

19 Industrial Park Rd.
P.O. Box 728
Saco, ME 04072
Office (207) 282-4136
Fax (207) 283-2980

AUTHORITY HAVING JURISDICTION ACKNOWLEDGEMENT

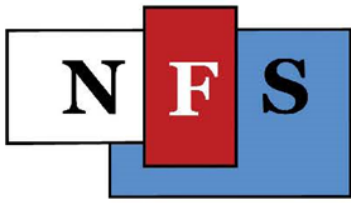
The firestopping industry, in conjunction with product manufactures, have performed extensive testing in both penetration and construction joint firestop applications across multiple modes of building materials. However, due to variations in construction throughout the phases of a project, it is not possible to test every firestop application that may be encountered during a job. When such field conditions differ from an original design or unanticipated construction hindrances are encountered, Engineering Judgments (EJ's) are called upon.

It is important to note, EJs are not based upon identical fire testing identified out in the field but rather are developed upon sound engineering principles and good judgment set forth by the International Firestop Council (IFC). Test data from comparable systems are analyzed and applied toward similar applications that do not exactly meet the criteria of a current UL Listed System.

It is the responsibility of the Authority Having Jurisdiction (AHJ) to approve all Engineering Judgments on a given project. The National Fire Protection Agency (NFPA) defines an AHJ as an organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

In conjunction with the above standards, enclosed you will find an Authority Having Jurisdiction Acknowledgement Form which will need to be executed for the following project.

Any specific questions or concerns regarding the aforementioned information can be addressed and answered by Northeast Firestopping Solutions.



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AUTHORITY HAVING JURISDICTION ACKNOWLEDGEMENT

Date: _____

The following acknowledgement form, hereby referred to as “the acknowledgement,” addresses all concerns in regards to the acceptance and approval of any and all Engineering Judgments (EJs) installed by Northeast Firestopping Solutions (NFS) at the [_____] taking place at [_____].

To Whom It May Concern:

I, _____ representing [_____] as the Authority Having Jurisdiction (AHJ), hereby accept and approve the installation of all Engineering Judgments provided by [_____] and installed by Northeast Firestopping Solutions (NFS). I understand the following Engineering Judgments do not meet any specific, tested system details of the manufacturer and represent a best judgment to address specific configurations found in the field.

Authority Having Jurisdiction Signature

Authority Having Jurisdiction Name (Printed)

Date

NFS Representative Signature

NFS Representative Name (Printed)

Date



Fire Protection Products



ENGINEERING JUDGMENT FOR:	
10/23/14	
Michael Palmacci	
General Insulation	
378 Commercial Street	
Malden, MA 02148	
Fax: (781) 321-5350	

Project: Rolands Bean 2	Contractor: Northeast Firestop Solutions
Fire Stopping Category: Joints / Perimeter	Hourly Rating Requested/ Type: 1 Hour / F
Joint Type: Perimeter	Maximum Joint Width: Max 6 in.
Curtain Wall: Exterior Sheathing	Slab Assembly: Structural Concrete
Type of Movement: Static	

Special Conditions: Max 6 in. perimeter joint between edge of roof slab and exterior sheathing. Studs fastened to edge of slab extend up past the roof and will be faced on both sides with exterior materials to protect the firestop from the elements after firestop is in place.



Application Details: To firestop this application, install in accordance with Intertek Design 3MU/JS 120-22 with the following modifications/clarifications:

1. Install minimum 4 in. depth of 4 pcf mineral wool into the joint between the concrete slab and exterior sheathing.
 - Mineral wool to be flush with the top surface of the concrete slab.
2. Install a 1/8 wet thickness of FireDam Spray 200 over the mineral wool.
 - FireDam Spray 200 to overlap minimum 1/2 in. onto the concrete slab, sheathing and studs.
3. Due to the studs being fastened in an orientation that does not allow for movement, the movement in this scenario is reduced to static.

3M Fire Barrier Material: FireDam Spray 200

Based On: 3MU/JS 120-22

This Engineering Judgment (EJ) is based upon the sole and exclusive use of 3M brand Fire Protection Products as described within. Modification of any of the parameters of this EJ, including, without limitation, the use of non-3M brand Fire Protection Products, shall render this EJ null and void. This perimeter fire barrier design is expected to achieve the hourly rating indicated above. This engineering judgment is based on performance results obtained in testing with independent laboratories which have been tested in accordance to ASTM E 2307 and / or internal 3M fire tests.

