Schebler Company
Design No. SC/FMF 120-01
Fire Resistant Grease Duct
Model FG3 Grease Duct
UL 2221
Internal Fire Test, Condition A – Pass
Clearance to Combustibles: Zero
Fire-Engulfment Test – 2 Hours
UL 1978 – Pass
ASTM E814
F-Rating – 2 Hours
T-Rating – 2 Hours

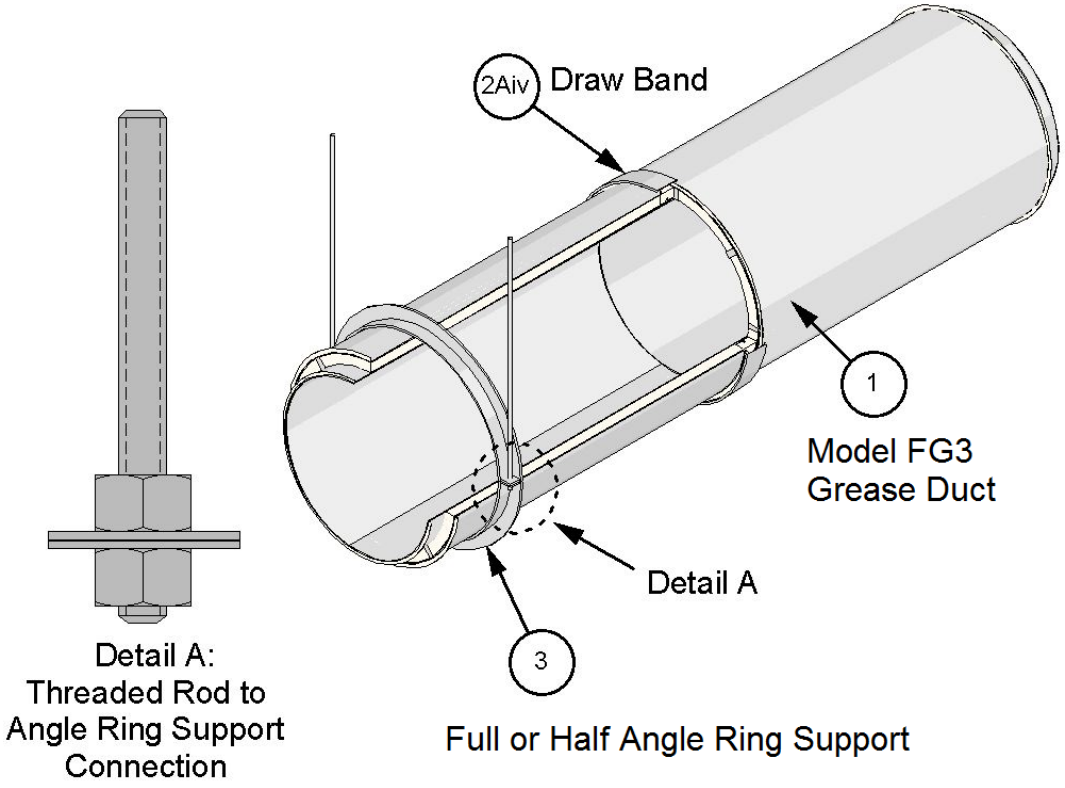


Figure 1. Model FG3

1. **CERTIFIED MANUFACTURER:** Schebler Company

   CERTIFIED PRODUCT: Pre-Fabricated Grease Duct

   MODEL: FG3

   PRE-FABRICATED GREASE DUCT: Reference Figure 1. Install grease ducts in compliance with the requirements of NFPA 96, the International Mechanical Code (IMC), or the National Building Code of Canada (NBCC), as applicable. Install at a slope of not less than 1/16 (0.0625) unit vertical in 12 units horizontal toward the hood or toward a grease reservoir. Where horizontal ducts exceed 75 ft. in length, the slope shall be not less than 3/16 (0.1875) unit vertical in 12 units horizontal. Obtain AHJ approval for these alternate methods. Use the

Intertek-Certified pre-fabricated grease duct identified above and having the following features and/or specifications:

A. DUCT SIZE –
- Nominal Inside Diameter (ID): 5 in. to 24 in.
- Nominal Outside Diameter (OD): 11 in. to 30 in.

B. ACCESS DOOR – When required, use the duct manufacturer's capped grease tee with supplied 1-1/2 in. grease dam as the access door. Follow manufacturer's Standard Joints (Item 2) installation methods.

