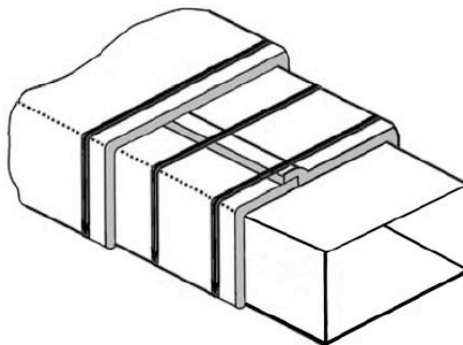


QUICKWRAP™ VENTILATION DUCT PROTECTION

Installation Instructions

EWC BI 120-02



(Fire Resistance Ratings) Stability, Integrity and Insulation
0 to 2 hrs

Ventilation Air Duct System
For both 1 & 2 hr fire protection per ISO-6944 Duct 'A' standard

Rated for External Fire Conditions



VENTILATION DUCT

- An airtight duct system with vertical duct sections constructed of min. # 26 gauge (0.0179") plain sheet steel with a max. 1296 in² area and a max. 54" width
- When required, equip the ventilation duct with a field fabricated access door.
- Construct the ventilation duct using sections affixed to each other with seams.
- Reinforce the ventilation duct to IMC or SMACNA requirements designed for a 2" WC 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.
- Rigidly support the ventilation duct in accordance with IMC or SMACNA requirements and as specified in SUPPORTS.
- Protect the annular space around the ventilation duct passing through a fire rated barrier with the penetration firestop system as detailed in EWC-PHV/120-01.

INSULATION

- Use one layer min. 1 3/4" thick, min. 8 lb/ft³ blanket made of calcium magnesium silica fibers.
- Wrap the steel ventilation duct with one layer of fully encapsulated insulation.
- Overlap all joints a min of 3".
- Completely cover and seal all cut edges with pressure-sensitive aluminum foil tape.

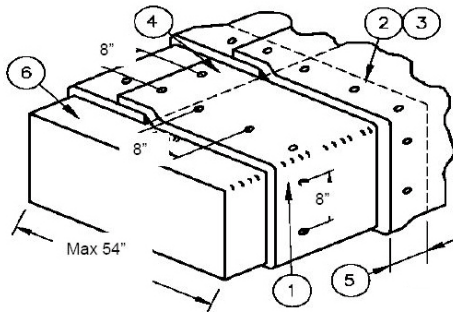
FASTENERS

Use one of the following methods to secure the insulation.

METHOD 1

- For ventilation ducts equal to or less than 24" x 54" (1296 in²).
- Weld min #12 gauge, min. 6" long, pre-welded pins to the ventilation duct or use Cup-Head Weldpins®.
- Locate pins at all insulation overlaps.
- Place insulation pins on all sides of ventilation duct as described in the following points:
 - Place pins max. 6" from the edges of the ventilation duct and spaced in rows at max. 8" O.C.
 - Repeat rows every 8".
 - When required, adjust pin location to ensure that all overlaps are pinned and pins are centered within the overlap (approximately 1 1/2" from the end of a wrap).
- At duct transitions (changes in direction) locate pins to facilitate the attachment of the insulation to the ventilation duct using 2 1/2" square, 1 1/2" round galvanized steel speed clips or Cup-Head Weldpins®.
- Turn down or cut off insulation pins that extend beyond the outer blanket wrap layer.

Figure 1: Method 1 - Pinning Only Detail



| | |
|---|---|
| 1 | Quickwrap™, one layer |
| 2 | Weld Pin – pre-welded or Cup-Head Weldpins® |
| 3 | Speed Clip |
| 4 | 3" Min. Perimeter Overlap |
| 5 | 3" Min. Longitudinal Overlap |
| 6 | Min. #26 gauge Vent. Duct |

