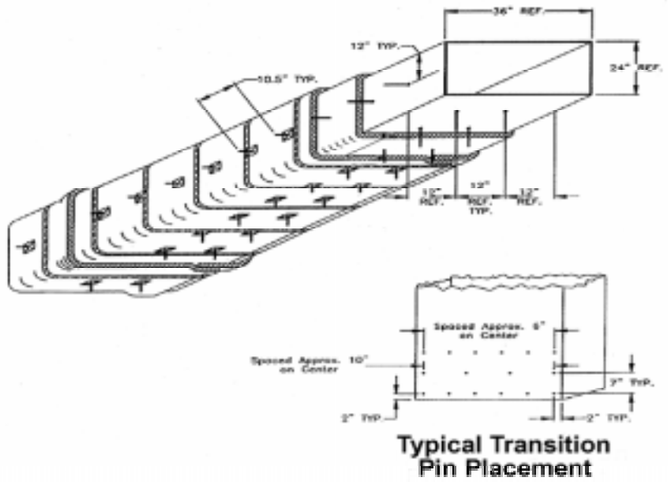
Pin Placement for Duct Dimensions Larger Than 24"

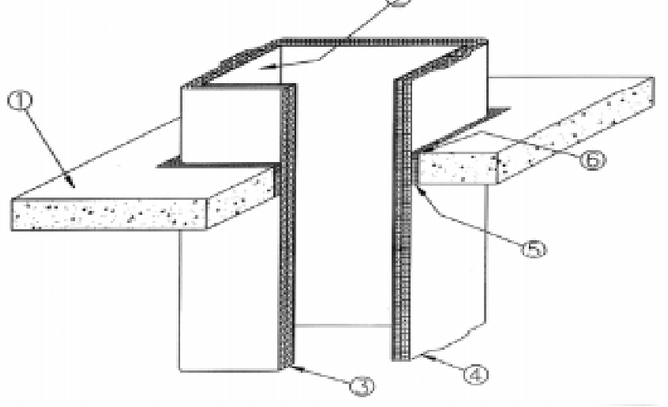


Typical Transition Pin Placement

Through-Penetration Firestop Seal:

For through-penetration fire stopping, pack the annular space between the Firestop Blanket™ and the opening edge with ceramic fiber to within 1" of the surface. Fill this area with Firestop Putty to a full thickness of no less than 1". Floor penetrations are firestopped on the floor surface, walls are firestopped on both sides.

Through-Penetration Firestop Seal (2 hour)



Item No.	Description
1	Floor Assembly
2	Steel Duct
3	Interior Layer of Firestop Blanket™
4	Exterior Layer of Firestop Blanket™
5	Bulk Ceramic Fiber
6	1 inch depth of Firestop Putty

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Great Lakes Textiles, Inc.

GLT Firestop Blanket™

Flexible Fireproofing of Grease and Air Ducts

Flexible Indoor/Outdoor Use • 1 and 2 Hour Rating
Protects Ducts with Zero Clearance • UL Standard 1978
Meets NFPA Standard 96 • UL Class UL263 (Listing #R15864) • BOCA

Product Description:

Firestop Blanket™ is made from high quality calcined Kaolin. The product is composed of long, high strength fibers needled into a tight blanket with superior handling properties. The blanket is available unfaced, faced with aluminum foil one or both sides or encapsulated with aluminum foil.

Use:

Designed to be directly applied over grease or air ducts and permit zero clearance to adjacent combustible materials. Firestop Blanket™ will also protect duct from external fire threat for two hours.

Technical Data:

ASTM E-84/UL723
- Flame Spread 0
- Smoke Developed 0

UL 1978 ..... 1 or 2 hrs.
ASTM E-814/UL1479 ..... 1 or 2 hrs.
ASTM C-518 ..... R of 4 @ 70°F
Usage Limits ..... From -300° to 2300°F
Melting Point ..... 3200°F
Density ..... 6 pcf

Supporting Test Data:

UL 723 (ASTM E-84) • UL 1978 • UL 263 (Listing #R15864)
Inchcape/Warnock Hersey Report No. 13343-764
NFPA 96 • BOCA Report No. 96-39 • ICBO Report No. 5549
SBCCI

FS5/07

Installation Guide for Firestop Blanket™

Grease and Air Duct: Zero clearance to combustibles and 2 hour rated duct enclosure

General:
This procedure conforms with the method utilized to satisfy UL1978 and NFPA96.

Scope:
Recommended installation procedure for Firestop Blanket™, bulk ceramic fiber and approved Firestop Putty.

Materials and Equipment:
The fireproof duct wrap, Firestop Blanket™ and bulk ceramic fiber will be supplied by Great Lakes Textiles, Inc. Approved accessory items may be provided by others. All materials required are as follows:

Firestop Blanket™, 1½" thick, 24" or 48" wide, 12½' or 25' in length. Selection of unfaced or faced blankets will be made by specifying authority.
Filament Tape 1" wide and **Aluminum Foil Tape** to seal cut ends of encapsulated blanket.
Metal Banding, ¾" x .015" carbon steel for zero clearance to combustibles or one (1) hour fire rating. T304 stainless steel is required for two (2) hour rated assemblies.
Hand held banding tool, crimper and seals.
Copper Coated Steel Pins, 10 gauge, minimum 4" in length and 1½" x 1½" galvanized speed washers.
Spot weld stud gun.
¼" All-thread Galvanized Steel Rods with corresponding nuts and washers to secure blanket to access door.
Firestop Putty
Bulk Ceramic Fiber

Delivery and Storage:
Product must be delivered in the original cartons that bear the name and product dimensions.