2. JOINTS: Join the Pre-Fabricated Grease Duct (Item 1) sections using the following components and methods:

A. STANDARD JOINT – Reference Figure 2.

i. Joint Sealant: Fill the Inner Band (Item 2Aii) "V" groove with a continuous bead of supplied S2000 sealant. Apply a continuous 1/4 in. bead of S2000 sealant to one of the inner duct mating flanges.

ii. Inner Band: Use the supplied V-shaped Inner Band (see Figure 2) filled with Joint Sealant (Item 2Ai) to join the mating inner duct flanges. Fasten the Inner Band using the supplied hardware in accordance with the manufacturer's installation instructions.

iii. Joint Insulation: Use the supplied joint insulation, which is a min. of 4 in. wide, nominal 1 in. thick, and of the same type and density as the insulation used in annular space of the Pre-Fabricated Grease Duct (Item 1). Wrap the joint insulation around the connection three times so as to create a nominal 3 in. thickness of insulation; add a min. 2 in. overlap on the final turn.

iv. Outer Band: Use the supplied Outer Band (see Figure 2). Ensure that the outer band seat into the outer shell grooves. Fasten the outer band using the supplied hardware in accordance with the manufacturer's installation instructions.

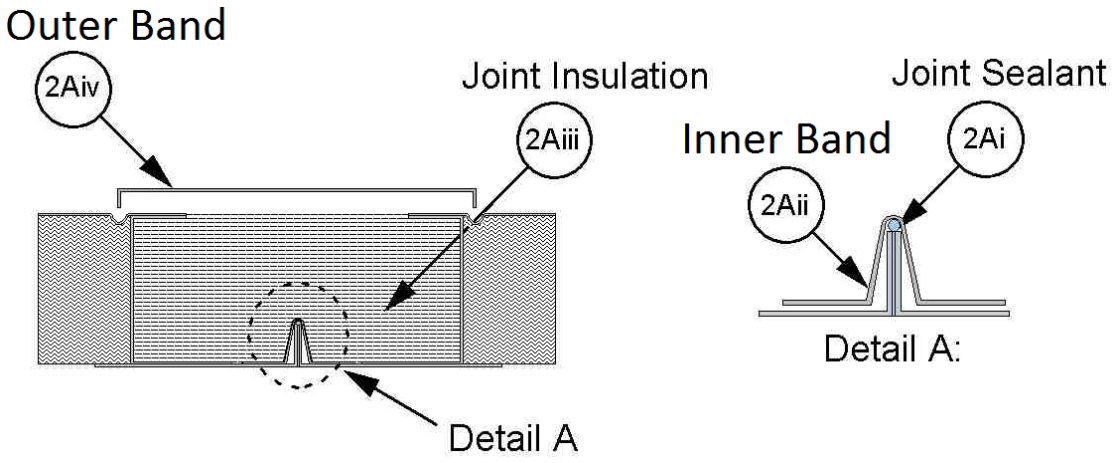


Figure 2. Standard Joint

B. VARIABLE STRAIGHT (VS) LENGTH SECTION JOINT – Reference Figure 3. When required, use a Variable Straight (VS) Length section and joint consisting of the following supplied components:
   - Variable Inner Liner
   - Variable Slip Collar
   - Inner Bands (V-shaped)
   - Blanket Insulation (not shown) – same as duct insulation, to be wrapped around Variable Inner Liner to three full layers thick.
   - Variable Outer Half Shells
   - V bands
   - Insulation

   Install with gas flow directed from the un-flanged to the flanged side of the VS section with slope requirements as described in Item 1 above. Support the adjoining grease duct sections on either side as specified in Item 3 or in accordance with NFPA 96, the IMC, or other regulatory requirement, as applicable, when those requirements are greater. The joint shall be installed in accordance with the general requirements in Item 2, except for the modifications as shown in Figure 3 below. Ensure a min. 3 in. overlap of the un-flanged end of the inner liner into the adjacent grease duct section inner liner.

