

UL/cUL SYSTEM NO. W-J-7109

# SHEET METAL DUCT THROUGH CONCRETE WALL OR BLOCK WALL ASSEMBLY

F-RATING = 2-HR.

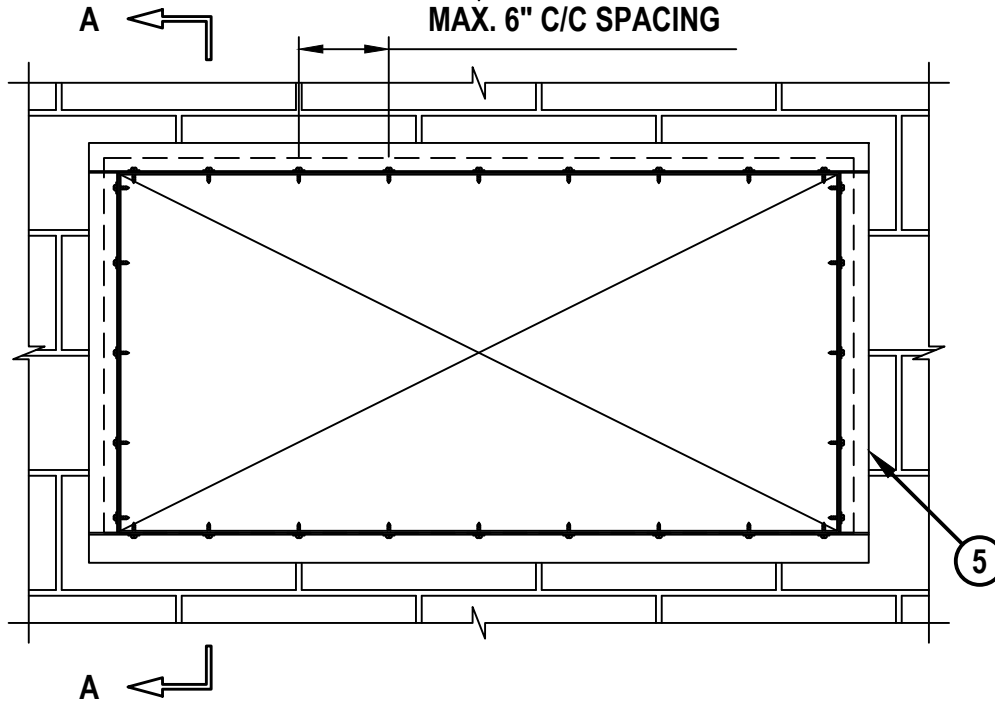
T-RATING = 0-HR.

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

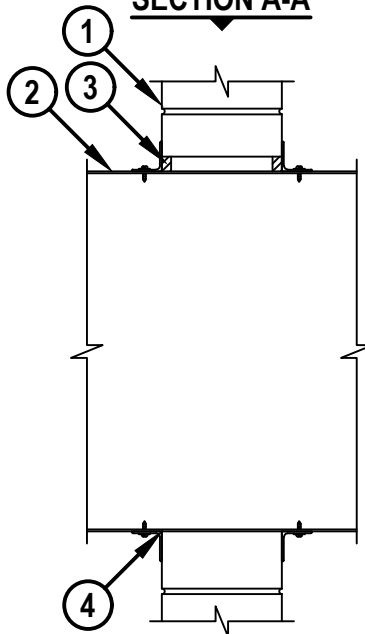
L-RATING AT 400°F = LESS THAN 1 CFM / SQ FT

WJ7109f.091922

## FRONT VIEW



## SECTION A-A



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

|       |               |
|-------|---------------|
| Sheet | 1 of 2        |
| Scale | 5/64" = 1"    |
| Date  | Sep. 19, 2022 |

Drawing No.

**WJ**  
**7109f**

*Saving Lives through Innovation and Education*

**SHEET METAL DUCT THROUGH CONCRETE WALL OR BLOCK WALL ASSEMBLY**

F-RATING = 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

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1. CONCRETE WALL ASSEMBLY (2-HR. FIRE-RATING) :
  - A. LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE WALL (MINIMUM 6" THICK).
  - B. ANY UL/cUL CLASSIFIED CONCRETE BLOCK WALL.
2. PENETRATING ITEM TO CONSIST OF ONE OF THE FOLLOWING :
  - A. MAXIMUM 100" x 100" RECTANGULAR SHEET METAL DUCT (CONSTRUCTED AND REINFORCED IN ACCORDANCE WITH SMACNA CONSTRUCTION STANDARDS).
  - B. MAXIMUM 40" x 40" RECTANGULAR SHEET METAL DUCT (CONSTRUCTED AND REINFORCED IN ACCORDANCE WITH SMACNA CONSTRUCTION STANDARDS) WITH BW11 COATING MATERIAL (FLAMEBAR BW11 FIRE RATED DUCTWORK BY FIRESPRAY INTERNATIONAL, LTD.).
3. MINIMUM 5/8" DEPTH HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT OR HILTI CP 606 FLEXIBLE FIRESTOP SEALANT.
4. [NOT SHOWN] MINIMUM 1/4" BEAD HILTI FS-ONE MAX INTUMESCENT FIRESTOP SEALANT OR HILTI CP 606 FLEXIBLE FIRESTOP SEALANT APPLIED AT POINT OF CONTACT, PRIOR TO ATTACHMENT OF STEEL ANGLE.
5. STEEL RETAINING ANGLE (SEE NOTE NO. 3 AND TABLE BELOW).

| MAXIMUM DUCT DIMENSION | DUCT THICKNESS         | ANNULAR SPACE MIN. - MAX. | MINERAL WOOL REQUIRED   | RETAINING ANGLE REQUIRED |
|------------------------|------------------------|---------------------------|---|--------------------------|
| 24 IN.                 | 24 GA.<br>(OR HEAVIER) | 1/2" - 1"                 | MINIMUM 5" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED | NO                       |

**NOTES :**

1. MAXIMUM SIZE OF OPENING = 104" x 102".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2".
3. AFTER SEALING SPACE BETWEEN DUCT AND CONCRETE WALL ASSEMBLY WITH HILTI FIRESTOP SEALANT, FASTEN STEEL ANGLE (MIN. 18 GA. FOR DUCTS 48" x 24" OR SMALLER, OTHERWISE MIN. 16 GA.) TO DUCT WITH MINIMUM NO. 10 SHEET METAL SCREWS (SPACED MAXIMUM 1" FROM EACH END OF STEEL DUCT AND SPACED MAXIMUM 6" C/C). STEEL ANGLE TO OVERLAP DUCT BY MINIMUM 2" AND CONCRETE WALL ASSEMBLY BY MINIMUM 1". ANGLE DOES NOT HAVE TO BE FASTENED TO CONCRETE WALL ASSEMBLY.
4. [OPTIONAL] POLYETHYLENE BACKER ROD, MINERAL WOOL, OR GLASS-FIBER BATT INSULATION MAY BE USED AS BACKING MATERIAL FOR FIRESTOP SEALANT (EXCEPT WHERE REQUIRED IN TABLE ABOVE).

|   |  |                           |                                    |
|---|--|---------------------------|------------------------------------|
| <br><b>Hilti Firestop Systems</b> | HILTI, Inc.<br>Plano, Texas USA (800) 879-8000 | <i>Sheet</i> 2 of 2       | Drawing No.<br><b>WJ<br/>7109f</b> |
|   |  | <i>Scale</i> -            |                                    |
|   |  | <i>Date</i> Sep. 19, 2022 |                                    |
| <b><i>Saving Lives through Innovation and Education</i></b>   |  |                           |                                    |