FyreWrap®

LIGHTWEIGHT FIREPROOFING FOR DUCTS

Fyrewrap Elite® 1.5 Duct Wrap Systems—Quick, clean and easy.

Introduction

Fyrewrap Elite® 1.5 duct fireproofing systems—a single layer flexible duct wrap solution for 2-hour fire-rated duct requirements. Simply put, this is the only way to go when it comes to providing passive fire protection for ductwork in commercial buildings.

Fyrewrap Elite comes ready to use as a foil finished roll to wrap around the ductwork of all configuration. It eliminates the need for messy spray applied materials, which are known to require hours of masking to avoid resulting overspray. Fyrewrap Elite results in fast, simple, cost effective and clean fireproofing while providing pleasing aesthetics.

Fyrewrap Elite is beneficial for project work and planning, as it allows for other trades to be working in close vicinity to the contractors doing the duct wrapping and with careful planning, large quantities of the duct fireproofing can be completed off-site.

Being up to 5 times lighter than fire sprays, this is a new revolution in duct fireproofing so insist on Fyrewrap Elite lightweight fireproofing for your next project.

What is Fyrewrap Elite®?

Fyrewrap Elite® 1.5 consists of high temperature insulation made from calcia, magnesia and silica chemistry with a service limit exceeding 1000°C and is fully encapsulated in an fibreglass-reinforced aluminium foil, scrim covering that provides handling strength as well as protection from moisture absorption.

Product Description

Name	Fyrewrap Elite® 1.5 Duct Wrap.
Application	Single-layered and double-layered application around metal ducts.
Orientation	Horizontal and vertical systems.
Purpose	To achieve a fire-rate and provide a fire rating of up to 2 hours, for the following duct types: • General ventilation ducts • Smoke spill/smoke exhaust ducts • Kitchen exhaust ducts • Carpark exhaust systems • Chemical/fume exhaust ducts • Zone pressurisation ducts
Appearance	Reinforced alumnium foil with distinctive Fyrewrap Elite® 1.5 logos printed for ease of identification.
Key Benefits	• Lightweight—up to 5 times lighter than fire spray • Clean and aesthetic appearance • Clean and easy installation—no meshing required. • Off-site installation assisting in effective project co-ordination • No masking required • Quick and efficient construction • Simple repair—Tape up or replace section • Tested for mould-resistance • Clear identification for fire certifying/auditing purposes

Fyrewrap Elite® 1.5 Physical & Thermal Properties

Thickness	38 mm
Width	610 mm
Roll Length	7620 mm
Surface Area of Single Roll	4.65 m^2 (total area)
Material Density	96 kg/m^3
Roll Weight (Net)	17 kg
Packaging for despatch	Cardboard carton
Microbial Resistance	GREENGUARD listed
Bio-soluble	Yes
Green Building Council/LEED accreditation	Approved
Volatile Organic Compounds (VOC)	No
R-Value (Thermal Resistance)	6.88 at 23.8°C
Acoustic Rating	STC 31 dB
Fire Rating	2 hours
Fire Resistance Level (FRL)	Up to 2 hours—Refer to FRL section for details.
Direction of Fire	Refer to FRL section for details.
Assessment of Approval	CSIRO
AS/NZS 1668.1—1998 (Ducts)	Complies
AS/NZS 1530.4—2005 (Fire Testing)	Complies
AS/NZS 1851 (Maintenance of Fire Systems)	Complies

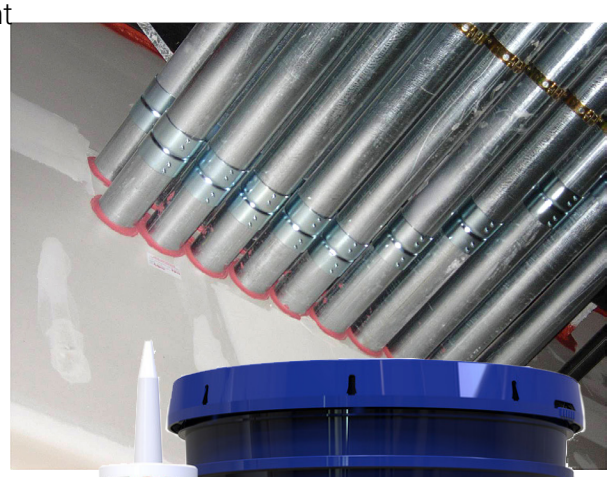
The information contained in this brochure was correct at the time of printing. E&OE

SpecSeal® LCI

INTUMESCENT SEALANT FOR PENETRATIONS AND CONSTRUCTION JOINTS

Intumescent Firestop Sealant

SpecSeal® LCI Firestop Sealant is a water-based intumescent sealant intended for a wide range of penetration and construction joint applications. LCI Sealant has excellent caulking properties making it easy to apply in vertical applications as well as overhead.



Features & Benefits

- Gun Grade material available in caulk tubes, sausages and pails
- Tested for use in penetration and construction joint configurations
- Paintable
- Used in over 500 UL® Certified Systems

ORDERING INFORMATION

Catalog Number	UPC Number	Description	(UOM) Qty.	Case Qty.	Weight (Each)
LCI300	730573011706	SpecSeal® Series LCI Intumescent Sealant 10.1 oz Tube	1	12	1.05 lbs (0.48 kg) 18.2 Cu In (300 ml)
LCI305	730573011751	SpecSeal® Series LCI Intumescent Sealant 5 Gallon Pail	1	1	61.39 lbs (27.84 kg) 1,155 Cu In (19.0 L)
LCI320	730573011720	SpecSeal® Series LCI Intumescent Sealant 20 oz Sausage	1	12	1.96 lbs (0.89 kg) 36 Cu in (592 ml)
LCI329	730573011799	SpecSeal® Series LCI Intumescent Sealant 29 oz Quart Tube	1	12	2.94 lbs (1.33 kg) 52 Cu in (858 ml)

TEST STANDARDS: ASTM E814 (UL 1479), ASTM E1966 (UL 2079), CAN/ULC-S115

Light Red Color | Permanent Solution

STI Specified Technologies Inc.