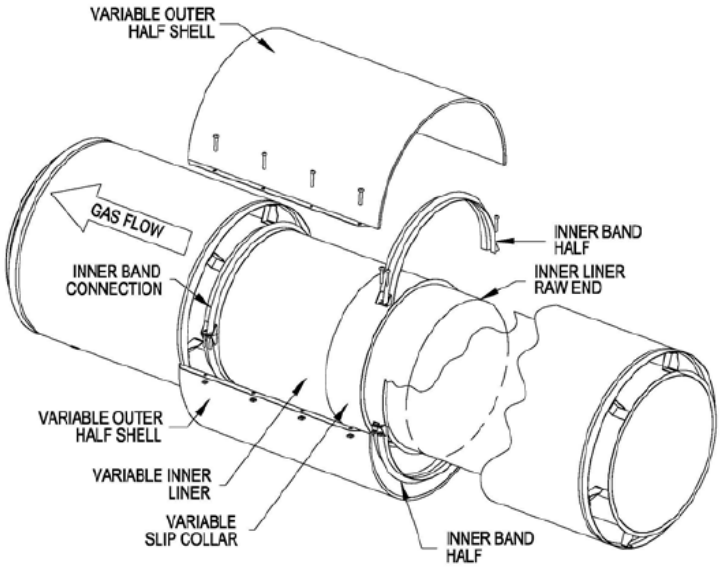


Figure 3. Variable Straight (VS) Length Section and Joint

C. ADJUSTABLE LENGTH (AL) SECTION JOINT – Reference Figure 4. When required, use an Adjustable Length (AL) section and joint consisting of the following supplied components. Install with gas flow directed from the larger diameter telescoping liner to the smaller diameter telescoping liner with slope requirements as described in Item 1 above. Ensure a min. 3 in. overlap of the telescoping inner liners. Support the adjoining grease duct sections on either side as specified in Item 3 or in accordance with NFPA 96, the IMC, or other regulatory requirement, as applicable, when those requirements are greater. The joint shall be installed in accordance with the general requirements in Item 2.

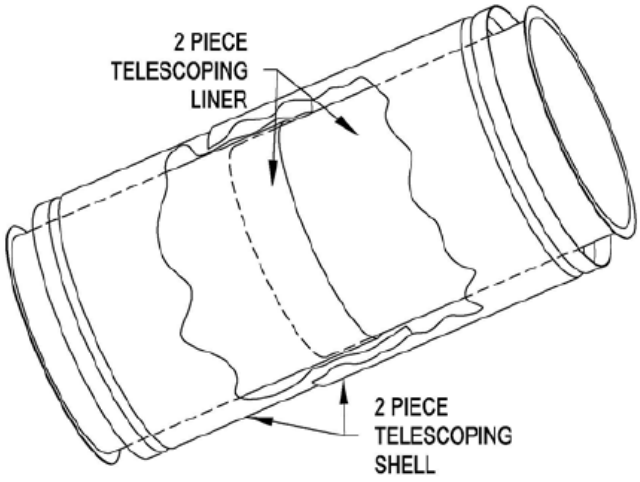


Figure 4. Adjustable Length (AL) Section and Joint

D. SUPPORT PLATE JOINT – Use this joint method in combination with Support Plate, Part No. SP, when required for attachment to structural framework. Attach the Support Plate directly under the banded finished inner joint and the clamp flange above it. Complete the joint installation in a similar manner to the Standard Joint (Item 2A) except use reduced width Joint Insulation (Item 2Aiii) as supplied, as well as half Outer Bands (Item 2Aiv), as supplied, above and below the Support Plate. Reference Figure 5.

