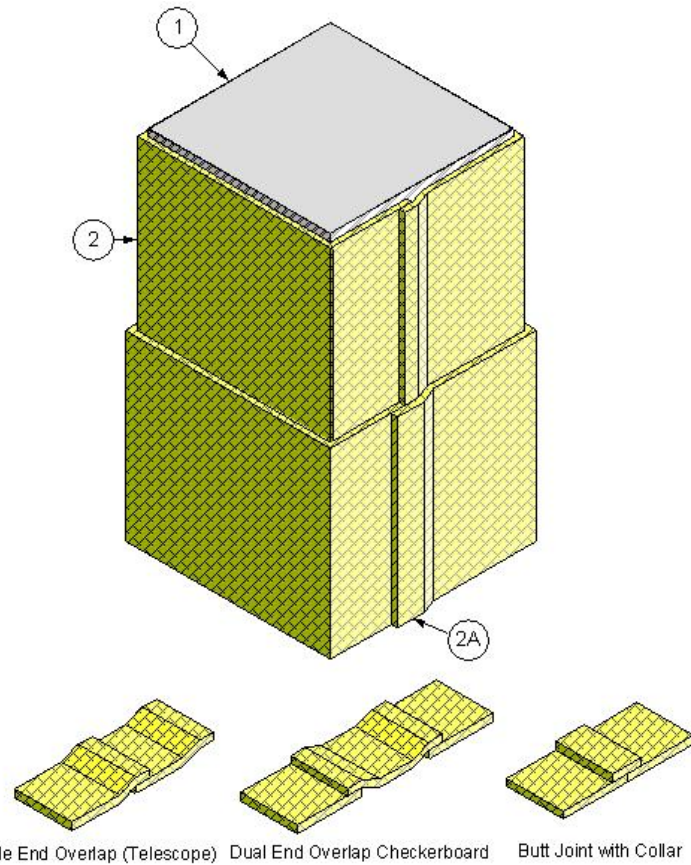

Design No. UNI/FRD 120-15
OPL Design VAD 560F
VENTILATION AIR DUCT
Unifrax I LLC
FyreWrap® Duct Insulations
ISO 6944 (2008) Type A Duct
Stability – 2 hr
Insulation – 2 hr
Integrity – 2 hr



1. VENTILATION DUCT: An airtight duct system with vertical duct sections constructed of min. 26 GA (0.0179 in.) plain sheet steel with a max. 1296-in. area and a max. 54-in. width (max. 24-in. high x max. 54-in. wide). When required, equip the duct with a field fabricated access door. Construct the duct using sections affixed to each other with seams.

under pressure and to carry the weight of the ventilation duct assembly covered with insulation under a fire load equivalent to ISO 834 time-temperature curve.

Protect the annular space around the duct passing through a fire rated barrier with the penetration firestop system as detailed in Design FS 599 F.

Reinforce the duct to IMC or SMACNA requirements designed for a 2-in. WC

2. CERTIFIED MANUFACTURER: Unifrax I LLC --
CERTIFIED PRODUCT: Insulation Blanket (Soluble Fiber)
MODEL: FyreWrap® Elite™ 1.5 Duct Insulation, 6pcf
MODEL: FyreWrap® EZ 1.5 Duct Insulation, 6pcf
MODEL: FyreWrap® 1.5 Duct Insulation, 8pcf
MODEL: FyreWrap® MAX 2.0 Duct Insulation, 8pcf

INSULATION: Use nom. 1-1/2-in. thick, 6-pcf (FyreWrap® Elite™ 1.5 or FyreWrap® EZ 1.5), 1-1/2-in. thick, 8-pcf (FyreWrap® 1.5), or nom. 2 in. 8pcf (FyreWrap® MAX 2.0) blanket made of soluble amorphous wool fibers or calcium magnesium silica fibers. Wrap the steel duct with one layer of duct wrap. Use blanket that is fully encapsulated or single faced. Expose the faced side of fully encapsulated or single faced blanket to view on outer layer. All joints were overlapped a min of 3 in. (Item 2A). Completely cover and seal all cut edges with pressure-sensitive aluminum foil tape. Reference Product Section of the Directory for more details.