IFC MEMBER

Click here to learn more about SpecSeal® LCI

Technical Data Sheet

3M™ Venture Tape™ FSK Facing Tape 1525CW

Product Description

3M™ Venture Tape™ FSK Facing Tape 1525CW is a foil/scrim/kraft (FSK) lamination coated with a cold weather solvent acrylic pressure sensitive adhesive. 3M™ Venture Tape™ 1528CW is a FSK 2.5” disc version of 1525CW.

Product Features

- Cold weather adhesive performs well over a wide temperature range
- Excellent performance in demanding heat and humidity conditions
- Conforms well to irregular surfaces

Technical Information Note

The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Typical Physical Properties

Attribute Name	Test Method	Value
Color		Natural Aluminum
Adhesive Type		Acrylic
Backing		FSK
Backing Thickness	ASTM D3652	0.1 mm (4 mil)
Total Tape Thickness	ASTM D3652	0.14 mm (5.5 mil)
Liner		Release Liner

Typical Performance Characteristics

Attribute Name	Test Method	Temperature	Value
180° Peel Adhesion	ASTM D3330	22 °C (72 °F)	7.2 N/cm (66 oz/in) [1]
Elongation at Break	ASTM D3759		2 %
Tensile Strength	ASTM D3759		68.3 N/cm (39 lb/in)

[1] 12 in/min (300 mm/min)

Attribute Name	Value
Long Term Temperature Resistance	116 °C (240 °F) [1]
Minimum Long Term Temperature Resistance	-40 °C (-40 °F) [1]

[1] Long Term (day, weeks)

Handling/Application Information

Application Examples

- Sealing applications for fibrous ductboard, FSK-faced duct wrap and sheet metal ducts.
- Vapor seal for reinforced aluminum faced fiberglass or mineral wool thermal insulation.

Certifications/Standards

Certifications

- UL723 Classified (10/10 Flame/Smoke Rating) [UL file #R10984]

- CAN/ULC S102 (10/10 Flame/Smoke Rating) [UL file #R10984]
- Facing meets ASTM C1136, type II and IV

Storage and Shelf Life

Store in a clean, dry place. Temperature of 40-80°F (4-26°C) and 40 to 50% relative humidity are recommended. To obtain best performance, use this product within 24 months from date of manufacture.

Available Sizes

Attribute Name	Value
Standard Roll Length	45.7 m (50 yd)

Information

Technical Information: The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

Product Selection and Use: Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product and appropriate safety products, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.

Warranty, Limited Remedy, and Disclaimer: Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature (in which case such warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. If a 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability: Except for the limited remedy stated above, and except to the extent prohibited by law, 3M will not be liable for any loss or damage arising from or related to the 3M product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.

Disclaimer: 3M industrial and occupational products are intended, labeled, and packaged for sale to trained industrial and occupational customers for workplace use. Unless specifically stated otherwise on the applicable product packaging or literature, these products are not intended, labeled, or packaged for sale to or use by consumers (e.g., for home, personal, primary or secondary school, recreational/sporting, or other uses not described in the applicable product packaging or literature), and must be selected and used in compliance with applicable health and safety regulations and standards (e.g., U.S. OSHA, ANSI), as well as all product literature, user instructions, warnings, and limitations, and the user must take any action required under any recall, field action or other product use notice. Misuse of 3M industrial and occupational products may result in injury, sickness, or death. For help with product selection and use, consult your on-site safety professional, industrial hygienist, or other subject matter expert. For additional product information, visit www.3M.com.

ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

3M
Industrial Adhesives and Tapes Division
3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
800-362-3550

RPR Products, Inc.
Metal Jacketing Specialists

PROCUREMENT SERVICES FROM
BDFS
BuyDirectFromSuppliers.com
Manufactured in Mexico-China-Brazil-USA-Bahrain

Brent Gilbertson
Managing Partner/Founder
Mobile: 678-361-5559
Brent@BuyDirectFromSuppliers.com

INSUL-MATE™
Wing Seals

RPR Products manufactures its wing seals in Stainless Steel (T304, T316), Aluminum and Galvanized Steel to match the strapping being used. Our seals are precision made in house, for exact fit, ease of application and maximum binding and tensioning on strapping. Wing seals are manufactured to the follow ASTM Standards. Aluminum (ASTM B209), Stainless Steel (ASTM A-240), Galvanized (ASTM- A-653)

Stocked sizes are as follows:

Aluminum	Stainless Steel	Galvanized
3/8″	3/8″	N/A
1/2″	1/2″	1/2″
3/4″	3/4″	3/4″

Metal Jacketing Specialists
RPR Products, Inc.

INSUL-MATE™
RPR Insul-Mate™ Strapping

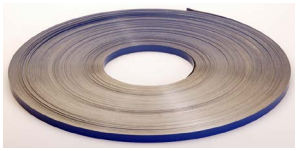
STRAPPING

Insul-Mate™ strapping is slit from T304 and T316 (ASTM A-240), Aluminum alloy 3003, 3105 (ASTM B209) and Galvanized Steel G90 LFQ (ASTM A-653). The edges are conditioned for safe handling. Aluminum in 3/8", 1/2" and 3/4" widths. Stainless Steel (T304 & T316) in 3/8", 1/2" and 3/4", T304 in 5/8" widths x .015" and .020" thickness. Galvanized in 1/2" and 3/4" widths x .020" thickness. Available in ribbon wound or 100# oscillated coils.