Engineering Judgment Prepared By:

Anthony Kilmer
Technical Service Representative

Reviewed By:

562638
cc: Ryan Fenstermaker

3M Building and Commercial Services Division

3M Center, Building 223-2N-20
St. Paul, MN 55144-1000



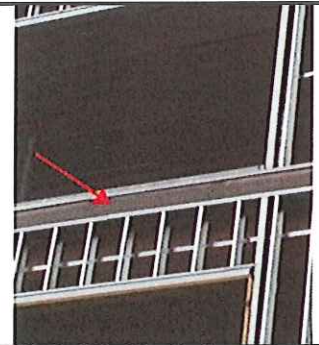
Fire Protection Products



ENGINEERING JUDGMENT FOR:
10/10/14
Michael Palmacci
General Insulation
378 Commercial Street
Malden, MA 02148
Fax: (781) 321-5350

Project: Maine Med Bean 2	Contractor: Northeast Firestopping Solutions
Fire Stopping Category: Joints / Perimeter	Hourly Rating Requested/ Type: 2 Hour / F only
Joint Type: Perimeter	Maximum Joint Width: 1 in.
Curtain Wall: Exterior Sheathing on Metal Stud Framing	Slab Assembly: Structural Concrete
Type of Movement: Dynamic	

Special Conditions: Stud framing rests on edge of slab and is projecting max 3 in. past edge of slab. Propose to install firestop from outside of building prior to installation of exterior sheathing.



Application Details: To firestop this application, install in accordance with Intertek Design Number 3MU/JS 120-22 with the following modifications/clarifications:

1. Prior to installing the exterior sheathing.
 - Install a 1/8 in. wet thickness of FireDam Spray 200 to the face of the concrete slab/metal stud assembly.
2. Install minimum 6 in. depth of minimum 4 pcf mineral wool into the void created between the studs overhanging the slab edge 3 inches.
 - Mineral wool to be sized such that when exterior sheathing is installed the mineral wool will be compressed 50%.
3. Install a 1/8 in. wet thickness of Fire Dam Spray 200 to the inside face of the exterior sheathing just before it is applied.
 - FireDam Spray 200 to be sprayed onto inside face of sheathing such that it overlaps the previously applied FireDam Spray 200 on the face of the metal studs minimum 1 in. creating a continuous seal.

3M Fire Barrier Material: FireDam Spray 200

Based On: Design Number 3MU/JS 120-22

This Engineering Judgment (EJ) is based upon the sole and exclusive use of 3M brand Fire Protection Products as described within. Modification of any of the parameters of this EJ, including, without limitation, the use of non-3M brand Fire Protection Products, shall render this EJ null and void. This perimeter fire barrier design is expected to achieve the hourly rating indicated above. This engineering judgment is based on performance results obtained in testing with independent laboratories which have been tested in accordance to ASTM E 2307 and / or internal 3M fire tests.

3M Building and Commercial Services Division

3M Center, Building 223-2N-20
St. Paul, MN 55144-1000

Engineering Judgment Prepared By:



Alan Wiater
Technical Representative

Reviewed By:



562387

Rev. 1 AEK 10-21-14: Changed stud overhang to 3 in.
Rev. 2 APW 10-21-14: Changed special conditions to indicate 3
in.

cc: Ryan Fenstermaker



NORTHEAST FIRESTOPPING SOLUTIONS

A Division of PM Construction Co., Inc.

19 INDUSTRIAL PARK ROAD

SACO, ME 04072

OFFICE: (207) 282-4136

FAX: (207) 283-2980

October 20, 2014

To whom it may concern,

My name is Tyler Ferguson and I am the Operations Director for Northeast Firestopping Solutions. We are currently under contract to complete the curtain wall firestopping for New Hampshire Glass corp. on the Maine Medical Center Bean 2 project.

There have been some questions on behalf of the firestopping submittal package that was submitted.

One concern is the 6" nominal joint width requirement on drawing number #MU/JS 120-17. When I walked the site last week we could not find any space that would exceed those requirements. Average joint width from metal pan to edge of slab was 2".

Second concern was that there was Hilti submittals in the package. The reason for this was the Thermafiber Insulation that meets 3mm system material requirements is purchased through Hilti so they have a MSDS sheet on the material. I should have just left it out of the submittal but I can assure you it is not a Hilti product.

Finally the concern about the perimeter fire barrier detail at the roof deck/parapet without the concrete slab. I have a few questions about this detail. I am unsure what rating is required at that location. Most roof edges that I have come across are not rated. The detail D1 on Drawing A11-51 shows the roof edge of slab being packed with mineral wool that is being held in by metal angle. Is there a rating required at this location or can we pack it as the detail shows?