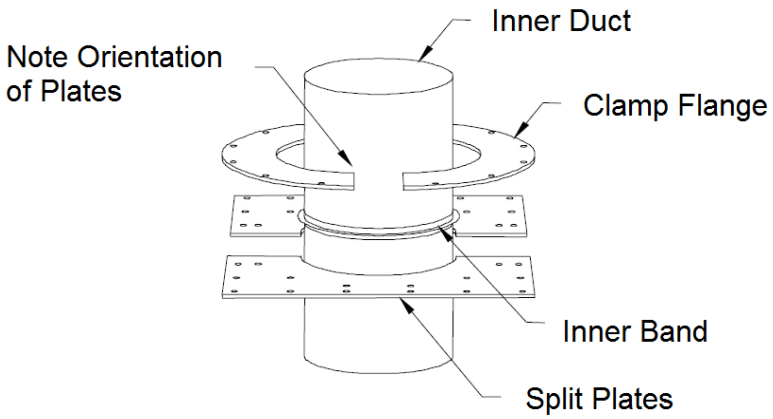


Figure 5. Support Plate, Part No. SP – Exploded View

3. SUPPORTS: Rigidly support the Pre-Fabricated Grease Duct (Item 1) as specified below or in accordance with IMC, NFPA 96, NBCC, or other regulatory requirements as applicable, when those requirements are greater or not covered herein. Follow the requirements for horizontal and vertical supports in Items 3A, 3B, and 3C below. Ensure that the max. unsupported inclined length of duct does not exceed 12 ft.

A. HORIZONTAL SUPPORTS – Support the Pre-Fabricated Grease Duct (Item 1) using supplied steel, Full Ring (Part No. FR) supports, or supplied steel, Half Ring (Part No. HR) supports (see Figure 1) and two min. 5/8 in. diameter threaded steel rods fastened with nuts and washers (see Figure 1, Detail A). Use min. 1-1/2 in. x 1-1/2 in. x 1/8 in. angle ring for up to nominal 8 in. ID Pre-Fabricated Grease Duct (Item 1); min. 1-1/2 in. x 1-1/2 in. x 3/16 in. angle ring for up to nominal 18 in. ID Pre-Fabricated Grease Duct (Item 1); and min. 2 in. x 2 in. x 3/16 in. angle ring for up to nominal 24 in. ID Pre-Fabricated Grease Duct (Item 1). Connect the threaded steel rods to the bottom of the floor assembly using an attachment method determined by the responsible project structural engineer, as appropriate, to support the load of the Pre-Fabricated Grease Duct (Item 1) under a fire load equivalent to ASTM E119 time-temperature curve for a 2 hour period, and accounting for any other applicable load considerations. Place one threaded steel rod on each side of the Pre-Fabricated Grease Duct (Item 1) and fasten to the full angle ring support. Space horizontal supports a max. of 12 ft. on center (oc).

B. VERTICAL SUPPORTS (Wall Support) – Where the Pre-Fabricated Grease Duct (Item 1) is installed vertically along a rigid supporting construction, use the Wall Support, Part No. WS, depicted in Figure 6, with supplied components.

i. Supporting Construction: Use supporting construction determined by the responsible project structural engineer as appropriate to support the required load of the Pre-Fabricated Grease Duct (Item 1), and to meet the requirements of the IMC, NFPA 96, NBCC, or other applicable regulatory requirement, accounting for other load considerations such as, but not limited to, seismic and wind loads.

At the standard joint to be supported, connect the supplied split clamp flange to the supplied split plate with the provided hardware. The split plates shall be installed below the finished joint and the clamp flange shall be above the finished joint. Secure the joined assembly to the supplied left and right steel Wall Brackets (Item 3Bii). Secure the wall support assembly to the horizontal legs of the Wall Brackets (Item 3Bii) using six supplied min. 3/8 in. bolts and nuts per Wall Bracket (Item 3Bii). Follow the manufacturer's installation instructions.

ii. Wall Brackets: Attach the supplied left and right, min. 1/4 in. thick, steel wall brackets to the vertical supporting construction using supplied 1/2 in. bolts/anchors at each of the provided through-hole locations (four per bracket). Ensure that the orientation of the wall brackets is as shown in Figure 4.

iii. Space the vertical wall supports as required to limit the unsupported height of the Pre-Fabricated Grease Duct (Item 1) assembly as listed below for the nominal inner diameters shown:

- **6-in.:** max. 37 ft.
- **8-in.:** max. 36 ft.
- **10-in.:** max. 35 ft.
- **12-in.:** max. 34 ft.
- **14-in.:** max. 33 ft.
- **16-in.:** max. 32 ft.
- **18-in.:** max. 31 ft.
- **20-in.:** max. 30 ft.
- **22-in.:** max. 29 ft.
- **24-in.:** max. 28 ft.