PACKAGING

ALUMINUM	STAINLESS STEEL	GALVANIZED
3/8" - 8# ctn	3/8" - 22# ctn	-
1/2" - 10# ctn	1/2" - 28# ctn	1/2" - 28# ctn
-	5/8" - 35# ctn (T304)	-
3/4" - 15# ctn	3/4" - 42# ctn	3/4" - 42# ctn

COLOR CODED STRAPPING



Insul-Mate™ color-coded strapping is designed to be used as a line identifier. Stainless steel and aluminum are coated in Industry Standard colors. Insul-Mate™ color coded stainless steel strapping is slit to 1/2" and 3/4" widths from T302/304 stainless steel and is available in ribbon wound or 100# oscillated coils. Insul-Mate™ color-coded aluminum strapping is also available in 1/2" width and is slit form ASTM B209 specification aluminum in ribbon wound coils. Both stainless steel and aluminum strapping are coated with a unique two coat baked on paint system which offers superior resistance to fading, cracking and peeling.

INDUSTRY STANDARD COLORS		
Stainless Steel	Blue/Black	No Asbestos
Stainless Steel	Blue/Blue	No Asbestos
Stainless Steel	White/Red	-
Stainless Steel	Marine Corp Green	-
Aluminum	Red/Blue	No Asbestos

Special colors available on special quote and minimum quantities.

FyreWrap®
ALKEGEN

Product Information Sheet

FyreWrap® Elite® 1.5 Duct Insulation – Grease Duct ASTM E2336 System

Introduction

Unifrax's FyreWrap® Elite® 1.5 Duct Insulation is a two-layer flexible enclosure for two-hour rated commercial kitchen grease ducts. FyreWrap Elite 1.5 Duct Insulation is tested per ASTM E2336 and is acceptable as an alternate to a traditional fire-rated shaft. Installed as a two-layer system, FyreWrap Elite 1.5 complies with the International Mechanical Code (IMC) and Uniform Mechanical Code (UMC). FyreWrap Elite 1.5 Duct Insulation offers the following product features:

- 2-hour fire-resistance rating
- Alternate to shaft enclosure
- Complies with IMC and UMC
- Tested per ASTM E2336
- Two-layer system
- High-temperature, biosoluble insulation
- Zero clearance to combustibles, at any location
- GREENGUARD listed for Microbial Resistance

Typical Product Parameters

Thickness	1.5"
Nominal Density	6pcf
Standard Product Form	Scrim Encapsulated
Product Availability	24"w x 25LF 48"w x 25LF

FyreWrap® Elite® 1.5 Duct Insulation

Product Components

Core Material: 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.

Encapsulating Material: The core insulation blanket is completely encapsulated in an aluminum foil fiberglass reinforced scrim covering. This scrim provides additional handling strength as well as protection from grease, moisture absorption and tearing.

Typical Product Properties

ICC Evaluation Services	Evaluation Report ESR-2224	
Intertek Laboratories (OPL) Listed, File 14870	Duct System: Design No. UNI/BI 120-02, UNI/BI 120-14, UNI/WA 120-01	
ASTM E2336	Passes all tests	
ASTM E2336 Internal Grease Duct Test	Zero Clearance to Combustibles at all locations on wrap	
ASTM E119 Full Scale Engulfment Test	2-hour Fire Resistance Rating	
ASTM E119 Vertical Wall Test	2-hour Fire Resistance Rating	
ASTM E84, UL 723, ULC S102.2 – UL File No. R14514	Unfaced Blanket	Encapsulated
Flame Spread/Smoke Developed Rating	Zero/Zero	<25/<50
ASTM E814 Firestop Test F-Rating = 2 Hrs., T-Rating = 2 Hrs.	Firestop System: UNI/FRD 120-19, UNI/BI 120-02, UNI/BI 120-14	
ASTM E136 Non-Combustibility Test	Passes	
ASTM C518 Durability Test	Passes; R-Value = 4.8 per inch at 75°F	
ASTM C518 Thermal Resistance	R-Value of Elite 1.5 (1½") = 7.2	
ASTM D6329-03 Microbial Resistance	Highly Resistant to Mold Growth	
California State Fire Marshal Listing	No: 2440-1478:100	

Complies with: NFPA 96 (all editions), 1997 ICBO Uniform Mechanical Code (UMC), 1997 ICBO Uniform Building Code (UBC), 2015 International Mechanical Code (IMC), 2015 IAPMO UMC (Uniform Mechanical Code).

ICC ES ESR-2224 · CLASSIFIED C UL US · C Intertek US · Complies with: NFPA 96 · IFC INTERNATIONAL FIRESTOP COUNCIL THE Source of Firestop Expertise®

Installation (Figure 1)

To minimize waste, FyreWrap Elite 1.5 should be rolled out tautly before measuring and making any material cuts. Install both layers of wrap with transverse (perimeter) and longitudinal butted joints. Between the first and second layers of wrap stagger transverse joints and offset longitudinal joints to different corners. All visually exposed blanket edges are to be sealed with minimum 3" wide aluminum foil tape and the use of filament tape is not required but is permitted to ease installation. The installation materials must comply with the options listed in Table 1.

Note: 3" material overlaps can be substituted for compression butt joints.

