EFS/BI 120-01

intertek
Total Quality. Assured.

Division 07 – Thermal and Moisture Protection
07 21 00 Thermal Protection
07 21 16 Blanket Insulation

EFS Engineering Ltd.
Design No. EFS/BI 120-01
FIRE RESISTANT GREASE DUCT
Ductz+, EFS Wrap, FlameWrap, and Ductz120 Model 1.1
ASTM E2336
Non-combustibility Test (ASTM E136): Pass
Fire Resistance Test (ASTM E119): 2 Hour
Durability Test (ASTM C518 modified): Pass
Internal Fire Test – 4 Hour @ 500°F and 30 Minutes @ 2000°F: Pass
Fire-Engulfment Test (ASTM E119 Exposure): 2 Hour
CAN/ULC-S144
Rating: 2 Hour
ASTM E814 and UL 1479
F-, T-Rating: 2 Hour
CAN/ULC-S115
F-, FT-, FH-, FTH-Rating: 2 Hour

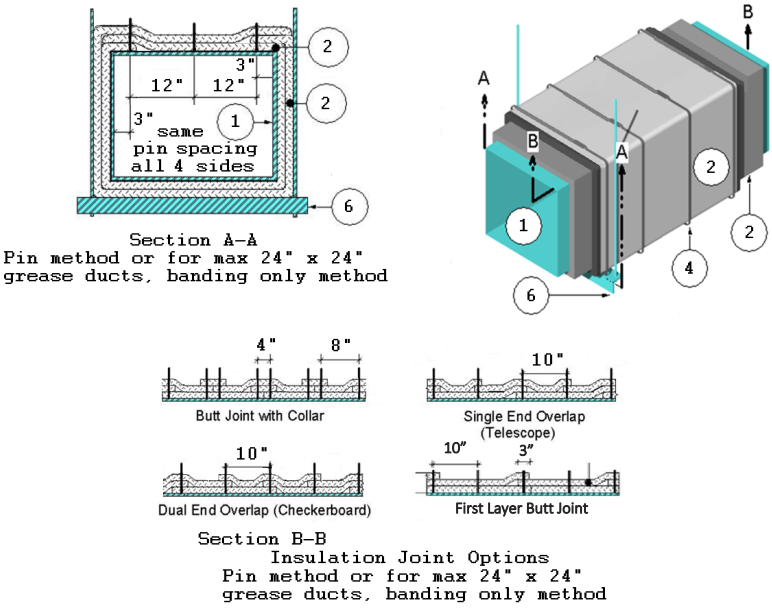

Figure 1. EFS Ductz+ Grease Duct Insulation System

EFS/BI 120-01 (2 OF 13)

Division 07 – Thermal and Moisture Protection
07 21 00 Thermal Protection
07 21 16 Blanket Insulation

1. **GREASE DUCT:** Use a continuously welded, liquid-tight, rectangular or round duct system with horizontal and vertical shafts constructed to the following min. requirements:

   A. STEEL – Min. 16 GA carbon steel

   B. JOINTS – Continuously welded, liquid-tight construction

   C. CROSS-SECTIONAL SHAPE – Rectangular or Round

   D. CROSS-SECTIONAL DIMENSIONS –
      i. Rectangular: Max. 54 in. × 54. in.
      ii. Round: Max. 54 in. diameter

   E. When required, equip the duct with an access door (Item 5)

   F. Reinforce the grease duct to NFPA 96 requirements designed to carry the weight of the grease duct assembly covered with two layers of duct insulation (Item 2) under a fire load equivalent to that of the ASTM E119 time-temperature curve for the rated period.

   G. Rigidly support the grease duct as specified in Item 6 or in accordance with International Mechanical Code (IMC), NFPA 96, or other applicable requirements, when not specified herein or when those requirements are greater.

2. **CERTIFIED MANUFACTURER:** EFS Engineering Ltd.

   CERTIFIED PRODUCT: Duct Insulation

   CERTIFIED MODELS: Ductz+, EFS Wrap, FlameWrap, and Ductz120 Model 1.1 (Ductz+ used as example in design listing)

   Apply two layers of the nominal 1-1/2 in. thick, nominal 6 pcf density duct insulation over the entire surface of the grease duct (Item 1).