Reduce the support spacing as determined by the responsible project structural engineer, when required, due to other load considerations including, but not limited to, structural strength of the supporting construction, anchor strength, anchor pull-out strength, wind loads, and seismic loads.

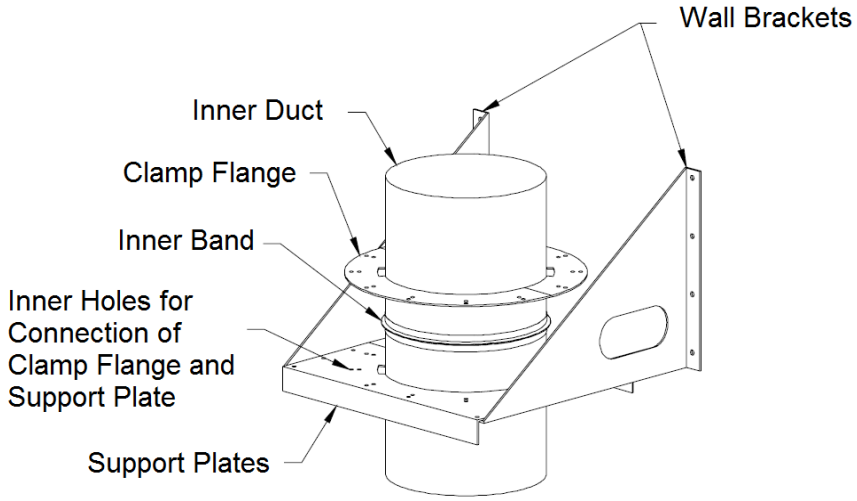


Figure 6. Wall Support, Part No. WS

C. VERTICAL SUPPORTS (Support Plate) – Reference Figure 7. Where the Pre-Fabricated Grease Duct (Item 1) penetrates a fire-rated floor/ceiling assembly as specified in Item 4, use the supplied Support Plate, Part No. SP, at the joint directly under the floor/ceiling assembly. When the Support Plate is mechanically secured to building structural members, the allowable unsupported height of the Pre-Fabricated Grease Duct (Item 1) assembly is listed below:

- **6-in.:** max. 59 ft.
- **8-in.:** max. 57 ft.
- **10-in.:** max. 55 ft.
- **12-in.:** max. 53 ft.
- **14-in.:** max. 50 ft.
- **16-in.:** max. 48 ft.
- **18-in.:** max. 46 ft.
- **20-in.:** max. 44 ft.
- **22-in.:** max. 42 ft.
- **24-in.:** max. 40 ft.

Follow the manufacturer's installation instructions in addition to the requirements indicated below:

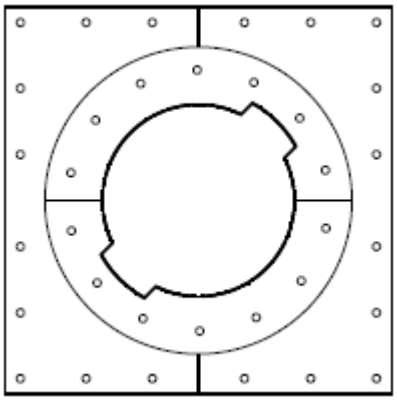


Figure 7. Support Plate, Part No. SP

i. Complete the joint installation in a similar manner to the Standard Joint (Item 2A) except use reduced width Joint Insulation (Item 2Aiii) as supplied, as well as half Outer Bands (Item 2Aiv) as supplied, above and below the Support Plate.

ii. Bolt the Support Plate to the bottom of a 2 in. x 2 in. steel angle frame with welded corners; the angle frame shall have vertical legs oriented upwards at the outer perimeter of the frame. Use supplied hardware at each hole of the bolt-hole pattern except the corner holes.

iii. Drill out the corner holes as needed to hang the vertical, penetrating Pre-Fabricated Grease Duct (Item 1) section with min. 1 in. diameter steel, threaded rods, flat washers and nuts.

iv. Connect the threaded steel rods to the bottom of the floor assembly using an attachment method determined by the responsible project structural engineer, as appropriate, to support the load of the Pre-Fabricated Grease Duct (Item 1) under a fire load equivalent to ASTM E119 time-temperature curve for a 2 hour period, and accounting for any other applicable load considerations.