Table 1: Material Requirements

Item	Type and Specification
Bands	• Carbon steel or Stainless steel • Min. ½" wide & nom. 0.015" thick
Crimp clips	• Carbon steel or Stainless steel • Min 1" long
Pins	• Steel • Weld Pins or Cup Head • Min. 12 Gauge
Washers	• Galvanized Steel • Min. 2½" square or 1½" round

Attachment Options

Banding only

Place bands at 1½" on both sides of all second layer transverse butt joints and add additional bands as needed to ensure spacing is max. 10½" on center. Tighten banding to firmly hold the wrap system in place but not so tight as to cut or damage the blanket. Secure bands with crimp clips.

Note: No bands are required on the first layer.

Banding and Pins

For ducts greater than 24", in addition to installing bands as described in the Banding Option, weld steel insulation pins in rows to the underside of horizontal runs[1]. Locate pins on both sides of all second layer transverse butt joints 3" apart. Add additional rows as needed to ensure longitudinal spacing is max. 10". Pins in each row are to be max. 6" from each duct edge and max. 12" on center. Impale FyreWrap Elite 1.5 Duct Insulation over the pins and secure with washers (cup head pins also permitted).

[1] Pins are not required on vertical duct sections when using this option.

Note: In lieu of banding, pins installed on all sides of the duct is permitted.

Access Door (Figure 2)

Field fabricated and prefabricated grease duct access doors are permitted for use with FyreWrap Elite 1.5 Duct Insulation.

Field fabricated access doors are protected with three layers of FyreWrap Elite 1.5 Duct Insulation. A gasket of 0.5" thick unfaced FyreWrap or ceramic fiber blanket is initially installed between the duct and the access door cover. Weld threaded rod to each corner of the access door opening. Cover with hollow steel tubes (optional) for easy removal of blanket. Weld at least four steel insulation pins to the outside of the door cover panel, 1" from each corner. Cut through the two layers of FyreWrap Elite 1.5 Duct Insulation already covering the duct and access door opening. Leave the interior piece in place. Cut back the outer layer to form an opening with perimeter dimensions that extend 1" beyond the inner layer. Cut a piece of FyreWrap Elite 1.5 Duct Insulation that matches the dimensions of the opening and install over pins to fit tightly within the existing material. Cut an additional piece of insulation with perimeter dimensions that extend 1" beyond the layer below. Install over the insulation pins. Throughout the installation process, seal all cut edges with aluminum foil tape. Secure with washers and bend over excess pin lengths to eliminate safety hazards. Place washers on threaded rod and secure with nuts. Do not install banding over this area.

Prefabricated – Ductmate Ultimate and Ductmate F2-HT prefabricated access doors are permitted and must be installed in accordance with Ductmate Industries, Inc. installation instructions and the applicable code. The prefabricated access door is protected with three layers of FyreWrap Elite 1.5 Duct Insulation. The first layer is cut to the size of the door. A successive layer (two additional layers) is sized to create an overlap of 1" beyond the layer immediately below. All edges of insulation blanket must be protected with aluminum foil tape. A No. 16 gauge outer plate the same dimension as the outer layer of insulation blanket is held in place over the insulation using threaded rod and wing nuts. The outer plate is supplied with the Ultimate door and F2-HT doors. Access doors are available from Ductmate Industries, Inc. Contact www.ductmate.com or 1-800-245-3188 for additional information or local distributors. Ask for the Access Door Product Line Manager.

Firestop Systems (Figures 3 and 4)

Where ducts insulated with FyreWrap Elite 1.5 Duct Insulation pass through fire-rated walls and floors, the penetration opening shall be firestopped to maintain the fire rating of the assembly. Firestop Systems acceptable for use with FyreWrap Elite 1.5 Duct Insulation ASTM E2336 System at the time of printing are detailed on pages 4 and 5.

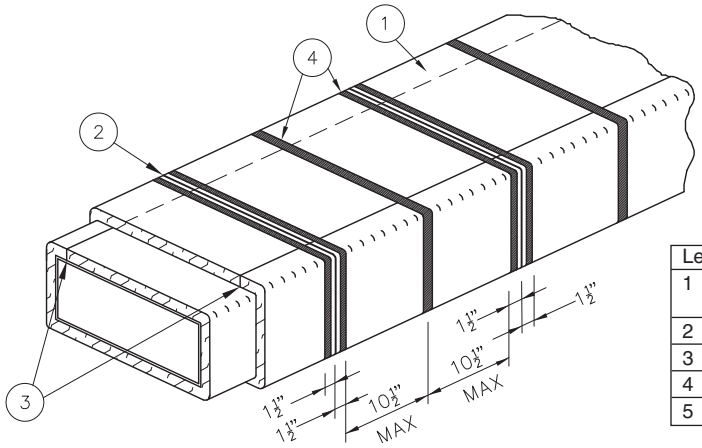
Duct Support (Figure 5)

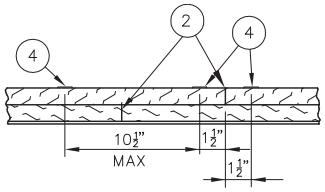
Horizontal duct support systems do not require FyreWrap insulation when constructed using a minimum ⅜" diameter uninsulated all-thread steel rod and 1½" x 1½" x ⅛" uninsulated steel angle spaced a maximum 60" on center along the length of the duct. A minimum clearance of 1" is required between the protected duct and the steel rod. To increase hanger spacing to 72" on center, ½" all-thread steel rod and 2" x 2" x ¼" steel angle are required. Vertical duct support systems do not require FyreWrap insulation when constructed using minimum 1½" x 1½" x ¼" steel angle brackets located on opposite sides of the duct, on the top and bottom of each floor-ceiling assembly. The supports are attached to the duct with welds. Maximum spacing between vertical supports shall be established by structural calculations in accordance with the applicable code, that are submitted to the building official for approval.