   A. STANDARD INSTALLATION – Apply both layers of duct insulation with transverse and longitudinal joints as shown in Figure 1. For rectangular grease ducts (Item 1), locate inner layer longitudinal joints (Figure 1) at a corner of the grease duct (Item 1), and offset the outer layer joint (Figure 1) to a different corner. For horizontal sections, ensure the longitudinal joints are placed at the top corners. For round grease ducts (Item 1), locate inner layer longitudinal joints and outer layer longitudinal joints 90° apart; for horizontal sections, center the joints on the top of the grease duct (Item 1). Use a min. 4 in. overlap at all insulation joints with the exception of first layer butt joint wrapping described as follows. Optional: for rectangular ducts only, compressed butt joints may be used on the first layer and horizontal sections only, with a min. 3 in. overlap on the second layer (See Figure 1). Transverse butt joints with collar shall use a min. 8 in. wide collar with min. 4 in. overlap on each side of the butt joint. Use blanket, available in various widths, fully encapsulated with a polypropylene foil scrim. Cover all visually exposed ends and edges of duct insulation with nominal 3 in. wide aluminum foil tape. Tape all joints (inner and outer layers; longitudinal and transverse) with nominal 3 in. wide aluminum foil tape (reference Figure 2).

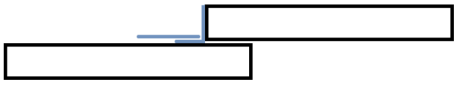

Figure 2: Aluminum Tape Installation Detail at Inner and Outer Layer Insulation Joints (tape shown in blue)

   B. THREE-SIDED INSTALLATION – Refer to Figures 3 and 4.

EFS/BI 120-01 (3 OF 13)

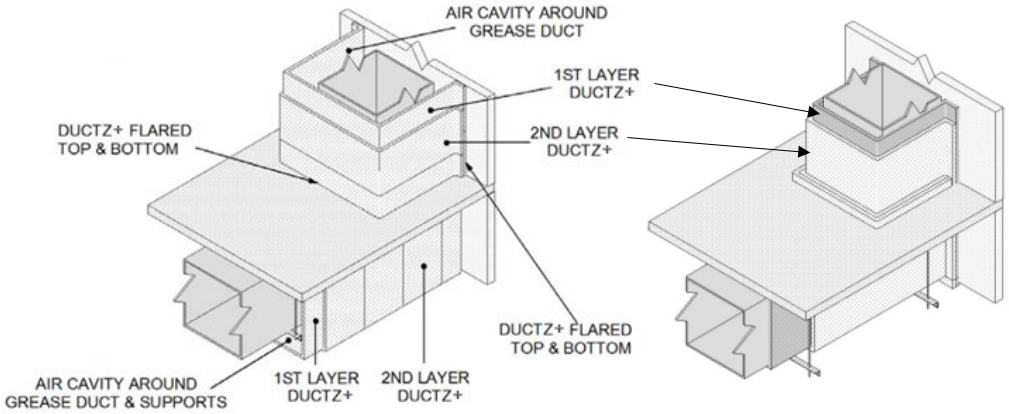

Figure 3. Three-Side Installation Top Isometric (Shown with and without Optional Air Cavity)

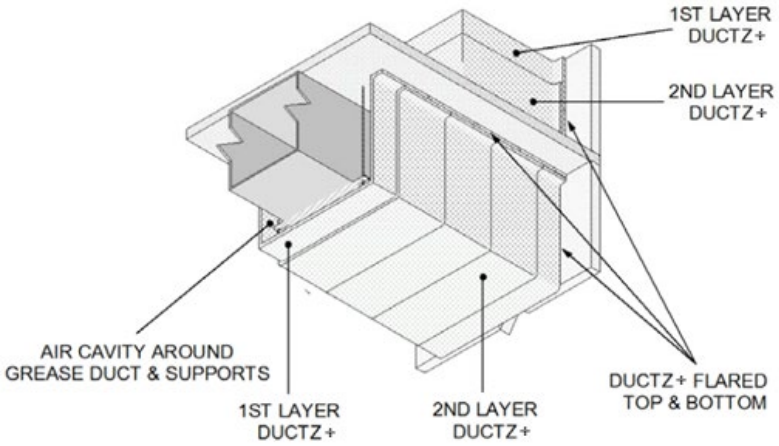

Figure 4. Three-Side Installation Bottom Isometric (Shown with Optional Air Cavity)

EFS/BI 120-01 (4 OF 13)

When the grease duct (Item 1) is positioned within 12 in. of a 2-hr. fire-rated wall or ceiling, use a three-sided installation method. Apply both layers of duct insulation in general accordance with conditions specified in Item 2A with the following additional conditions and modifications:

i. Floor/Ceiling Assembly: Min. 2 hr. fire-rated, reinforced concrete.
ii. Wall Assembly: Min. 2 hr. fire-rated, reinforced concrete; min. 2 hr. fire-rated concrete masonry unit (CMU); min. 2 hr. fire-rated, steel stud framing with min. two layers of 5/8 in., Type X gypsum board on each side.
iii. Supports: Position horizontal supports (Item 6) inside of the duct insulation (Item 2), or on the outside of the duct insulation (Item 2). For installation of supports inside the insulated space, apply a min. 6 in. wide strip of un-encapsulated duct insulation (Item 2) between the grease duct (Item 1) and the horizontal supports (Item 6); and space the supporting threaded steel rods 1-1/2 in. ± 1/2 in. from the surface of the uninsulated grease duct.
iv. Insulation Anchors: Floor/Ceiling Application – Use min. 16 GA, min. 1-1/2 in. wide steel sheet strips, and min. 1/4 in. diameter hex-head concrete anchors, spaced to match the longitudinal pin spacing shown in Figure 1. Position the floor/ceiling anchors over a min. 6 in. wide horizontal flange of the flared duct insulation (Item 2) which is in contact with the floor/ceiling assembly. Position the anchors such that the duct insulation extends a min. 1-1/2 in. beyond the anchors. Refer to Figure 6.
v. Insulation Anchors: Wall Application – Use min. 16 GA, min. 1-1/2 in. wide steel sheet strips. For concrete or masonry wall, fasten the duct insulation (Item 2) to the wall using min. 1/4 in. diameter hex-head concrete or masonry anchors as applicable, and spaced to match the longitudinal pin spacing shown in Figure 1. For gypsum wall, use min. 1/4 in. diameter hex-head self-drilling screws spaced to match the longitudinal pin spacing shown in Figure 1. Position the wall anchors over a min. 6 in. wide flange of the flared duct insulation (Item 2) which is in contact with the wall assembly. Position the anchors such that the duct insulation extends a min. 1-1/2 in. beyond the anchors. Refer to Figure 6. For steel stud and gypsum wall attachment, ensure that studs are positioned in line with the wall anchors.
vi. Gypsum Anchor Protection Boards: For installation onto steel stud and gypsum wall, use three layers of 6 in. wide, 5/8 in. Type X gypsum board strips, mounted vertically onto the gypsum wall under the duct insulation (Item 2) and adjacent to the wall anchors (Item 2Bvi) as shown in Figure 6. Attach the gypsum wall anchor boards with #10 drywall Type G laminating screws spaced 24 in. on center (oc). Secure the insulation blanket (Item 2) to the gypsum wall anchor board using wall anchors (Item 2Bvi) consisting of min. 16 GA, min. 1-1/2 in. wide steel sheet strips and #10 drywall Type G laminating screws spaced to match the longitudinal pin spacing shown in Figure 1.

EFS/BI 120-01 (5 OF 13)

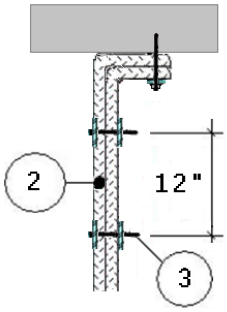

Figure 5. Pin Method for Duct Insulation to Floor/Ceiling or Wall for Three-Sided and Two-Sided Installation for Round Ducts

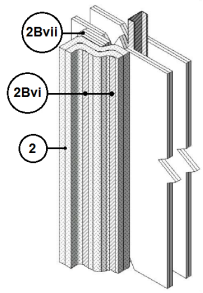

Figure 6. Wall Anchoring

C. TWO-SIDED INSTALLATION – Refer to Figures 7 and 8.

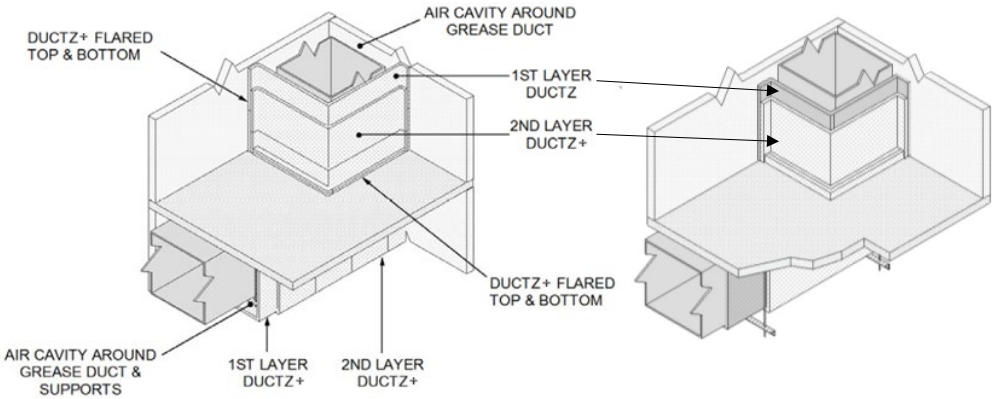

Figure 7. Two-Side Installation Top Isometric (Shown with and without Optional Air Cavity)

EFS/BI 120-01 (6 OF 13)