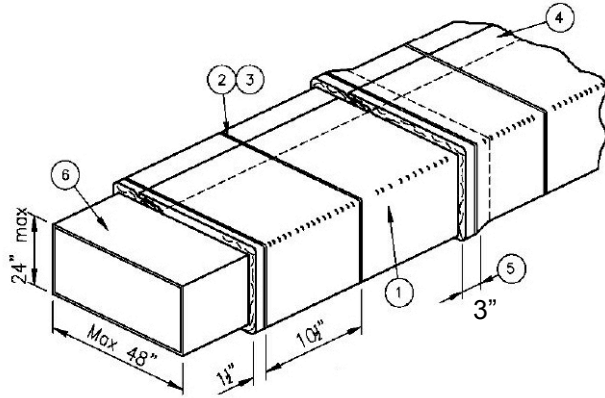
METHOD 2

- For ventilation ducts up to 24" x 48" (1152 in²)
- Weld min. # 12 gauge, min. 6" long, pre-welded insulations pins or use Cup-Head Weldpins®.
- Locate pins at all insulation overlaps (in middle of overlap).
- No pins are required on the sides or on the top of ventilation duct but pins are required on bottom of horizontal and backside of vertical ventilation ducts
- Place pins on max. 12" rows and on max. 10 1/2" centers.

- Locate pins max. 12" from edge(s) of the ventilation duct
- If using pre-welded insulation pins, impale wrap over the pins with 2 1/2" square, 1 1/2" round galvanized steel speed clips (washers), or use Cup-Head Weldpins®.
- Turn down or cut off exposed ends of pins to eliminate safety hazards.
- Locate stainless steel (min. 1/2" wide nom. 0.015" thick) bands 1 1/2" from the edge of each overlap joint.
- Locate an additional band(s) between overlaps, spaced 10 1/2" on center.
- All overlaps are a min. 3" going around the ventilation duct and for overlaps following the length of the ventilation duct.
- When needed, use filament tape as a temporary holding method for the insulation prior to banding to ease installation.
- Tension the banding material to hold the insulation in place without causing any cutting or damage to the insulation or ventilation duct.

Figure 1: Method 2 – Banding & Pins Detail

- Duct Width up to 24" x 48".
- Pins required on bottom/backside only, spaced max. 12" rows and on 10 1/2" centers (not shown)



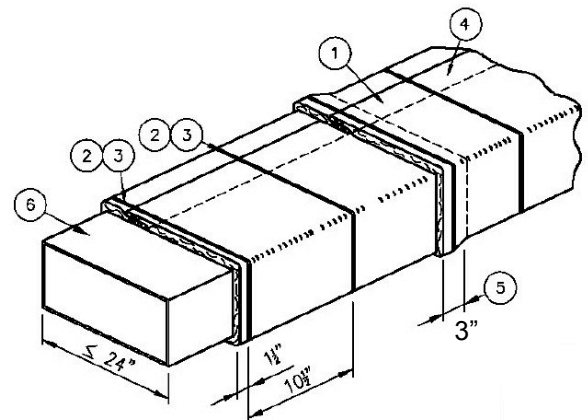
| | |
|---|---|
| 1 | Quickwrap™, one layer |
| 2 | Filament Tape (temporary hold) |
| 3 | Stainless Steel Banding Straps (permanent hold) |
| 4 | 3" Min. Perimeter Overlap |
| 5 | 3" Min. Longitudinal Overlap |
| 6 | Min. #26 gauge Vent. Duct |

METHOD 3

- For ventilation ducts equal to or less than 24" x 24" (576 in²).
- Place carbon (min 1/2" wide, nom. 0.020" thick) or stainless steel bands (min. 1/2" wide, nom 0.015" thick) over joints and centered around the insulation section.
- Locate and center one band approximately 1 1/2" from the edge of each overlap joint.
- Locate the second band mid point between the overlapped joints, approx. 10 1/2".

- To provide adequate support at the transition, place Cup-Head Weldpins® through the insulation on the back of the ventilation duct.
- Pins are not required when this banding technique is used.

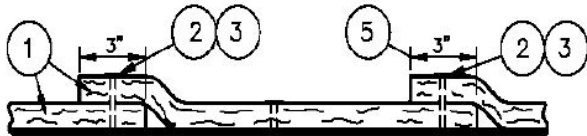
Figure 1: Method 3 – Banding Only Detail



| | |
|---|---|
| 1 | Quickwrap™, one layer |
| 2 | Filament Tape (temporary hold) |
| 3 | Stainless Steel Banding Straps (permanent hold) |
| 4 | 3" Min. Perimeter Overlap |
| 5 | 3" Min. Longitudinal Overlap |
| 6 | Min. #26 gauge Vent. Duct |

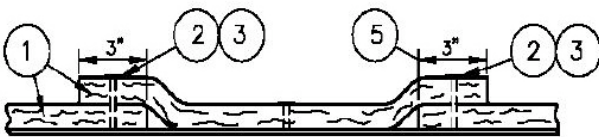
Figures 2, 3 & 4: Method 2 - Banding Only Quickwrap™ Overlap Methods

Figure 2: Method 3 - Telescope Overlap Wrap Technique



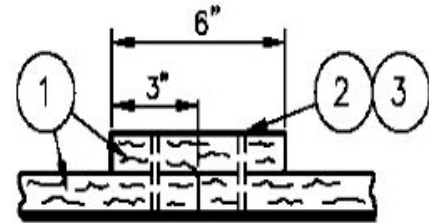
- Each adjacent blanket has one edge exposed and one edge covered by the next blanket.