Figure 1. Butt Joint Technique

FyreWrap® Elite® 1.5 Duct Insulation
Commercial Kitchen Grease Duct System
ASTM E2336
2-Hour Fire-Rated Enclosure, Shaft Alternative
Zero Clearance To Combustibles
Butt Joint System

FP-959





Butt Joint
Adjacent Blanket Pieces

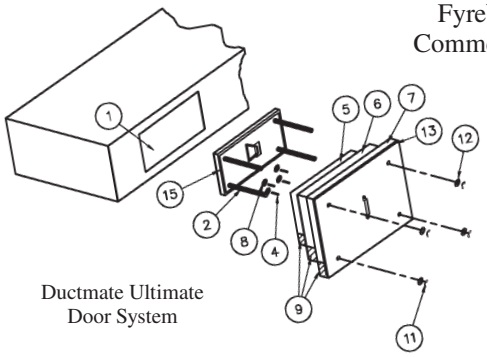
Legend:	
1	FyreWrap® Elite® 1.5 Duct Insulation, Two Layers (each 1.5", total thickness = 3")
2	1" Compressed Butt Joint (Transverse)
3	1" Compressed Butt Joint (Longitudinal)
4	½" Carbon or SS Banding Straps (2nd layer only)
5	Filament Tape (Optional)

*Applies to both horizontal and vertical duct orientations.
**Review page 2 prior to installation for detailed instructions.

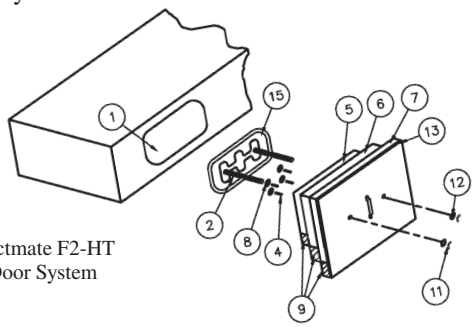
Figure 2. Access Door

FyreWrap® Elite® 1.5 Duct Insulation
Commercial Kitchen Grease Duct System
Access Door Systems

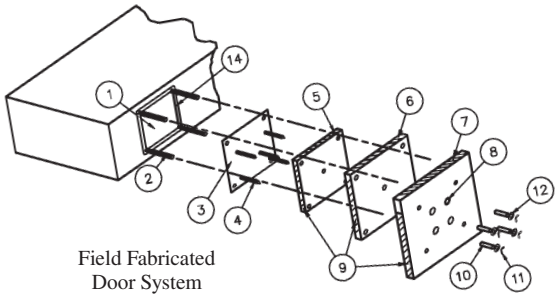
FP-426



Ductmate Ultimate
Door System



Ductmate F2-HT
Door System



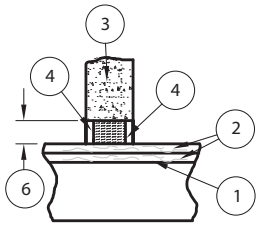
Field Fabricated
Door System

Legend:	
1	Access Door Opening
2	All Thread Rods
3	Access Door Cover Panel 16 Gauge (field fab. only)
4	Insulation Pins – Welded to Cover
5	First Layer FyreWrap® Elite® 1.5
6	Second Layer FyreWrap® Elite® 1.5, 1" Overlap
7	Third Layer FyreWrap® Elite® 1.5, 1" Overlap
8	Speed Clips/Washers
9	Cut Edges Sealed With Aluminum Foil Tape
10	Spool pieces for threaded rods (optional field fab. only)
11	Wing Nuts
12	Washers
13	Insulation plate
14	Unfaced FyreWrap blanket or Ceramic fiber gasket, ½" thick
15	Prefabricated access door

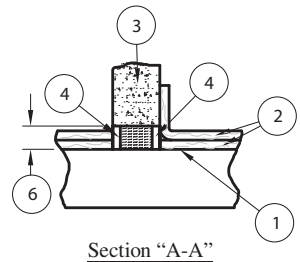
Figure 3. Firestop Installation

FyreWrap® Elite® 1.5 Duct Insulation Through Penetration Firestops Wall **FP-690**

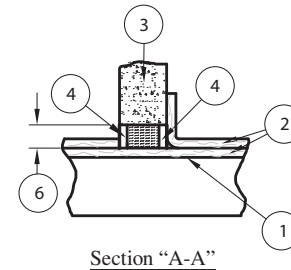
Intertek Design No. UNI/BI 120-02 & 120-14, F-Rating = 2 Hrs. T-Rating = 2 Hrs.



