Design No. VAD 541 F

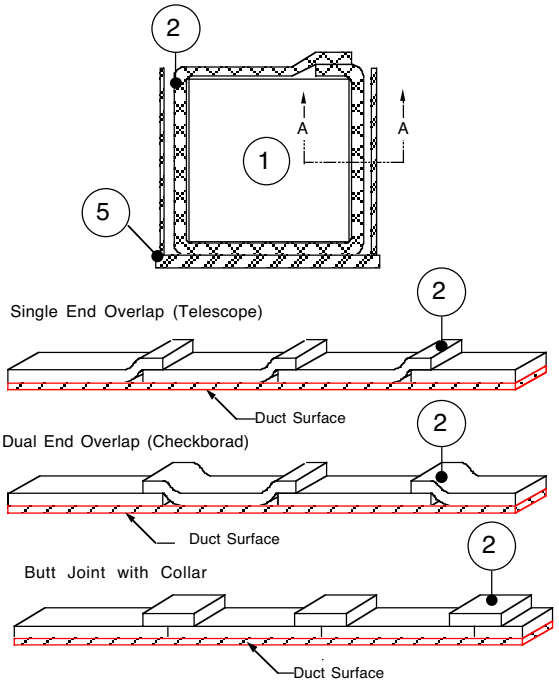
VENTILATION DUCT PROTECTION

Type - Duct A

Stability - 2 hr

Insulation - 2 hr

Integrity - 2 hr



1. VENTILATION DUCT: An airtight L-shaped duct system with both horizontal and vertical shafts constructed of min. 20 GA sheet steel. The max. acceptable width to height ratio is 4:1. Reinforce the duct to SMACNA requirements for a 1/2-in. WC underpressure and to carry the weight of the ventilation duct assembly covered with insulation. All duct dimensions are width by height. The reinforcement must be covered by the FireMaster® FastWrap+® system. For duct assemblies up to 40 x 10-in., reinforce the duct with either (1) a minimum 1-1/2 x 1-1/2 x 1/8-in steel angle spaced a max. of 49-in. o. c. or (2) SMACNA requirements for a 1/2-in. WC underpressure and to carry the weight of the ventilation duct assembly covered with insulation, whichever is stronger. For duct assemblies up to 84 x 21-in. but not less than 40 x 10-in., reinforce the duct with either (1) a min. 2 x 2 x 3/16-in. steel angle spaced a max. of 49-in. o.c. or (2) SMACNA requirements for a 1/2-in. WC underpressure and to carry the weight of the ventilation duct assembly covered with insulation, whichever is stronger. For duct assemblies greater than 84 x 21-inches, reinforce the duct with either (1) steel angles sufficient to support the total weight of the duct assembly when it is covered by the FireMaster® FastWrap+® system. or (2) SMACNA requirements for a 1/2-in. WC underpressure and to carry the weight of the ventilation duct assembly covered with insulation, whichever is stronger. The reinforcement spacing can not be greater than 49-inches on center and the minimum steel

angle dimensions can not be less than 2 x 2 x 3/16 inches.

2. INSULATION: Cover the ventilation duct with a single layer of min. 2-in. thick by min. 24-in. wide FireMaster® FastWrap+® with a nom. density of 8-pcf. Use blanket fully encapsulated with foil scrim facing. FireMaster® FastWrap+® system has an overlap nom. thickness of 4 in. and the nom. thickness between overlaps being 2 in when using a telescoping or checker board pattern. The FireMaster® FastWrap+® system has an overlap nom. thickness of 3.5 in. when using a butt splice with collar method where the collar is 1.5-in. thick. All cut edges are to be sealed with a minimum 3-in. wide, pressure sensitive, aluminum foil tape. The insulation used was a single layer system. FireMaster® FastWrap+® single layer system shall be cut to a length sufficient to wrap completely around the perimeter of the duct, plus provide a min. overlap of 3 in. onto its starting end. The overlap of adjacent blankets can be accomplished by one of the following three methods: (1) a 3-in. overlap telescoping method where each adjacent blanket has one edge exposed and one edge covered by the next blanket, (2) a 3-in. overlap checkerboard pattern where both edges of each alternating blanket are covered by each adjacent blanket whose edges are exposed, or (3) a 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.

Listed Manufacturer:

Thermal Ceramics Inc. --

Applied Fireproofing

Insulation Blanket

FireMaster® FastWrap+®

3. FASTENERS: Use either pins or banding or both. Pinning Option: Weld min. 10 GA, min. 6 in. long, steel insulation pins to the duct. Pins shall be located at all blanket overlaps and meet the following requirements. Space pins in rows max. 8-in. apart. The pins in the rows are max. 23-1/2-inch o.c. All overlaps are a minimum of 3-in. for circumferential overlaps going around the duct and for longitudinal overlaps following the length of the duct. An insulation pin is to be located in the middle of the longitudinal overlap and center spaced between the pins. The longitudinal overlaps are to be alternated from side to side. The blanket is locked into place over the pins with minimum 1.5 in. x 1.5-in. square, or 1.5-in. diameter round, galvanized steel, speed clips or cup head pins. Insulation pins that extend beyond the outer blanket wrap layer shall be turned down to eliminate sharp edges or the excess length cut off.

4. BANDING: Banding Option: Use min. 1/2-in. wide stainless or 3/4-in. carbon steel bands, which are nominally 0.015-in. thick, and secured with minimum 1-in. long stainless steel crimp clamps. The use of filament tape as a temporary hold for the insulation prior to banding to ease installation is permitted. Place the bands a max. 1.5 in. from each blanket edge and a max. of 10.5 in. o.c.. Tension the banding material to hold the FireMaster® FastWrap+® in place without causing any cutting or damage to the blanket or duct.

5. SUPPORTS: Support the insulated duct using one of the following methods. Use a minimum 1-1/2 x 1-1/2 x 3/16-in. steel angle as the trapeze cross-member supports that are connected to minimum 3/8-in. all-thread steel rods, which do not have to be insulated. The rods can be placed against the insulation or have a max. clearance from the insulation of 6-in. Other acceptable support methods are a P-2000 Unistrut (1-5/8 in. x 1-5/8 in. x .060 in.) or a SMACNA design equivalent to the tested support. When the maximum outside dimensions of the duct assembly are greater than 84 x 21-in., support the insulated duct using steel angle trapeze cross-member supports connected to all-thread steel rods. The steel angles and rods, which do not have to be insulated, must be sufficient to support the total weight of the duct assembly when it is covered by the FireMaster® FastWrap+® system. The rods can be placed against the insulation or have a maximum clearance from the insulation of 6-in. Other acceptable support methods are Unistrut members or a SMACNA design equivalent to the steel angle trapeze cross-member supports connected to all-thread steel rods.