Figure 3: Method 3 - Checkerboard Overlap Wrap Technique



- A 3" overlap pattern is used with both edges on each alternating blanket covered by each adjacent blanket whose edges are exposed.
- The overlap joints in alternate layers of blanket resemble a checkerboard pattern in the completed installation.

Figure 4: Method 3 - Butt Splice with Collar Wrap Technique



- This wrap technique permits installation with the blanket edges butted together and a 6" wide collar of blanket that is centered over the butt splice, overlapping each adjacent blanket 3".

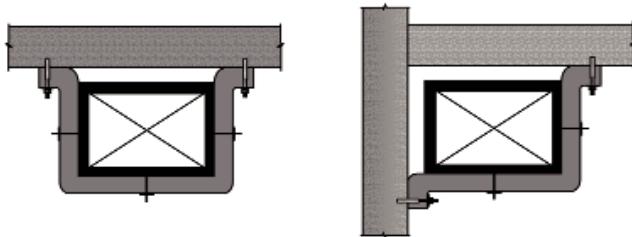
ATTACHMENT METHODS SUMMARY CHART

| DUCT DIMENSIONS (Area) | METHOD 1 PINS ONLY (All FOUR Sides) | METHOD 2 BANDING & PINS | METHOD 3 BANDING ONLY |
|--|---|----------------------------|--------------------------|
| Ducts up to 24" x 54" (up to 1296 in ²) | * | | |
| Ducts up to 24" x 48" (up to 1152 in ²) | * | * | |
| Ducts up to 24" x 24" (up to 576 in ²) | * | * | * |

SUPPORTS

- After the installation of the insulation 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 under a fire load.

“2 or 3” Sided Pinning Only Method



INSTALLATION

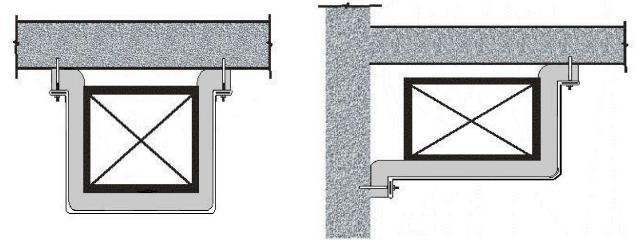
- Requires one layer of Quickwrap™.
- Duct to be located a maximum of 6” from the floor or wall assembly.

FASTENING

- Install Cup-Head Weldpins® or steel insulation pins on all sides of duct at max. 10 ½” centres – max. 6” pin-free space from edge of ductwork is allowed.
- Overlap Quickwrap™ over concrete by minimum of 3” and fasten using min 1 ¼” OD fender washers over a minimum ¼” diameter steel concrete anchor inserted a minimum of 1 ½” into concrete slab spaced a maximum of 8” apart.

“2 or 3” Sided Banding Method

INSTALLATION



- Requires one layer of Quickwrap™.
- Duct to be located a maximum of 6” from the floor or wall assembly.

FASTENING

- Quickwrap™ is held in place by banding the insulation around the duct approx. 1½” on both sides of the seam and in the centre of the wrap.
- Overlap Quickwrap™ over the concrete by a minimum of 3”.
- Anchor with a continuous length of min. 3/16” x 1 ½” wide steel flat bar over flared ends of the wrap material and fasten using min. 1 ¼” OD fender washers over a minimum ¼” diameter steel concrete anchors inserted a minimum of 1 ½” into the concrete slab spaced a maximum of 8” apart.
- Banding to be installed over the wrapped duct with ends looped around the steel flat bars, tightened and clipped as required.

NOTE: For “2 or 3” sided methods noted above, pins and/or bands are to be installed using Fastening Methods 1, 2, or 3 depending on duct size.