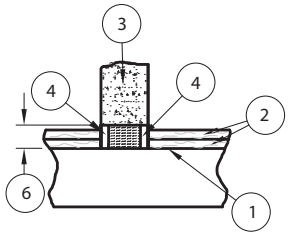
Section "A-A"
Option 1



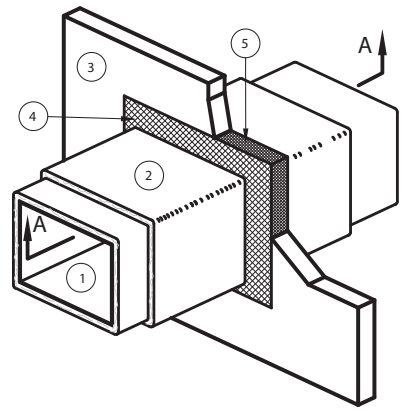
Section "A-A"
Option 2

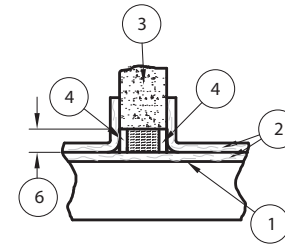


Section "A-A"
Option 3

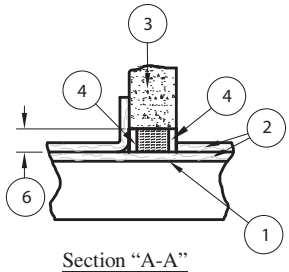


Section "A-A"
Option 8

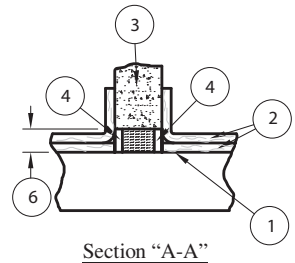




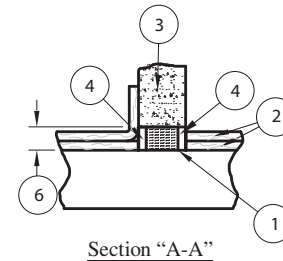
Section "A-A"
Option 4



Section "A-A"
Option 7



Section "A-A"
Option 6



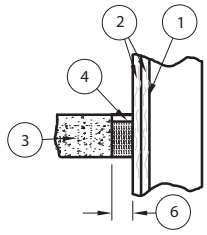
Section "A-A"
Option 5

Legend:	
1	Grease Duct, max. 2401 in² area, 49" max width
2	FyreWrap® Elite® 1.5 Duct Insulation, Two Layers
3	Fire-Resistive Concrete, Gypsum, or CMU block wall assembly, 2 hr. rated
4	Firestop Sealant, ⅝" depth, overlapping on wall and duct min. ½" 3M Fire Barrier 1000NS or Hilti FS-ONE or STI SpecSeal or Tremco FyreSil
5	Unfaced FyreWrap® Elite® 1.5 or 4 PCF Mineral Wool compressed 50% option 1 and 33% options 2-8, recessed ⅝" from both sides of wall
6	Annular space, ½" to 4½"

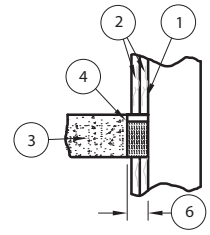
Figure 4. Firestop Installation

FyreWrap® Elite® 1.5 Duct Insulation Through Penetration Firestops Floor **FP-691**

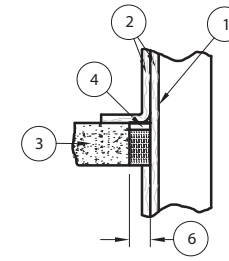
Intertek Design No. UNI/BI 120-02 & 120-14, F-Rating = 2 Hrs. T-Rating = 2 Hrs.