3. FASTENERS: (Not Shown) Use one of the following methods to secure the insulation (Item 2).

Method 1 – For ventilation ducts (Item 1) greater than 24 x 48 in. but equal to or less than 52 x 52 in. Weld min. 12 GA, minimum. 6-in. long, pre-welded or cup head steel insulation pins to the ventilation duct (Item 1). Locate Pins at all insulation (Item 2) overlaps and meet the following requirements. All sides of ventilation duct (Item 1): Place pins max. 6-in. from the edges of the ventilation duct (Item 1) and spaced in rows a max. 8-in. O.C. Repeat rows ever 8 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 insulation (Item 2) to the ventilation duct (Item 1). Secure blanket to pins with 2-1/2 in. square or round galvanized steel speed clips or cup head pins. Turn down or cut off insulation pins that extend beyond the outer blanket wrap layer.

Method 2 – For ventilation ducts (Item 1) equal to or less than 24 x 24 in. Place carbon (min. 1/2-in. wide, nom. 0.020-in. thick) or stainless steel bands (min. 1/2-in. wide, nom. 0.015-in thick) over joints and centered around the insulation (Item 2). Locate and center one band approximately 1-1/2 in. from the edge of each overlap joint. Locate the second band mid point between the overlapped joints, approx. 10-1/2 in. To provide adequate support at the transition, place cup head pins through the insulation (Item 2) on the back of the ventilation duct (Item 1). Pins are not required when this banding technique is used.

Method 3 – For ventilation ducts (Item 1) up to 24 in. x 48 in. not addressed by Methods 1 or 2, weld min. 12 GA, min. 5-in. long pre-welded or cup head stainless steel insulation pins. Locate pins at all insulation (Item 2) overlaps and meet the following requirements. No Pins are required on the sides or on the top. On bottom of ventilation duct (Item 1), space pins in rows max. 10-1/2-in. apart and the pins in the rows are max. 12-in. O.C. Locate pins max. 12 in. from the edges of the ventilation duct (Item 1). All overlaps are a min. 3 in. for overlaps going around the ventilation duct (Item 1) and for overlaps following the length of the ventilation duct (Item 1). Locate pins in the middle of the overlap. Secure insulation (Item 2) to pins with 1-1/2 in. x 1-1/2 in. square, 1-1/2 in. diameter galvanized steel speed clips, or use cup head style pins. Turn down or cut off insulation pins that extend beyond the outer blanket wrap layer. When needed, use filament tape as

a temporary holding method for the insulation prior to banding to ease installation. Use min. 1/2-in. wide nom. 0.020-in. thick carbon steel bands or min. 1/2-in wide nom. 0.015-in. thick stainless steel bands. Place bands max. 1.5 in. from each blanket edge and max. 10-1/2-in O.C. Tension the banding material to hold the insulation (Item 2) in place without causing any cutting or damage to the insulation (Item 2) or ventilation duct (Item 1).

Method 4 - Prior to installing the insulation blanket, weld with 5 in. long, 12 GA. copper coated mild steel impaling pins to duct. To provide adequate support, place pins on the vertical sides of the duct (Item 1). Place pins in rows and columns across the ventilation duct (Item 1) a maximum of 3 in. from the vertical edges. Space the vertical columns of pins a max. 12 in. O.C. Space horizontal rows of pins a max. 10-1/2 in. O.C. At changes in directions, such as going from horizontal to vertical, locate pins to facilitate attachment of insulation blanket (Item 2) to duct. Pins shall be located at all overlaps to secure both pieces of the insulation blanket. Locate additional pins, if necessary, to attach insulation blanket at overlaps. After placing insulation blanket (Item 2) over pins, secure blanket to pins with 2-1/2 in. square or round galvanized steel speed clips. Turn down or cut off insulation blanket pins that extend beyond the outer blanket wrap layer.

4. **SUPPORTS:** (Not Shown) After the installation of the insulation blanket (Item 2) is complete, add a typical support system as required by IMC or SMACNA requirements that will support the load of the ventilation duct and the additional weight of the insulation system under a fire load.