Sincerely,

For Details

Tyler Ferguson
Operations Director
Northeast Firestopping Solutions



Fire Protection Products



ENGINEERING JUDGMENT FOR:	
07/25/14	
Michael Palmacci	
General Insulation	
378 Commercial Street	
Malden, MA 02148	
Fax: (781) 321-5350	

Project: Maine Medical Center Bean 2	Contractor: Northeast Firestopping Solutions
Fire Stopping Category: Joints / Perimeter	Hourly Rating Requested/ Type: 1 and 2 Hour / F Obtainable Rating: See Below
Joint Type: Perimeter	Maximum Joint Width: Max 8 in.
Curtain Wall: Per 3MU/JS 120-17	Slab Assembly: Structural Concrete
Type of Movement: Dynamic	

Special Conditions: Inclusion of the spandrel insulation is going to be sandwiched between two 20 ga. metal pans. Edge of slab is packed and spray against the metal pan and not foil faced insulation. Gap after pan 6 inches. Need to cover mullions.

Application Details: To firestop this application, install in accordance with UL System 3MU/JS 120-17 with the following modifications/clarifications:

1. Due to the inclusion of the elimination of the stiffening angles and the unknown transom height, the obtainable rating for this application is reduced to up to 1 and 2 hour or as long as the overall assembly remains fully intact in a fire scenario.

3M Fire Barrier Material: FireDam Spray 200

Based On: 3MU/JS 120-17

This Engineering Judgment (EJ) is based upon the sole and exclusive use of 3M brand Fire Protection Products as described within. Modification of any of the parameters of this EJ, including, without limitation, the use of non-3M brand Fire Protection Products, shall render this EJ null and void. This perimeter fire barrier design is expected to achieve the hourly rating indicated above. This engineering judgment is based on performance results obtained in testing with independent laboratories which have been tested in accordance to ASTM E 2307 and / or internal 3M fire tests.

Engineering Judgment Prepared By:

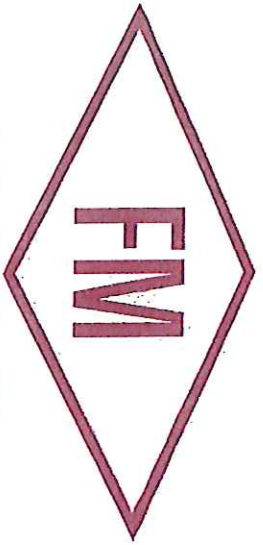
Carrie Meis
Technical Service Representative

Reviewed By:

561005
cc: Ryan Fenstermaker

3M Building and Commercial Services Division

3M Center, Building 223-2N-20
St. Paul, MN 55144-1000



APPROVED

Certificate of Compliance

as a

DESIGNATED RESPONSIBLE INDIVIDUAL

Is hereby granted on this day 3/12/2013
to:

Tyler Ferguson
Northeast Firestopping Solutions

for successfully meeting all test criteria.

FM Approvals hereby certifies that the individual shown above met all test criteria contained in Approval Standard 4991, Approval of Firestop Contractors, to qualify as a Designated Responsible Individual (DRI).

Said recognition is subject to satisfactory field performance, accumulation of Continuing Education Units and periodic written re-examinations.

For more than 160 years FM Approvals has partnered with business and industry to reduce property losses.

Cynthia E. Frank
Group Manager
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062



Member of the FM Global Group

Design Number 3MU/JS 120-17

(Formerly OPL Design No. CEJ 266 P)

