



Contractor Submittal Sheet

Contractor: _____

Project: _____

FyreWrap® Elite® 1.5 Duct Insulation Single-Layer Fire Rated* Boiler Flue/Generator Exhaust

Product

Unifrax's FyreWrap® Elite® 1.5 Duct Insulation is a high temperature insulation blanket designed to provide a flexible enclosure for generator exhausts and boiler flues requiring a two hour fire rating. FyreWrap Elite 1.5 provides a tested, fire resistive enclosure acceptable as an alternative to a fire rated shaft.

Product Description

FyreWrap Elite 1.5 incorporates Insulfrax® Thermal Insulation as its core material. Insulfrax is a high temperature insulation made from a calcia, magnesia, silica chemistry designed to enhance biosolubility. It provides excellent insulation in a noncombustible blanket product form. The core insulation blanket is completely encapsulated in a fiberglass reinforced aluminum foil scrim covering. This scrim provides additional handling strength as well as protection from grease and moisture absorption and tearing.

Product Properties

Product	Unit/Box	Size	WT
Elite 1.5	1 roll	1 ½" x 24" x 25'	37.5 lbs
Elite 1.5	1 roll	1 ½" x 48" x 25'	75 lbs
Elite 1.5 collar	4 rolls	1 ½" x 6" x 25'	37.5 lbs

Product Performance

Test Criteria	Description
ISO 6944	2-Hour Rated Ventilation Duct: Shaft Alternative
ASTM E2816	
ASTM E814	Firestop; 2-hour F and T Ratings
ASTM E-84/UL 723	Encapsulated: Flame <25, Smoke <50 Unfaced: Flame = 0, Smoke = 0
ASTM C518	R-Value: 4.8 per inch at 75° F Elite 1.5 (1-1/2") = 7.2
EN 1094	Temperature Grade 2300°F
	Recommended Operating Temperature 2012°F
ASTM E119	2-Hour Engulfment

***Note – A single layer of FyreWrap Elite is required for both one and two hour fire ratings. Additional insulation is required to provide thermal protection from high internal flue/exhaust temperatures. The use of a two-layer FyreWrap Elite 1.5 system will provide equivalent protection, but allows for the installation of butt joints on both layers. Failure to comply with the outlined system installation instructions in this submittal may lead to the deterioration and off gassing of the foil encapsulation when placed directly on a hot surface.**

Form C-1534, Effective 03/19

Green Building contribution:

Manufacturing plant location: New Carlisle, IN.
Microbial Resistant, per ASTM D6329-03

Product Listings

Listing Agency	Listing Number
Intertek Testing Services (formerly OPL)	Duct: UNI/FRD 120-15
UL	HNLJ.V-34 HNLJ.V-36

System Installation

Due to the nature of boiler flue and generator exhaust applications, the vent wall temperature can reach temperatures of 700-1000°F so an additional layer of insulation is required.

The system consists of the following:

- 1. An initial layer of 2" thick, 8lb/ft³ density Insulfrax S blanket installed directly onto the surface of the flue/exhaust with compression butt joints.**

OR

An initial layer of un-faced (foil scrim facing removed) FyreWrap Elite 1.5 installed directly onto the surface of the flue/exhaust installed with compression butt joints.

- 2. A second layer of FyreWrap Elite 1.5 with the foil encapsulation removed on one side. The un-faced side should be applied orientated toward the inner layer. This results with the foil-faced side as the visible exterior. If two layers of FyreWrap are used, butt joints may be used on both layers (overlaps are also permitted), otherwise follow the overlap conditions detailed below.**

The FyreWrap insulation system may be installed at zero clearance to combustibles across all locations on the wrap, at material overlaps, and in the areas between overlaps. To minimize waste, unroll tautly prior to measuring or making material cuts.