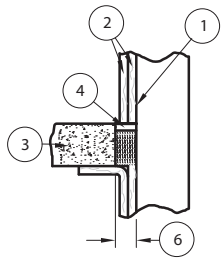
Section "A-A"
Option 1



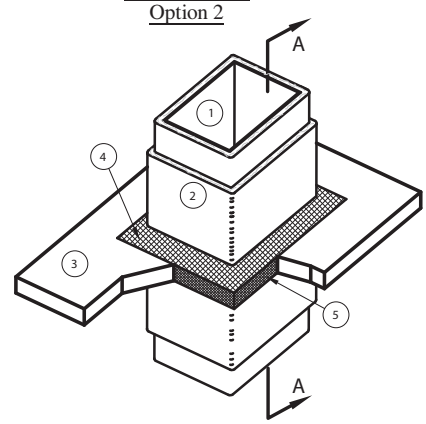
Section "A-A"
Option 2

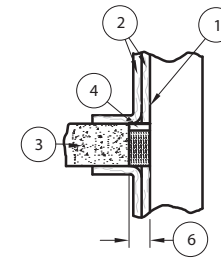


Section "A-A"
Option 3

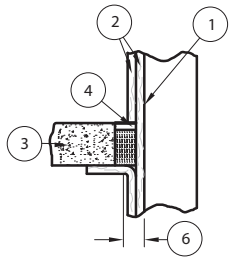


Section "A-A"
Option 8

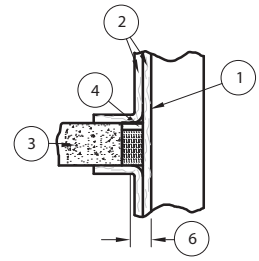




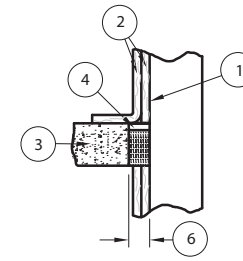
Section "A-A"
Option 4



Section "A-A"
Option 7



Section "A-A"
Option 6



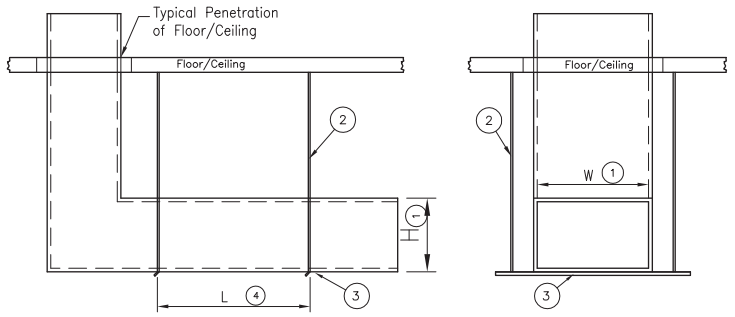
Section "A-A"
Option 5

Legend:	
1	Grease Duct, max. 2401 in² area, 49" max width
2	FyreWrap® Elite® 1.5 Duct Insulation, Two Layers
3	Fire-Resistive Concrete Floor/Ceiling assembly, 2 hr. rated
4	Firestop Sealant, ⅜" depth, overlapping on floor and duct min. ½" 3M Fire Barrier 1000NS or Hilti FS-ONE or STI SpecSeal SSS or Tremco FyreSil
5	Unfaced FyreWrap® Elite® 1.5 or 4 PCF Mineral Wool compressed 50% option 1 and 33% options 2-8, recessed ⅜" from top side of floor
6	Annular space, ½" to 4½"

Figure 5. Support System

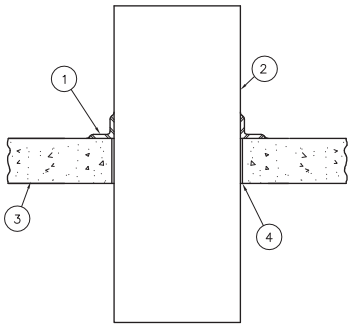
FP-625R1

FyreWrap® Elite® 1.5 Duct Insulation
Typical Duct Support Details



Typical Horizontal Duct Support Details

Typical Vertical Duct Support Details



Legend:			
1	Max. Duct Size (HxW)	49" x 49"	49" x 49"
2	Steel Threaded Rod	⅜" diameter	½" diameter
3	Steel Angle	1½" x 1½" x ⅛"	2" x 2" x ¼"
4	Support System Spacing (L)	60"	72"

Legend:	
1	Duct Support Mechanism
2	Grease Duct
3	Fire Resistive Concrete Floor/Ceiling Assembly
4	Firestop System (figure 4)

For additional information about product performance or to identify the recommended product for your fire protection application, please contact Unifrax at 716-768-6500 and ask for Fire Protection Application Engineering.

Refer to the product Safety Data Sheet (SDS) for recommended work practices and other product safety information.

Fire Resistance Level (FRL) Details		
Direction of Fire Exposure	Number of Layers	Fire Resistance Level (FRL)
Internal Fire	1	120/120/120
External Fire	1	120/120/60
Internal Fire	2	120/120/120
External Fire	2	120/120/120
Nb. Based on additional testing, Defire 'Alternative solutions report' has assessed **1 layer to achieve 120/120/120 for most duct applications**. Contact Trafalgar technical department for further details.		

Installation overview

Fyrewrap Elite® 1.5 duct wrap is directly applied to the surface of the metal duct in a single layer. In crowded and cluttered environments, Fyrewrap Elite® 1.5 duct wrap may be installed with zero clearances between the wrap surface and surrounding combustibles at any location of the duct wrap—at material overlaps or otherwise.

To minimize waste, Fyrewrap Elite® 1.5 duct wrap should be measured accurately and applied tautly prior to application and fixture.

Where Fyrewrap Elite insulated ducts pass through fire-rated walls and floors, the penetration opening shall be fire-stopped appropriately as detailed in 'Fire-rated floor and wall penetrations' section.

Guidelines

Coverage	Fyrewrap duct wrap must completely cover the duct and there must not be any exposed sections or gaps.
Overlap	A 75 mm (3") minimum overlap must be used on all joints. Only the three specified methods (telescope, checkerboard and butt splice methods) of overlap may be used when adjoining Fyrewrap duct wraps.
Cut edges	Cut edges must be completely sealed with the specified pressure-sensitive aluminium foil tape.
Temporary tapes	Fyrewrap duct wraps may be temporarily held in place with filament tape before correct fixing methods are applied.
Steel bands	Only specified approved steel bands may be used.
Pins	Only specified approved pre-welded pins or cup-head type of pins may be used.

Fixing Method

Duct section (mm)	Steel banding only	Steel banding & pins (pins on bottom only)	Pins only (all sides of duct)
≤ 600 x 600	●	●	●
≤ 1200 x 1200		●	●
≥ 1200 x 1200			●

Steel banding only

Temporarily secure Fyrewrap Elite® 1.5 duct wrap with filament tape before securing permanently with steel bands. Place carbon steel or stainless steel bands over material joints and 40 mm from sealed edges. Additional bands shall be placed between overlaps at 265 mm centres. Tighten bands adequately with steel crimp clips, as to restrict movement of Fyrewrap Elite® 1.5 duct wrap. Excessive tightening of bands may cut or damage fibreglass-reinforced aluminium foil and/or duct.

Steel banding & pins (pins on bottom only)

In this application, pins are to be welded on the underside of horizontal runs or backsides (side of duct having largest dimension) for vertical runs. Steel pins are either pre-welded onto duct prior to application of Fyrewrap Elite® 1.5 (duct wrap to be impaled onto pins) OR, cup-head style pins are welded directly through temporarily secured duct wrap. In the event that pins are pre-welded, round and square galzanised steel speed clips (washers) are to be used. Self adhesive pins must not be used. Pins are to be spaced in a grid of maximum centres and exposed ends are to be cut off or turned down to eliminate safety issues. In conjunction with pins, steel or stainless steel bands are to be installed as previously detailed. This method can be used for all sectional sizes of duct not exceeding 1200 x 1200 mm.