Installer:
Firestop Blanket™ shall be installed by a qualified contractor familiar with commercial/industrial thermal insulation materials and their application.

Installation:
Two (2) layers of Firestop Blanket™ will be installed with all joints of the first layer butt jointed and the joints of the second layer overlapped 3". The longitudinal and circumferential joints of the exterior layer must be staggered so that they will not be positioned directly over the same joints of the interior layer.

Lay blanket on a hard, flat surface and carefully stretch to its full dimension to eliminate waste when cutting.

Determine diameter of round duct and add 3" to allow for the thickness of the first layer of blanket. Calculate the circumference with this number and add an additional 3" to allow for the overlap.

Attach leading edge of blanket (perpendicular to duct) with filament tape. Wrap blanket around duct and secure with filament tape 1½" from each edge and 10½" on center in field of blanket. Pull blanket tight but do not stress.

On the second layer cut and place adjacent piece over-lapping the circumferential joint 3". Use filament tape to hold blanket in place until exterior layer and metal bands have been applied.

Place tape in same position from edge and in field of blanket as directed on the 1st blanket section. Job site conditions will determine if 1st and 2nd layers can be applied separately or all at one time. Measure blanket length for 2nd layer but take into consideration that you must now add an additional 3" to the diameter because of the additional thickness of the 2nd layer plus 3" for the overlap.

Begin installation of the exterior layer 10" back from the leading edge of the interior layer. Cut and install a section of blanket to fit the set back area as described in installation of the exterior layer. Use filament tape to hold blankets in place until metal bands are installed.

Repeat installation sequence that applied to the 1st layer, but additionally overlapping all joints in both directions by 3". Stagger position of longitudinal joint of exterior layer by off-setting approximately 10" from longitudinal joint of interior layer.

Installation Guide for Firestop Blanket™

Installation Guide for Firestop™ Blanket Continued From Page 2.

Position metal bands 1½" from each edge and 10½" on center in field of blanket. Pull bands to insure a tight fit but do not cut facing or deform blanket or duct. Crimp bands closed with clips and cut excess banding tight to clip.

To install Firestop Blanket™ to rectangular duct you must modify the method of calculating the blanket length and add the installation of insulation pins. When calculating the length of blanket required to wrap a rectangular duct add 4" for every corner. This allows for the additional material and thickness needed to turn a corner.

If the duct is 24" or greater, insulation pins must be placed 12" on center and 10½" apart. This will prevent the blanket from sagging and provide the required support on vertical runs.

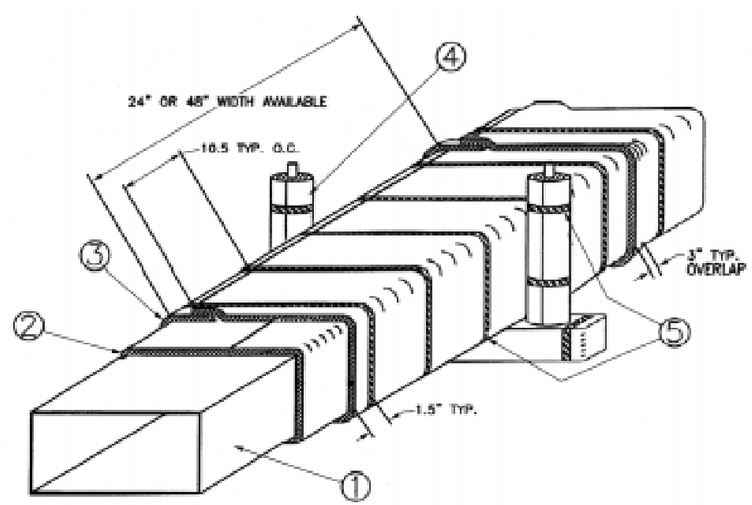
There are several methods to install blanket over access or cleanout doors. One recommendation is to spot weld all thread rods at the corners of the reinforced frame and cover with steel sleeves. This will allow for easy removal.

Attach four copper coated steel insulation pins to surface of access door, 1" in from each corner and 12" on center if space allows. Cut and fit the interior layer of Firestop Blanket™ 1½" larger than the door opening with a shiplap edge to fit the existing interior layer already applied to duct. Cut and fit the 2nd layer 1½" larger than the 1st layer, also with a shiplap edge. Cut the final layer 1" thick and 1½" larger than the 2nd layer.

Secure to insulation pins with 1½" speed washers. Place washers over steel sleeves and secure with ¼" nuts. Do not place metal bands over this area. Clearly label location of access door.

For zero clearance compliance it is necessary to wrap duct support hangers. For 1 and 2 hour rated duct enclosure the vertical and horizontal members must be wrapped with 1 layer of Firestop Blanket™ and held in place with stainless steel banding or stainless steel hose clamps. If, however, the duct enclosure is intended to withstand internal fires only, the support hangers do not have to be wrapped with Firestop Blanket™.

General Layer Arrangement



Item No.	Description
1	Steel Duct
2	Interior Layer of Firestop Blanket™ - longitudinal & circumferential butt joints
3	Exterior Layer of Firestop Blanket™ - longitudinal & circumferential joints with 3" overlap
4	Single Layer of Firestop Blanket™ on Duct Supports (1 or 2 hr. System)
5	Stainless Steel or Carbon Steel Bands (2 or 1 hr. System)