Design No. GD 519 F

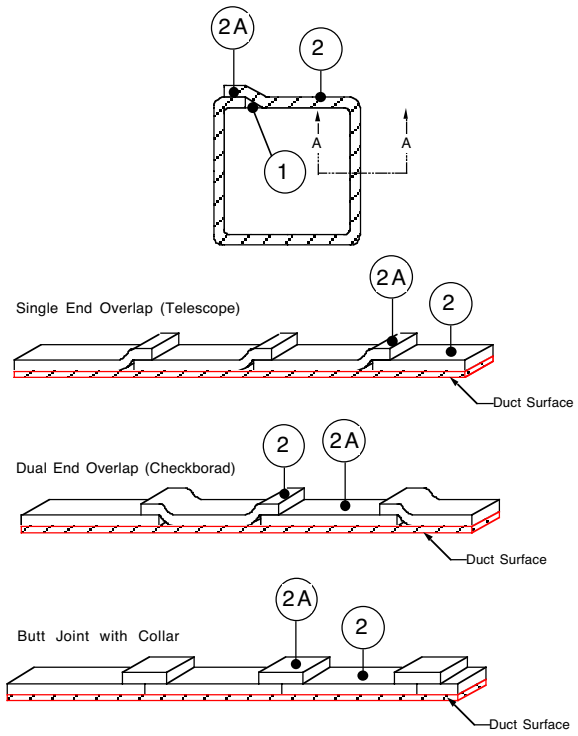
GREASE DUCT PROTECTION

UL 1978 (March 29, 1995)

Sections 12 Pass

Sections 13 Pass

ASTM E 119 2hr. Engulfment Test - Pass



1. GREASE DUCT: A continuously welded, liquidtight L-shaped duct system with horizontal and vertical shafts constructed of 16 GA sheet steel with outside dimensions of max. 24-in. high x 24-in. wide. When required, equip the duct with a field fabricated access door. Construct the duct using sections affixed to each other with seams. Reinforce the duct to IMC or NFPA 96 requirements designed to carry the weight of the grease duct assembly covered with insulation under a fire load equivalent to UL 1978 exposure and the ASTM E 119 time-temperature curve. Duct to be rigidly supported in accordance with IMC or NFPA 96 requirements and as specified in Item 5.

2. INSULATION: Use nom. 2-in. thick, 8-pcf blanket made of soluble amorphous wool fibers or calcium magnesium silicate fibers. Use blanket that is fully encapsulated or single faced. Wrap the steel duct with one layer of duct wrap (facing exposed) with 3-in. min. overlaps at all joints. Install insulation with zero clearance at the overlaps, with a nom. thickness of 4 in. at the overlap. Make the longitudinal overlaps of adjacent blankets (2A) using one of the following three methods as depicted in the drawings:

   A. 3-in. overlap telescoping method where each adjacent blanket has one edge exposed and one edge covered by the next blanket,

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B. 3-in. overlap checkerboard pattern where both edges of each alternating blanket are covered by each adjacent blanket whose edges are exposed, or

C. Butt splice with collar method where the blankets are butted together and a 6-in. wide collar of blanket is centered over the butt splice overlapping each adjacent blanket 3-in..

D. Seal all joints and exposed fiber with min. 4-in. wide, pressure-sensitive aluminum foil tape. Secure the outer layer with stainless steel banding or pins.

Reference Product Section of this Directory for more details.

Listed Manufacturer:

Johns Manville Corporation --

Applied Fireproofing

Mineral Fiber Fireproofing

Firetemp® Wrap

3. STRAPPING AND PINS: (Not Shown) Use one of the following methods to secure the insulation (2). Method 1 - Weld min. 12 GA, minimum. 6-in. long, copper-coated steel insulation pins to the duct. Locate pins at all blanket overlaps and meet the following requirements. Side of duct: Place pins max. 6-in. from the edges of the duct and spaced in rows a max. 12-in. O.C. Repeat rows every 9-1/2 in. When required, adjust pin location to ensure that all overlaps are pinned and centered within the overlap, (approximately 1-1/2 in. from the end of a wrap). Top and bottom of duct: Place pins 1-1/2 (1/2 in. from the edge of the duct and spaced in rows a max. 12-in. O.C. Repeat rows every 9-1/2 in. When required, adjust pin location to ensure that all overlaps are pinned and centered within the overlap, (approximately 1-1/2 in. from the end of a wrap). Transitions: At changes in directions, such as going from horizontal to vertical, locate pins to facilitate the attachment of the blanket to the duct. Locate pins 1-1/2 to 2 in. from a duct edge and spaced in rows or spans a max. 9-1/2 in. Locate pins to attach blanket at overlaps. Secure blanket to pins with1-1/2 in. square or round galvanized steel speed clips. Turn down or cut off insulation pins that extend beyond the outer blanket wrap layer. Method 2 - Place stainless steel bands (min. 1/2-in. wide, nom. 0.015-in. thick) over joints and centered around the wrap. Locate one band 1-1/2 in. from the edge of an overlap joint. Locate the second band mid point between the overlapped joints, approx. 10 in. To provide adequate support, place pins on the bottom of the duct and on the largest side of a vertical duct. Place pins in rows across the duct a min. of 6 in. from the edge and spaced max. 12 in. O.C. Repeat rows of pins every 9-1/2 in. At changes in directions, such as going from horizontal to vertical, locate pins to facilitate the attachment of the blanket to the duct. Locate pins 1-1/2 to 2 in. from a duct edge and spaced in rows or spans max. 9-1/2 in. O.C. Locate pins to attach blanket at overlaps, which cannot be readily banded. Secure blanket to pins with1-1/2 in. square or round galvanized steel speed clips. Turn down or cut off insulation pins that extend beyond the outer blanket wrap layer.

4. ACCESS DOOR: (Not shown) When required, mark and cut a clean-out access opening into the duct at mid-height along the horizontal section of the duct after the duct is insulated. Cut a 12 x 12- in. opening in the Firetemp® Wrap system. Cut a 10 x 10 in. opening into the side of the duct so that a 1-in. clearance in maintained around the perimeter of the opening and the Firetemp® Wrap system. Weld four 4 x 1/4-in. all-thread rods to the duct, one at each corner of the duct so that they are 11-in O.C. Cut a 13 x13-in. 16 GA plate to be used as a door. Drill holes in the door to match the rod pattern and seal the duct by overlapping the opening by 1-1/2-in. on all sides. Weld four 5-in long, 12 GA copper-coated steel insulation pins to the access door corners so that the pins are 9-in. O.C. Apply two layers of insulation (2) over the access door. Cut the first layer into a 13 x 13-in. square and install it over the pins and covering the door. Cut the second layer into a 15 x 15-in. square and install it over the pins and covering the first layer so that a 1-in. overlap exists. Secure blanket to pins with1-1/2 in. square or round galvanized steel speed clips. Turn down or cut off insulation pins that extend beyond the outer blanket wrap layer. Secure the access door assembly by placing washers and wing nuts over the threaded rod.

5. SUPPORTS: (Not shown) After the installation of the insulation system is complete, add a typical trapeze support system. Center insulated duct on trapeze hangers so

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that min. 1-in space exists between insulated duct and rods. Support hanger systems do not need to be wrapped. Attach threaded rods through concrete ceiling and secure using appropriate size washers and nuts or secure threaded rods using appropriate size steel drop in expansion type masonry anchors. Extend trapeze support at least 2-in. on each side of insulated duct and rods. When supporting smaller ducts, shorter length angles are permitted as long as other requirements are met. Options: (1) Horizontal supports a max. 96-in. O.C., starting at the center of the vertical rise portion. Use min. 1/2-in. all-thread rod bolted to 2 x 2 x 1/4-in. steel angle to assemble the trapeze supports. Space the all-thread rods a max. 12 in. away from the edge of the insulated duct with 1/2 in. clearance holes drilled 2 in. from each end. (2) Space supports O.C. so that the load does not exceed 350 lbs between supports. Trapeze supports use min. 5/8-in. all-thread rods and secured with 5/8-in hex nuts to min. 2-1/2 x 2-1/2 x 1/4-in. steel angle for an insulated duct span of max. 64 in. (3) Space supports O.C. so that the load does not exceed 240 lbs between supports. Trapeze supports use min. 1/2-in. all-thread rods and secured with 1/2-in hex nuts to min. 2 x 2 x 1/4-in. steel angles a maximum insulated duct span of max. 49 in. (4) Space supports O.C. so that the load does not exceed 220 lbs between supports. Trapeze supports use min. 1/2-in. all-thread rods and secured with 1/2-in hex nuts to min. 2 x 2 x 1/4-in. steel angles a max. 55 in. long. Rods spaced max. 51-in O.C. with max. 2 in. from the end of the steel angle. (5) Space supports O.C. so that the load does not exceed 250 lbs between supports. Trapeze supports use min. 5/8-in. all-thread rods and secured with 5/8-in hex nuts to min. 2-1/2 x 2-1/2 x 1/4-in. steel angles a max. 70 in. long. Rods spaced max. 66-in O.C. with max. 2 in. from the end of the steel angle.

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