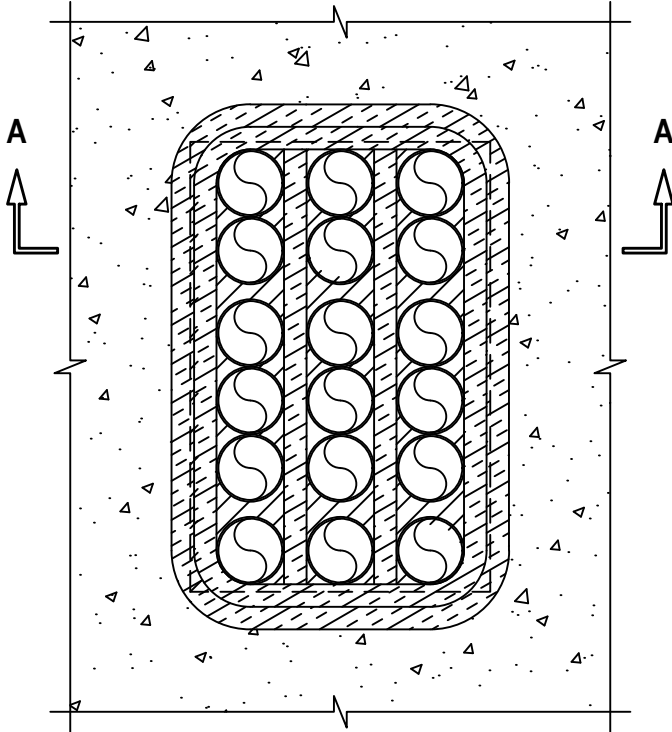## METAL PIPE THROUGH CONCRETE FLOOR ASSEMBLY
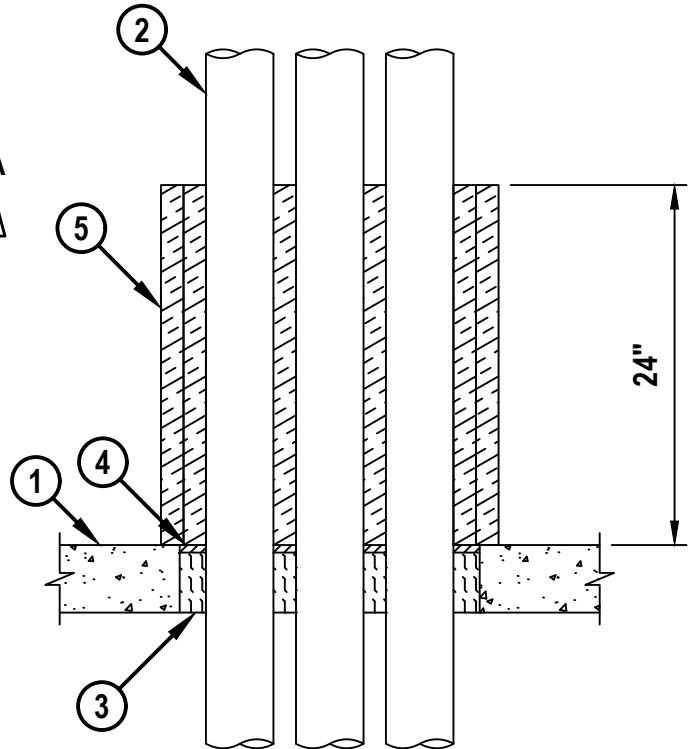### F-RATING = 2-HR.
T-RATING = 2-HR.

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TOP VIEW

SECTION A-A

A

A

A

A

2

5

1

4

3

24"

METAL PIPE THROUGH CONCRETE FLOOR ASSEMBLY

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

FA1168a.100617

1. CONCRETE FLOOR ASSEMBLY (2-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. ONE OR MORE PENETRATING ITEM(S) TO BE OF THE FOLLOWING :
   A. MAXIMUM 4" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 4" NOMINAL DIAMETER CAST OR DUCTILE IRON PIPE.
   C. MAXIMUM 4" NOMINAL DIAMETER STEEL CONDUIT OR EMT.
   D. MAXIMUM 1" NOMINAL DIAMETER FLEXIBLE STEEL CONDUIT.
3. MINIMUM 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED AND RECESSED FROM TOP SURFACE OF FLOOR TO ACCOMMODATE SEALANT. IN HOLLOW-CORE FLOORS, ADDITIONAL MINIMUM 2" THICKNESS MINERAL WOOL IS TO BE TIGHTLY PACKED, FLUSH WITH BOTTOM OF FLOOR.
4. MINIMUM 1/2" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT.
5. MINIMUM TWO LAYERS OF MINIMUM 1-1/2" THICK DUCT WRAP TIGHTLY WRAPPED AROUND PENETRANTS TO EXTEND 24" ABOVE FLOOR. THE SPACES BETWEEN PENETRANTS AT THE TOP OF THE DUCT WRAP ARE TO BE TIGHTLY PACKED WITH NOMINAL 2" DEPTH OF DUCT WRAP MATERIAL, FLUSH WITH THE TOP OF THE DUCT WRAP LAYERS. ALL LONGITUDINAL SEAMS OF BOTH LAYERS OF DUCT WRAP ARE SEALED WITH FOIL TAPE.
- *THERMAL CERAMICS, INC.* - FIREMASTER FASTWRAP+, FIREMASTER FASTWRAP XL, OR PYROSCAT DUCT WRAP XL
- *UNIFRAX* - FYREWRAP DUCT INSULATION OR FYREWRAP DUCT 1.5 INSULATION.

NOTES : 1. MAXIMUM AREA OF OPENING IS 600 SQ. IN. WITH A MAXIMUM DIMENSION OF 30" FOR LIGHTWEIGHT OR NORMAL CONCRETE FLOORS. MAXIMUM AREA OF OPENING IS 49 SQ. IN. WITH A MAXIMUM DIMENSION OF 7" FOR HOLLOW-CORE CONCRETE FLOORS.
    2. ANNULAR SPACE BETWEEN PENETRANTS AND PERIPHERY OF OPENING = MINIMUM 1/2", MAXIMUM 3-1/2".
    3. ANNULAR SPACE BETWEEN ROWS OF PENETRANTS = MINIMUM 1-1/2", MAXIMUM 3-1/2".
    4. ANNULAR SPACE BETWEEN PENETRANTS WITHIN ROW = MINIMUM 0", MAXIMUM 1-1/2".

HILTI

Hilti Firestop Systems

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

Sheet	**2 of 2**	*Drawing No.*
Scale	**-**	**FA**
Date	**Oct. 06, 2017**	**1168a**

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