4. FLOOR/CEILING PENETRATION FIRESTOP: When required to penetrate a fire-rated floor/ceiling assembly, install the firestop system described in Items 4A to 4E (see Figure 8).

A. FLOOR/CEILING ASSEMBLY – Penetrate a 2 hour fire-rated, solid concrete, floor/ceiling assembly made from reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m^3) concrete, and having a min. thickness of 4.6 in. Create a round through-opening in the floor/ceiling assembly so that the through-opening diameter is greater than the OD of the Pre-Fabricated Grease Duct (Item 1) by 2 in. Position the Pre-Fabricated Grease Duct (Item 1) concentrically or eccentrically in the through-opening so that the annular space ranges from min. 1/2 in.to max. 1-1/2 in.

B. PACKING MATERIAL – Fill the annular space between the Pre-Fabricated Grease Duct (Item 1) and the Floor/Ceiling Assembly (Item 4A) with insulation supplied by the duct manufacturer, which is nominal 6 pcf, nominal 1 in. thick, and of the same type as the annular insulation used in the Pre-Fabricated Grease Duct (Item 1). Install insulation in horizontal layers in the annular space; compressed a min. 50%. Fill the entire annular space and then recess the packing material 1/2 in. from the top and bottom of the concrete Floor/Ceiling Assembly (Item 4A).

C. MANUFACTURER – Hilti

LISTED PRODUCT – Sealant

MODEL – FS-ONE Caulk
Fill, Void, or Cavity Material – Fill the 1/2 in. deep recesses (top and bottom) in the Packing Material (Item 4B) and the Floor/Ceiling Assembly (Item 4A) with FS-ONE Caulk.

D. COVER RINGS – Use the supplied 4 in. wide cover rings (two half-rings required for top and two half-rings required for bottom), constructed of min. 22 GA aluminized steel. Install around the Pre-Fabricated Grease Duct (Item 1). Ensure a min. 2-1/2 in. overlap onto the top of the Floor/Ceiling Assembly (Item 4A). Secure the cover rings to the top and bottom of the Floor/Ceiling Assembly (Item 4A) with min. 3/16 in. x 1-1/4 in. long concrete screws spaced along the perimeter of the cover rings max. of 12 in. oc.

E. INSULATION COLLAR WITH FIRESTOP SEAL RING – Use a single 12 in. wide layer of insulation supplied by the duct manufacturer, which is nominal 6 pcf, nominal 1 in. thick, and of the same type as the annular insulation used in the Pre-Fabricated Grease Duct (Item 1); wrap it around the Pre-Fabricated Grease Duct (Item 1) on the top side and bottom side of the Floor/Ceiling Assembly (Item 4A) to create insulation collars on both sides. Secure the insulation collars with the supplied 12 in. wide, 22 GA, aluminized steel Firestop Seal Ring. Fasten the Firestop Seal Ring with supplied hardware in accordance with the manufacturer's installation instructions.

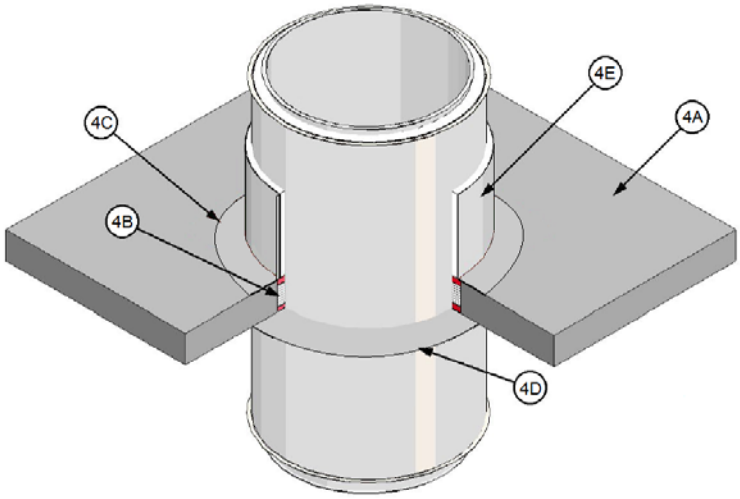


Figure 8: Floor/Ceiling Firestop

5. WALL PENETRATION FIRESTOP: When required to penetrate a fire-rated wall assembly, install firestop system described in Items 5A to 5D (see Figure 9).