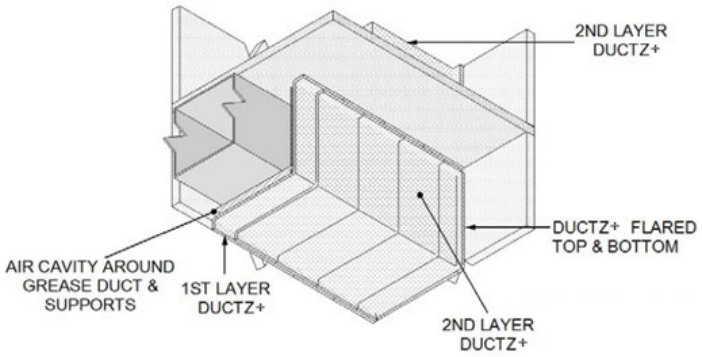

Figure 8. Two-Side Installation Bottom Isometric (Shown with Optional Air Cavity)

When the grease duct (Item 1) is positioned within 12 in. of a 2-hr. fire-rated wall and ceiling, or within 12 in. of two adjacent 2 hr. fire-rated walls, use a two-sided installation method. Apply both layers of duct insulation in general accordance with conditions specified in Item 2A with the following additional conditions and modifications:

i. Floor/Ceiling Assembly: Min. 2 hr. fire-rated, reinforced concrete.
ii. Wall Assembly: Min. 2 hr. fire-rated, reinforced concrete; min. 2 hr. fire-rated concrete masonry unit (CMU); min. 2 hr. fire-rated steel stud framing, and min. two layers of 5/8 in. Type X gypsum board on each side.
iii. Supports: Position horizontal supports (Item 6) inside of the duct insulation (Item 2) or on the outside of the duct insulation (Item 2). For installation of supports inside the insulated space, apply a min. 6 in. wide strip of un-encapsulated duct insulation (Item 2) between the grease duct (Item 1) and the horizontal supports (Item 6); and space the supporting threaded steel rods 1-1/2 in. ± 1/2 in. from the surface of the uninsulated grease duct. For installation on the outside of the duct insulation (Item 2), anchor the wall-facing side of the supports (Item 6) to the wall using min. 3 in. wide L-shaped brackets made from min. 3 in. × 3 in. × 1/4 in. steel angle. Fasten the brackets to the wall with a min. of two 1/4 in. diameter steel fasteners of the appropriate type for the wall construction. In the case of steel stud wall construction, fasten the brackets into steel studs. When the supports (Item 6) are located outside of the duct insulation (Item 2), install the brackets over the flared duct insulation (Item 2). Fasten the support (Item 6) to the bracket using a 1/2 in. steel bolt, nut and washer.
iv. Insulation Anchors: Floor/Ceiling Application – Use min. 16 GA, min. 1-1/2 in. wide steel sheet strips, and min. 1/4 in. diameter hex-head concrete anchors, spaced to match the longitudinal pin spacing shown in Figure 1. Position the floor/ceiling anchors nominal 4 in. from the outer surface of the duct insulation (Item 2). Extend the duct insulation min. 1-1/2 in. beyond the anchors. Reference Figure 9.
v. Insulation Anchors: Wall Application – Use min. 16 GA, min. 1-1/2 in. wide steel sheet strips. For concrete or masonry wall, fasten the duct insulation (Item 2) to the wall using min. 1/4 in.

EFS/BI 120-01 (7 OF 13)

diameter, hex-head concrete or masonry anchors as applicable, and spaced to match the longitudinal pin spacing shown in Figure 1. For gypsum wall, use min. 1/4 in. diameter, hex-head self-drilling screws, spaced to match the longitudinal pin spacing shown in Figure 1. Position the wall anchors nominal 4 in. from the outer surface of the duct insulation (Item 2) for concrete and masonry wall attachment, and nominal 6 in. from outer surface of the duct insulation (Item 2) for steel stud and gypsum wall attachment. Extend the duct insulation min. 1-1/2 in. beyond the anchors. For steel stud and gypsum wall attachment, ensure that studs are positioned in line with the wall anchors.

vi. Gypsum Anchor Protection Boards: For installation onto steel stud and gypsum wall, use three layers of 6 in. wide, 5/8 in. Type X gypsum board strips, mounted onto the gypsum wall under the duct insulation (Item 2) and adjacent to the wall anchors (Item 2Cvi) as shown in Figure 9. For vertical application, attach the gypsum wall anchor boards with #10 drywall Type G laminating screws spaced 24 in. oc. For horizontal application, attach the gypsum anchor boards with #10 drywall Type S screws into steel studs. Secure the insulation blanket (Item 2) to the gypsum wall anchor board using wall anchors (Item 2Cvi) consisting of min. 16 GA, min. 1-1/2 in. wide steel sheet strips and #10 drywall Type G laminating screws, spaced to match the longitudinal pin spacing shown in Figure 1.