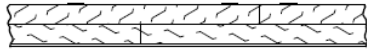
Installation Techniques:

Where overlaps are used, install insulation with a 3" minimum material overlap on second layer joints. Seal all cut edges with aluminum foil tape. The longitudinal joints of adjacent blankets may be installed using one of the following techniques.



Compression Butt Joint Technique:

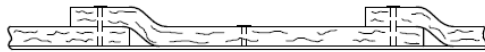
This installation technique is only permitted when using FyreWrap Elite 1.5 for both layers. Adjacent edges of the blanket should be butted together tightly and joints on different layers of wrap should be offset from one another.



Compression Butt Joint Technique
Cross-Section View

Telescoping Overlap Technique:

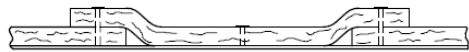
This wrap technique is the most common method of installing FyreWrap Elite 1.5 single layer systems where each adjacent blanket has one edge exposed and one edge covered by the next blanket, to form a 3" overlap.



Telescoping Overlap Technique
Cross-Section View

Checkerboard Overlap Wrap Technique:

This installation uses a 3" overlap pattern with both edges of each alternating blanket covered by each adjacent blanket whose edges are exposed. The overlap joints in alternate layers resemble a checkerboard pattern in the completed installation. This technique is often utilized when a small section of duct wrap must be repaired.



Checkerboard Technique
Cross-Section View

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". The collar can be field fabricated from FyreWrap Elite 1.5 rolls or purchased separately.



Butt Joint & Collar Technique
Cross-Section View

Attachment Options:

Choices for attachment method are limited by duct size.

Banding Only: For Duct Diameters ≤ 26¼"

To temporarily secure the insulation, the use of filament tape is permitted (optional). Install stainless steel or carbon steel bands (min. ½" wide, nom. 0.015" thick) over joints and within the areas between joints. Locate bands 1½" from each side of all second layer butt joints. If using overlaps, locate a band in the center of each perimeter blanket overlap. Place additional bands in the area between the overlaps on maximum 10½" centers. Tighten banding to firmly hold the wrap system in place but not so tight as to cut or damage the blanket. Pins are not required when this "banding only" attachment method is used.

Banding and Pins: For Duct Diameters ≤ 36.6"

Weld 12-gauge steel insulation pins to the underside of horizontal runs and backside of vertical runs. Place pins in maximum 12" rows and on maximum 10½" centers. In order to temporarily secure the insulation, the use of filament tape is permitted (optional). Impale FyreWrap Elite 1.5 over the pins and hold in place with 2½" square or 1½" round galvanized steel speed clips (washers). Turn down or cut off exposed ends of pins to eliminate safety hazards. Locate carbon steel or stainless steel bands (min. ½" wide, nom. 0.015" thick) 1½" from each side of all second layer butt joints. If using overlaps, locate a band in the center of each perimeter blanket overlap. Install additional bands maximum 10½" on center across the length of the vent. Tighten banding to firmly hold the wrap system in place but not so tight as to cut or damage the blanket. Cup head style pins are also permitted and shall be located at the same spacing as pre-welded pins.

Pins Only: For Duct Diameters > 36.6"

Weld 12-gauge steel insulation pins on all sides of the vent. Place insulation pins in rows (along the length of the vent) spaced maximum 10½" on center. Pins in each row are maximum 12" on center. Locate insulation overlaps so they are centered on the pins. Impale FyreWrap Elite 1.5 over the pins and hold in place with minimum 2½" square or 1½" round galvanized steel speed clips (washers) to keep the system from sagging. Turn down or cut off exposed ends of pins to eliminate safety hazards. Cup head style pins are also permitted and shall be located at the same spacing as pre-welded. If desired, this "pins only" attachment method may be used for vent diameters less than 48".

Attachment Options Summary

Vent Dimension	Banding Only	Banding & Pins (pins on bottom)	Pins Only
Width ≤ 26.25"	•	•	•
Width ≤ 36.6"		•	•
Width > 36.6"			•