A. WALL ASSEMBLY – Penetrate a 2 hour fire-rated, solid concrete, wall assembly made from reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m^3) concrete, and having a min. thickness of 4.6 in. Create a round through-opening in the wall assembly so that the through-opening diameter or width is greater than the OD of the Pre-Fabricated Grease Duct (Item 1) by 2 in. Position the Pre-Fabricated Grease Duct (Item 1) concentrically or eccentrically in the through-opening so that the annular space ranges from min. 1/2 in. to max. 1-1/2 in.

B. PACKING MATERIAL – Fill the annular space between the Pre-Fabricated Grease Duct (Item 1) and the Wall Assembly (Item 5A) with insulation supplied by the duct manufacturer, which is nominal 6 pcf, nominal 1 in. thick, and of the same type as the annular insulation used in the Pre-Fabricated Grease Duct (Item 1). Install insulation in horizontal layers in the annular space; compressed a min. 50%. Fill the entire annular space and then recess the packing material 1/2 in. from both sides of the Wall Assembly (Item 5A).

C. MANUFACTURER – Hilti

LISTED PRODUCT – Sealant

MODEL – FS-ONE Caulk

Fill, Void, or Cavity Material – Fill the 1/2 in. deep recesses in the Packing Material (Item 5B) and the Wall Assembly (Item 5A) with FS-ONE Caulk from both sides of the Wall Assembly (Item 5A).

D. COVER RINGS – Use the supplied 4 in. wide cover rings (two half-rings required from each), constructed of min. 22 GA aluminized steel. Install around the Pre-Fabricated Grease Duct (Item 1). Ensure a min. 2-1/2 in. overlap onto the Wall Assembly (Item 5A). Secure the cover rings to Wall Assembly (Item 5A) with min. 3/16 in. x 1-1/4 in. long concrete screws spaced along the perimeter of the cover rings a max. of 12 in. oc.

E. INSULATION COLLAR WITH FIRESTOP SEAL RING – Use a single 12 in. wide layer of insulation supplied by the duct manufacturer, which is nominal 6 pcf, nominal 1 in. thick, and of the same type as the annular insulation used in the Pre-Fabricated Grease Duct (Item 1); wrap it around the Pre-Fabricated Grease Duct (Item 1) on both sides of the Wall Assembly (Item 5A) to create insulation collars on both sides. Secure the insulation collars with the supplied 12 in. wide, 22 GA aluminized steel Firestop Seal Ring. Fasten the Firestop Seal Ring with supplied hardware in accordance with the manufacturer's installation instructions.

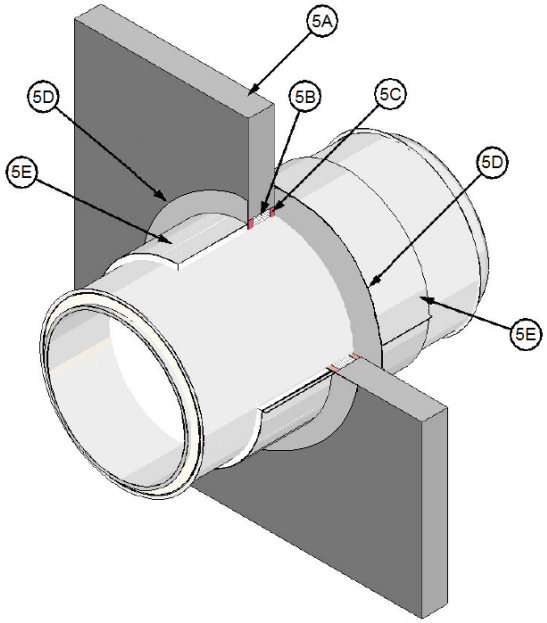


Figure 9. Wall Firestop