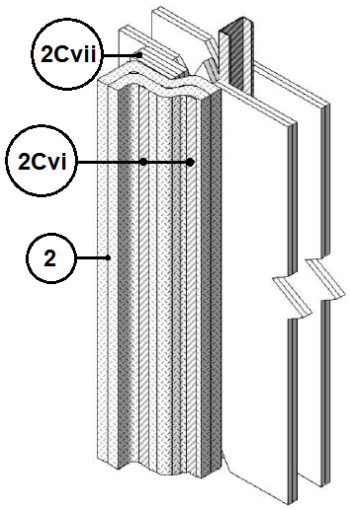

Figure 9. Wall Anchoring

3. **PINS:** Refer to Figure 1. Use this pin-only method for any grease duct (Item 2) size that is approved under this design listing. Use min. 12 GA, 7 in. long, steel insulation pins or min. 12 GA, steel cup-head insulation pins. Weld pins to the grease duct (Item 1) using the pin spacing shown in Figure 1. Use 2-1/2 in. × 2-1/2 in. galvanized steel, self-locking washer clips to secure each layer of insulation (Item 1). After all the clips are installed, cut off or bend flush with duct insulation (Item 1) the pins that are too long.

4. **BANDING:** Use the following banding, or banding and pins, installation method as an approved alternative to pins-only (refer to Item 3) under the conditions noted below:

   A. BANDING ONLY METHOD – Use this alternate method on max. 24 in. × 24 in. grease ducts (Item 1). In lieu of pins, use min. 1/2 in. wide, 0.015 in. thick, stainless steel or carbon steel bands secured with min. 1 in. long steel crimp clamps. When needed to ease installation, use filament tape as a temporary hold for the duct insulation (Item 2) prior to

EFS/BI 120-01 (8 OF 13)

banding. After second layer of duct insulation (Item 2) is installed, place banding a max. 2 in. from all duct insulation edges (Item 2) and a max. of 10 in. oc elsewhere. Tension the banding to hold the duct insulation (Item 2) in place without cutting or damaging the duct insulation (Item 2) or grease duct (Item 1).

B. PIN AND BANDING METHOD – Use this alternate method on max. 36 in. × 36 in. grease ducts (Item 1). For horizontal sections of grease duct (Item 2) only, apply banding as noted in Item 4A and pins as noted in Item 3 on the bottom side of the grease duct (Item 1).

5. **ACCESS DOOR:** May install Intertek Certified, max. 26 in × 20 in. Ductmate Ultimate Access Door™ (not shown), with access door insulation described in Item 5G) for ASTM E2336 only. Additionally, when required by NFPA 96, install an access door using Figure 10a or 10b and the following field-fabricated methods:

I. FIELD DOOR 1

A. ACCESS DOOR OPENING (Not Identified in Figure 10) – Mark a clean-out access opening location on the uninsulated grease duct (Item 1) at its mid-height along the horizontal section. Cut an opening max. 18 in. high × 24 in. wide at the mid-height along the horizontal section. Install 12 GA, 7 in. long, steel insulation pins around the perimeter of the access door opening, spaced 4 in. away from the opening, with a pin located at each corner and max. 10 in. oc elsewhere around the perimeter.

B. ACCESS DOOR OPENING FRAME – Construct a rectangular frame with the same size as the access door opening. Use 1-1/2 in. × 1-1/2 in. × 1/8 in. steel angle with flanges facing outward and with continuously welded and mitered corners. Continuously weld the angle frame to the perimeter of the access door opening. Drill and tap 3/8-16 threaded holes around the perimeter of the access door frame using max. 6 in. oc spacing.

C. DUCT INSULATION OPENING – Create a stepped opening in the duct insulation layers where the opening in the first layer is cut 1/2 in. smaller than the outside dimensions of the access door opening frame, so that the duct insulation (Item 2) extends under the frame by 1/4 in. around the perimeter. Cut the second layer 2 in. larger than the outside dimensions of the access door opening frame so that there is a 1 in. separation from the frame.

D. INNER ACCESS DOOR COVER – Use 16 GA steel sheet cut to the same dimensions as the access door frame (Item 5B). Drill 1/2 in. diameter through holes spaced to match the bolt pattern of the access door frame. Install min. 12 GA, 6 in. long, steel insulation pins on the inside face of the inner access door cover. Space the pins in a uniform pattern, 2 in. from the perimeter and max. 5 in. oc vertically and horizontally. Install two full thickness layers of un-encapsulated Ductz+ core insulation (Item 2). Cut the Ductz+ core insulation (Item 2) to form a tight fit within the access door opening. Secure the Ductz+ core insulation (Item 2) onto the pins with 2-1/2 in. × 2-1/2 in. galvanized steel, self-locking washer clips. Set the inner access door into the access door opening (Item 5A) with the insulated side towards the opening.

