

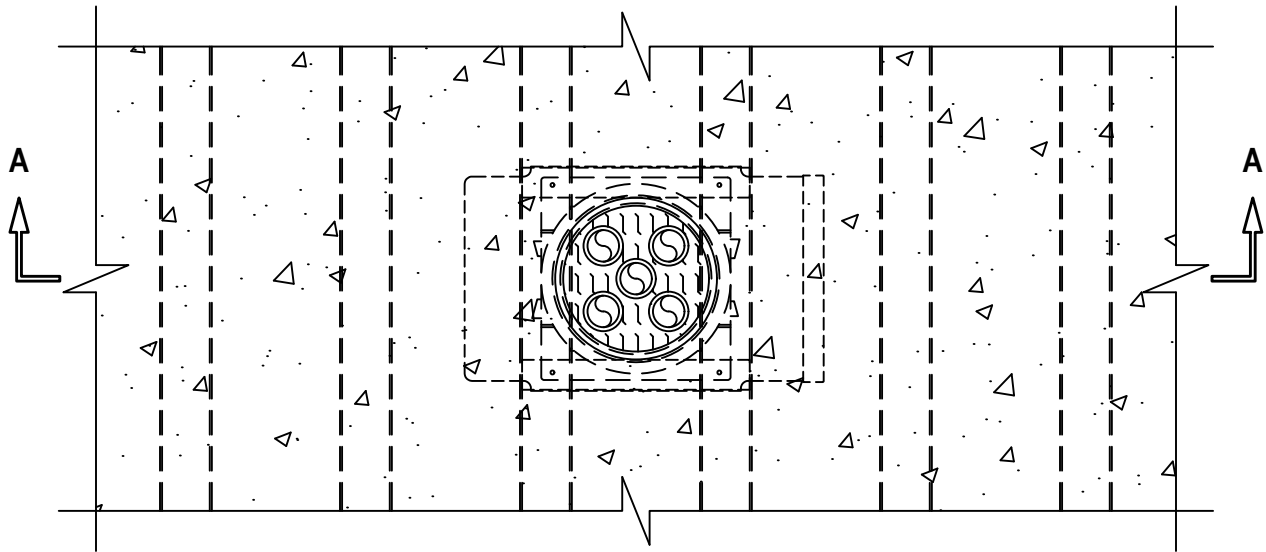
UL/cUL SYSTEM NO. F-A-1193

**MULTIPLE METAL PIPES THROUGH CONCRETE FLOOR OVER METAL DECKING ASSEMBLY**

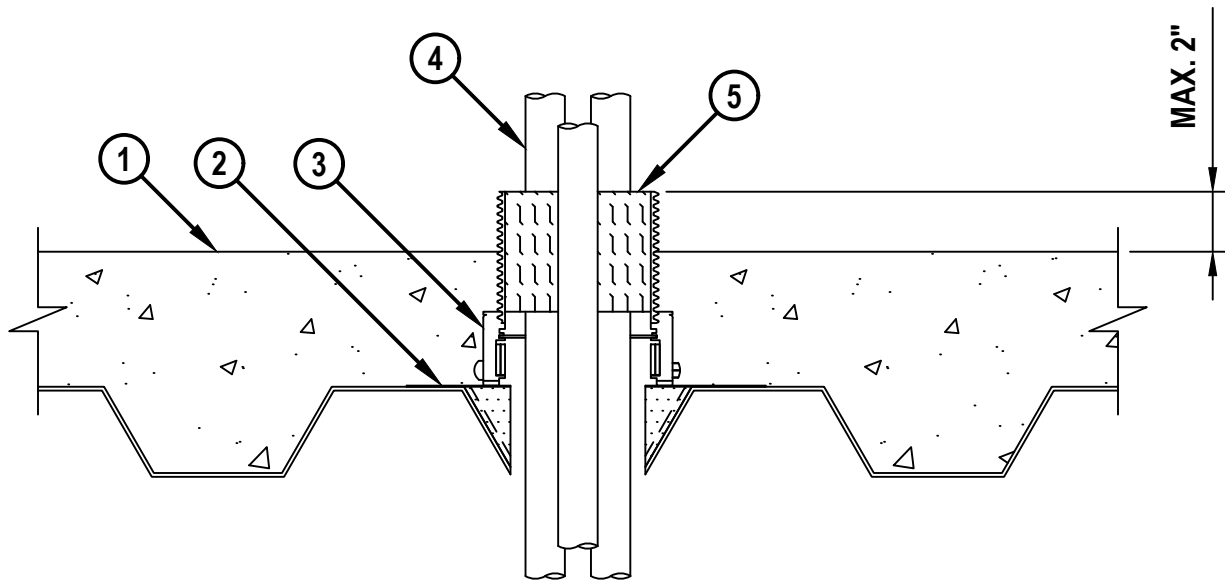
F-RATING = 2-HR. OR 3-HR.  
T-RATING = 1/2-HR., 1-HR., OR 2-HR.

FA1193c.111319

TOP VIEW



SECTION A-A



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

Sheet	1 of 2
Scale	5/32" = 1"
Date	Nov. 13, 2019

Drawing No.  
**FA  
1193c**

*Saving Lives through Innovation and Education*

**MULTIPLE METAL PIPES THROUGH CONCRETE FLOOR OVER METAL DECKING ASSEMBLY**

F-RATING = 2-HR. OR 3-HR.  
T-RATING = 1/2-HR., 1-HR., OR 2-HR.

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1. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR (MINIMUM 4-1/2" THICK) OVER METAL DECKING ASSEMBLY (UL/cUL CLASSIFIED D900 SERIES) WITH 2" OR 3" FLUTED DECKS (2-HR. OR 3-HR. FIRE-RATING).
2. HILTI CFS-CID MD PLT [W2" OR W3"] METAL DECK PLATFORM SECURED TO DECK WITH ONE FASTENER IN EACH CORNER.
3. HILTI CFS-CID MD [M, P, OR PX] [2", 3", OR 4"]/4" FIRESTOP CAST-IN DEVICE FOR METAL DECK SECURED TO HILTI CFS-CID MD PLT METAL DECK PLATFORM WITH SCREWS.
4. PENETRATING ITEM TO BE ONE OF THE FOLLOWING (MAX. QTY. = 5). A MAXIMUM OF PENETRANT SHALL EXCEED 1-1/2" :
  - A. MAXIMUM 3" NOMINAL DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
  - B. MAXIMUM 3" NOMINAL DIAMETER CAST OR DUCTILE IRON PIPE.
  - C. MAXIMUM 3" NOMINAL DIAMETER COPPER PIPE OR TUBING.
  - D. MAXIMUM 3" NOMINAL DIAMETER STEEL CONDUIT OR EMT.
5. MINIMUM 2" OR 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED INTO DEVICE COMPLETELY FILLING ANNULAR SPACE AROUND METAL PENETRANTS (SEE TABLE BELOW).

F-RATING, HR.	MAX PIPE DIAMETER		T-RATING, HR.	MINERAL WOOL THICKNESS	ANNULAR SPACE	
	STEEL, CAST IRON, STEEL CONDUIT, EMT	COPPER			BETWEEN PIPES	TO EDGE OF DEVICE
2	3"	3"	1/2	4"	MIN 1/8"	MIN 1/2", MAX 2"
3	1"	1"	2	4"	MIN 1", MAX 2"	MIN 3/4", MAX 2"
3	1-1/2"	1"	1	2"	MIN 1/4", MAX 1-1/2"	MIN 1/4", MAX 1-1/2"



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Sheet	2 of 2
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