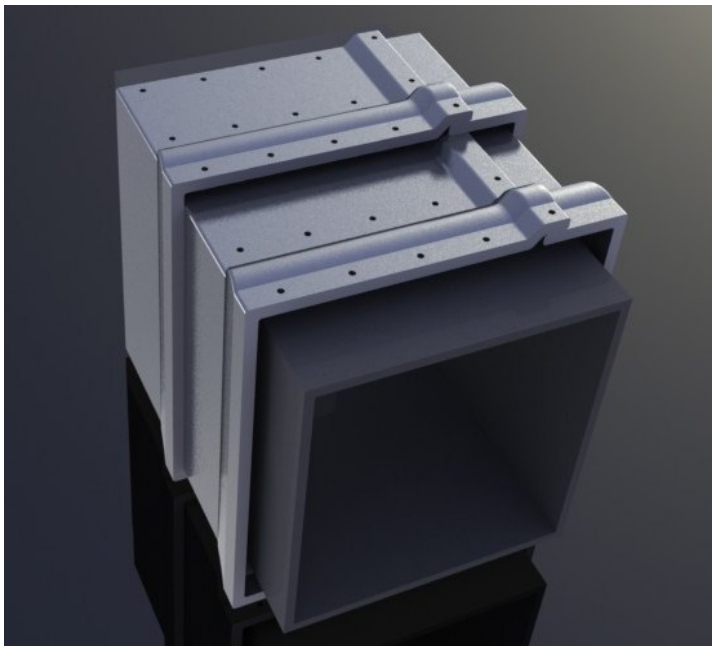
Pins only

This method of using pins only can be applied to all sizes of duct. Steel pins are either pre-welded onto duct prior to application of Fyrewrap Elite® 1.5 (duct wrap to be impaled onto pins) OR, cup-head style pins are welded directly through temporarily secured duct wrap. In the event that pins are pre-welded, round and square galvanised steel speed clips (washers) are to be used. Self adhesive pins must not be used. Pins are to be spaced in a grid of maximum centres and exposed ends are to be cut off or turned down to eliminate safety issues.

Accessories and Equipment

See table below for guidelines and allowable properties of all accessories required in the installation process.

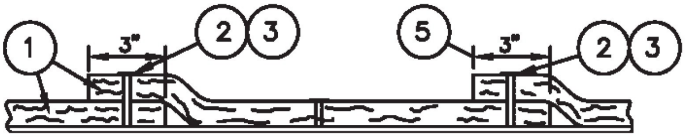
`Component	Type	Minimum Size	Centres (max)
Bands	Steel	12 mm (1/2") wide x 0.4 mm (0.015") thick	40 mm from edges over the overlap and one additional band between overlaps
Bands	Stainless steel	12 mm (1/2") wide x 0.4 mm (0.015") thick	40 mm from edges over the overlap and one additional band between overlaps
Band crimps	Steel	25 mm long	-
Pre-welded pins	Steel	Dia. 2.7mm (0.105") x length to suit	Grid of 200 mm centres
Speed clips (square)	Galvanised steel	60 mm (2.5")	-
Speed clips (round)	Galvanised steel	Dia. 36 mm (1.5")	-
Cup-head pins	Steel	Dia. 2.7 mm (0.105") x length to suit	Grid of 200 mm centres
Aluminium foil tape	Reinforced	-	-



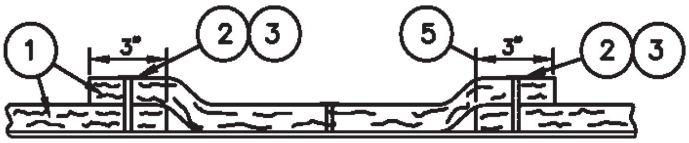
Specialty Equipment
Pin welding equipment commonly used in the heating, ventilation and air-conditioning industry (HVAC) must be used when installing Fyrewrap Elite® with pre-welded pins or cup-head style pins.

Support Framework
Special considerations must be made for the additional weight that the Fyrewrap Elite® 1.5 duct wrap material will bear on the duct support systems.
Steel supports and components are not required to be fire-rated in this application.

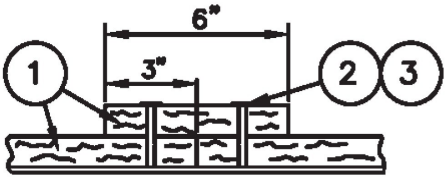
Overlap details
The following three overlapping techniques may be used to install Fyrewrap Elite®. An overlap of 75mm (3") must be maintained regardless of overlapping technique.



Telescopic overlap (most common)
This method involves wrapping next segment of duct wrap over edge of previous segment.



Checkerboard overlap
This method involves both edges of one segment overlapping their respective adjacent segments. The overlap joints in alternate layers of duct wrap will resemble a checkerboard pattern once complete. This method is ideal when repairs are to be made to segments.



.

Butt-joint with cover strip
This methods involves having two adjacent duct wrap segments butt-joined at their edges and a 150 mm wide cover strip centred at the butt -joint. This allows for a 75mm overlap over each edge. Cover strips are to be fabricated from same Fyrewrap Elite® material.

Step-by-step installation instructions

This installation instruction details all major steps required to install Fyrewrap Elite® and should also be used as a basis for repairs.

1. Roll out and cut required length of Fyrewrap Elite®.

2. Seal all cut edges with aluminum foil tape.

3. Telescopic overlap (most common method) - Wrap the blanket around the perimeter of the duct. Place the next piece of material with a 75mm (3") overlap of the adjacent material (circumferential joint) and 75mm (3") overlap where blanket meets itself (longitudinal joint).

4. Blanket may be held in place with filament tape until bands are installed.

5. Fix material in place steel bands and/or pins where needed.