E. ACCESS DOOR GYPSUM BOARD – Use 5/8 in. Type X gypsum board cut to match the size and bolt hole pattern of the inner access door cover (Item 5D).

F. OUTER ACCESS DOOR COVER – Create a 16 GA steel pan, size 1/4 in. larger than the access door frame (Item 5B) in both height and width, and 1 in. deep. Form the pan

EFS/BI 120-01 (9 OF 13)

from a single sheet of steel and use continuous welds at the corners. Drill 1/2 in. diameter bolt through holes to match the bolt hole pattern on the access door frame (Item 5B). Install the access door gypsum board (Item 5E) onto the outer access door cover, and then install both onto the inner access door cover. Attach these components to the access door frame using 3/8-16 steel bolts and flat washers. Install min. 12 GA, 6 in. long steel insulation pins on the outer access door cover (Item 5F). Space the pins in a uniform pattern, 2 in. from the perimeter and max. 10 in. oc vertically and horizontally.

G. ACCESS DOOR INSULATION – Install two layers of Ductz+ insulation (Item 2) onto the outer access door cover (Item 5F). Cut the first layer to fit tightly (min. 1/2 in. compression) into the recess in the second layer duct insulation (Item 2) to cover the access door. Cut the second layer min. 6 in. larger in height and width than the filled recess. Install the second layer of access door insulation over the insulation pins using 2-1/2 in. × 2-1/2 in., galvanized steel self-locking washer clips.

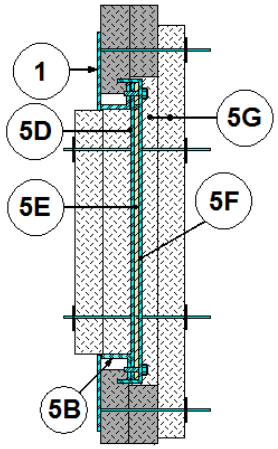

Figure 10a. Access Door

II. FIELD DOOR 2

H. ACCESS DOOR OPENING (Not Identified in Figure 10b) – Mark a clean-out access opening location on the uninsulated grease duct (Item 1) at its mid-height along the horizontal section. Cut an opening max. 18 in. high × 24 in. wide at the mid-height along the horizontal section. Install 12 GA, 7 in. long, steel insulation pins around the perimeter of the access door opening, spaced 2 in. away from the opening, with a pin located at each corner and max. 4 in. oc elsewhere around the perimeter.

I. ACCESS DOOR OPENING PERIMETER (Not Identified in Figure 10b) – Drill and tap 3/8-16 threaded holes around the perimeter of the access door frame using max. 6 in. oc spacing on the vertical (left and right) sides, and 4 in. spacing on the horizontal (top and bottom) sides.

J. DUCT INSULATION OPENING – Create a stepped opening in the duct insulation layers where the opening in the first layer is cut 1 in. larger than the outside dimensions of the

EFS/BI 120-01 (10 OF 13)

access door opening. Cut the second layer 2 in. larger than the outside dimensions of the access door opening frame.

K. ACCESS DOOR – Use 16 GA steel sheet cut to a door that measures 2 in. wider and higher than the cut dimensions up to a max. 20 in. high × 24 in. wide. Drill 1/2 in. diameter through holes spaced to match the bolt pattern of the access door opening. On the interior face perimeter of the door, install one layer of full thickness un-encapsulated Ductz+ core insulation (Item 2) using silicone. Cut the Ductz+ core insulation (Item 2) to a min. 2 in. wide strip and attach it to the perimeter so a 1/2 in. width extends or overhangs the dimensions of the door. form a tight fit within the access door opening. Secure the Ductz+ core insulation (Item 2) onto the pins with 2-1/2 in. × 2-1/2 in. galvanized steel, self-locking washer clips. Set the inner access door into the access door opening (Item 5A) with the insulated side towards the opening.

L. ACCESS DOOR INSULATION – Install three layers of Ductz+ insulation (Item 2) onto the access door cover (Item 5K). Cut the first layer to fit tightly (min. 1/2 in. compression) into the recess in the second layer duct insulation (Item 2) to cover the access door. Install the first layer of access door insulation over the insulation pins using 2-1/2 in. × 2-1/2 in., galvanized steel self-locking washer clips. Cut the second layer min. 6 in. larger in height and width than the filled recess. Install the second layer of access door insulation over the insulation pins using 2-1/2 in. × 2-1/2 in., galvanized steel self-locking washer clips. Cut the third layer min. 6 in. larger in height and width than the second layer. Install the third layer of access door insulation over the insulation pins using 2-1/2 in. × 2-1/2 in., galvanized steel self-locking washer clips. Secure the perimeter of the third layer of access door insulation to duct insulation (Item 2) using aluminum foil tape.

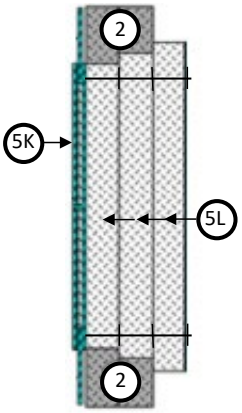

Figure 10b. Access Door

6. **SUPPORTS:** Support the horizontal portion of the insulated grease duct (Item 1) using an un-insulated "trapeze" system composed of a steel angle as the trapeze cross-member and two threaded steel rods connected using nuts and washers. Connect the threaded steel rods to the bottom of the floor assembly using an attachment method designed to carry the weight of the grease duct (Item 1) with duct insulation (Item 2) under a fire load equivalent to that of the ASTM E119 time-temperature curve for the rated period. Place one threaded steel rod at each end of the trapeze cross-member. Center the insulated grease duct (Item 1) on the trapeze cross-member. Space threaded steel rods 1-1/2 in. ± 1/2 in. from surface of the insulated grease duct. Extend trapeze cross-member at least 2 in. past each threaded steel rod. For rectangular grease ducts (Item 1), use min. 1/2 in. diameter, threaded steel rods and min. 3 in. × 3 in. × 1/4 in. steel angle. For round grease ducts (Item 1), use min. 1/2 in. diameter, threaded steel rods and

EFS/BI 120-01 (11 OF 13)

min. 3 in. × 3 in. × 1/4 in. steel angle rings to support the bottom 90° to 180° arc of the grease duct (Item 1). Space the horizontal supports a max. 72 in. oc.

7. **FLOOR/CEILING PENETRATION FIRESTOP:** When required to penetrate a fire-rated floor/ceiling assembly, install the firestop system described in Items 7A to 7E (Reference Figure 11).

   A. FLOOR/CEILING ASSEMBLY – Penetrate a min. 2 hr. 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 rectangular or round opening in the floor/ceiling assembly so that the opening width or diameter is 4 in. greater than the outside dimension of the grease duct (Item 1). Use a rectangular hole for rectangular ducts and a round hole for round ducts. Position the grease duct (Item 1) concentrically or eccentrically in the opening so that the annular space is min. 1-1/2 in. to max. 2-1/2 in.

   B. BOTTOM FIRESTOP ANGLES – Stitch weld 3 in. × 3 in. × 1/4 in. angles to the grease duct (Item 1) on the bottom side of the floor/ceiling assembly along the entire perimeter of the duct. Use two half angle rings of the same size for round ducts. Weld the corners or ends of adjacent angles together.

   C. PACKING MATERIAL – Fill the annular space between the prefabricated grease duct (Item 1) and the floor/ceiling assembly (Item 7A) with un-encapsulated Ductz+ core insulation (Item 2). For each side of the duct, cut multiple strips of insulation a length 1 in. longer than the void space to be filled and 1/4 in. wider than the width of the annual space. Insert the strips into the annular space, one on top of the other, and pressed flat against the 3 in. × 3 in. × 1/4 in. bottom firestop angles (Item 7B) located at the underside of the concrete floor and flush to the top of the floor surface. Use three strips for a 4.6 in. thick concrete floor and one additional strip for every 1-1/2 in. of floor thickness. This represents a min. 32% overall compression.

   D. TOP FIRESTOP ANGLES – Stitch weld 3 in. × 3 in. × 1/4 in. angles to the grease duct (Item 1) on the top side of the floor/ceiling assembly along the entire perimeter of the duct. Use two half angle rings of the same size for round ducts. Weld the corners or ends of adjacent angles together.

   E. FIRESTOP COLLARS – Install two layers of 6 in. wide Ductz+ insulation (Item 2) collars around the insulated duct both at the topside and underside of the concrete floor/ceiling assembly. Use min. 3 in. overlaps at the collar ends. Secure the bottom collars with one 1/2 in. wide, 0.015 in. thick, stainless steel or carbon steel band (Item 4). Secure the top collars with aluminum foil tape.

EFS/BI 120-01

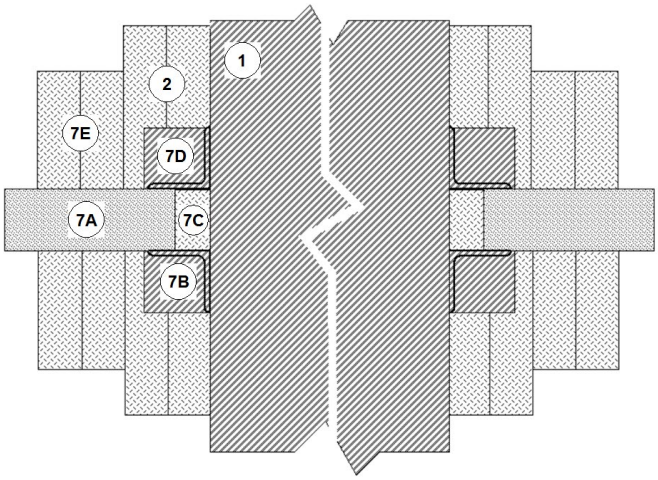

Figure 11: Floor/Ceiling Firestop

8. **WALL PENETRATION FIRESTOP:** When required to penetrate a fire-rated wall assembly, install the firestop system described in Items 8A to 8D (Reference Figure 12).

   A. WALL ASSEMBLY – Penetrate a min. 2 hr. fire-rated, solid concrete wall assembly made from reinforced lightweight or normal weight (100-150-pcf or 1600-2400 kg/m^3) concrete, or a min. 2 hr fire-rated, concrete masonry unit wall; use wall assemblies having a min. thickness of 4.6 in. Create a rectangular or round opening in the wall assembly so that the opening width or diameter is 4 in. greater than the outside dimension of the grease duct (Item 1). Use a rectangular hole for rectangular ducts and a round hole for round ducts. Use solid block to frame the opening or apply concrete mortar to create a solid opening perimeter. Position the grease duct (Item 1) concentrically or eccentrically in the opening so that the annular space is min. 1-1/2 in. to max. 2-1/2 in.

   B. FIRESTOP ANGLES – Stitch weld 3 in. × 3 in. × 1/4 in. angles to the grease duct (Item 1) on both sides of the wall assembly along the entire perimeter of the duct. Use two half angle rings of the same size for round ducts. Weld the corners or ends of adjacent angles together. Install the firestop angles on one side, then install the firestop angles on the other side after the packing material (Item 8C) is installed.

   C. PACKING MATERIAL – Fill the annular space between the prefabricated grease duct (Item 1) and the wall assembly (Item 8A) with un-encapsulated Ductz+ core insulation (Item 2). For each side of the duct, cut multiple strips of insulation a length 1 in. longer than the void space to be filled and 1/4 in. wider than the width of the annual space. Insert the strips into the annular space, one behind the other, and pressed flat against the 3 in. × 3 in. × 1/4 in. bottom firestop angles (Item 8B) located at the opposite side of the wall assembly and flush to the wall surface. Use three strips for a 4.6 in. thick wall and one additional strip for

EFS/BI 120-01 (13 OF 13)

every 1-1/2 in. of floor thickness. This represents a min. 32% overall compression.

D. FIRESTOP COLLARS – Install two layers of 6 in. wide Ductz+ insulation (Item 2) collars around the insulated duct on both sides of the wall assembly. Use min. 3 in. overlaps at the collar ends. Secure each set of collars with one 1/2 in. wide, 0.015 in. thick, stainless steel or carbon steel band (Item 4).

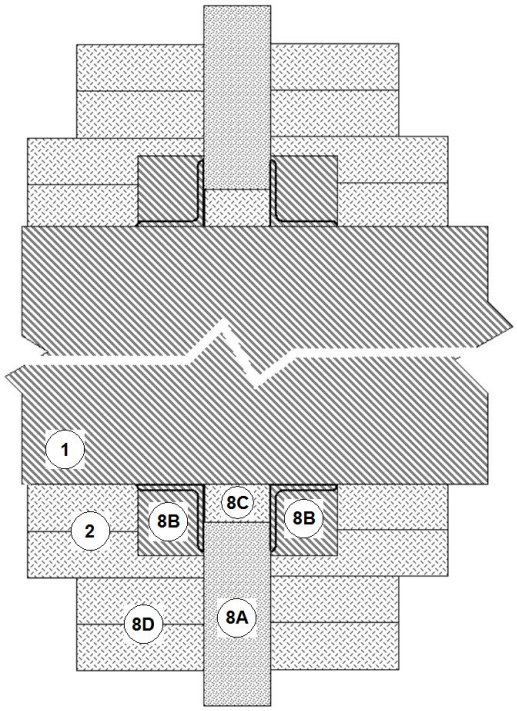

Figure 12. Wall Firestop

Consult the listing report on the Directory of Building Products (https://bpdirectory.intertek.com) for the edition of the standard(s) evaluated.

Compliance of the assembly described in this Design Listing with the referenced standard relies on verification that the assembly constructed in the field is consistent with that described herein. Intertek certified products may be verified by the approved Intertek label; other products must be verified by the Authority Having Jurisdiction as meeting the specifications stated herein.