November 14, 2011

PERIMETER FIRE BARRIERS

3M Company

FireDam™ Spray 200, Fire Barrier 1000 NS Silicone Sealant and

Fire Barrier 1003 SL Silicone Sealant

ASTM E 2307

T-Rating 3/4 hr

F-Rating 2 hr

ASTM E 2307/ASTM E 1399 Cycling

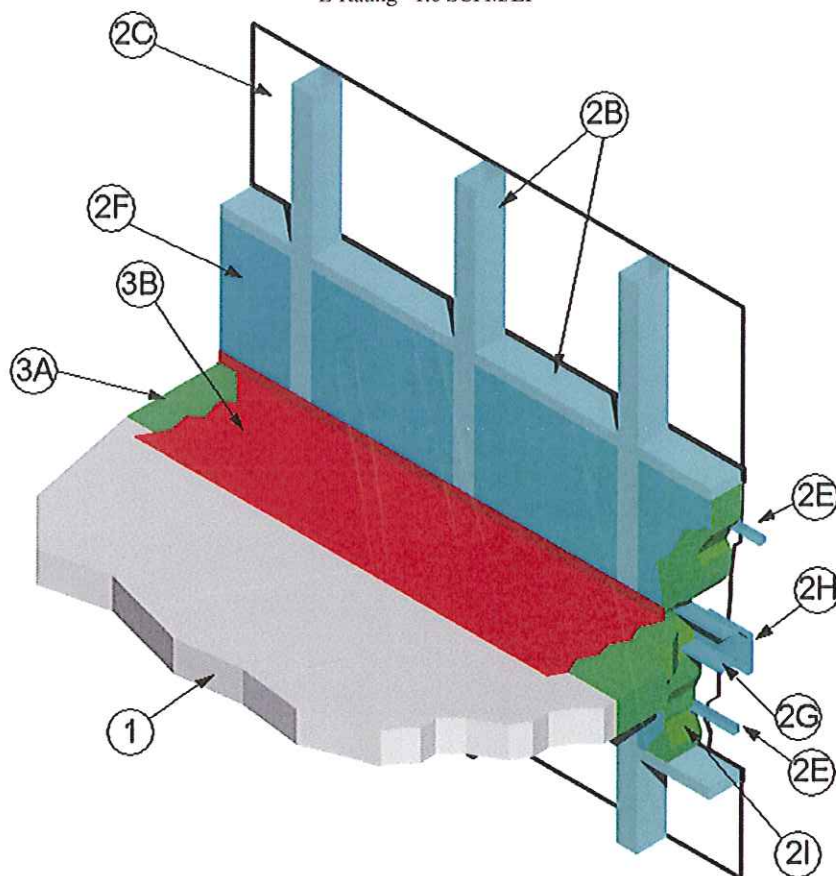
Class IV: 500 cycles @ 30 cpm

Rated for ± 10% horizontal movement @ 33% Compression (Reference Item 3A)

Rated for ± 6.25% vertical shear movement @ 33% Compression (Reference Item 3A)

UL 2079

L-Rating <1.0 SCFM/LF



1. CONCRETE FLOOR ASSEMBLY: Two-hour rated concrete floor assembly made from either lightweight or normal weight concrete with a density of 100 to 150 pcf, having a minimum thickness of 4-1/2" at the joint face. When a longitudinal recess (blockout) is required to contain an architectural joint system, increase concrete floor assembly thickness to maintain a minimum thickness of 4-1/2" and accommodate depth of blockout formed in the concrete: blockout width unrestricted.
2. CURTAIN WALL ASSEMBLY: Incorporate the following construction features:
 - A. Mounting Attachment: (Not shown) Attach aluminum framing (Item 2B) to the structural framing according to the curtain wall manufacturer's instructions. When required, connect the mounting attachments to the joint face of the concrete floor assembly (Item 1) according to the curtain wall manufacturer's instructions. Limit distance between mounting attachments to maximum 60" oc.
 - B. Aluminum Framing: Use hollow rectangular aluminum extruded tubing with minimum overall dimensions of 0.100" thick, 4" high and 2-1/2" wide. Locate mullions (vertical aluminum framing) minimum 60" oc and locate transoms (horizontal aluminum framing) a minimum 48-1/2" oc. For the spandrel region, locate the upper transom (horizontal aluminum framing) a minimum 20" above the concrete floor assembly (Item 1) as measured from the top surface of the concrete floor assembly (Item 1) to the underside of the transom (horizontal aluminum framing).
 - C. Glass Panels: Sized and installed into aluminum framing (Item 2B) according to the curtain wall system manufacturer's guidelines. Use minimum 1/4" thick clear, heat strengthened (HS) glass or tempered glass with a maximum width and height less than the aluminum framing (Item 2B) oc spacing, which allows the glass to be secured between the notched shoulder of the aluminum framing (Item 2B) and pressure bar. Secure glass panels with a thermal break (rubber extrusion), pressure bar (aluminum extrusion), minimum 1/4-20 x 5/8" long screws, and a snap face (aluminum extrusion).
 - D. Aluminum Anchor Brackets: (not shown) Use minimum 9/16" thick aluminum anchor brackets to serve as part of the mounting attachment (2A) and are rigidly secured to the aluminum framing (2B) with 1/2" diameter, 2-1/4" long, Grade 5, anchor bolts.

Design No. 3MU/JS 120-17 *continued*

- E. Steel Retainer Angle – Place a minimum 22 GA, 1-1/2 x 1-1/2" angle horizontally 12" above and below the floor line in the spandrel area, and is secured to the aluminum framing (2B) with No. 10 sheet metal screws. Orient the angle so that the horizontal flange is below the vertical flange and situate the horizontal flange to fully embed into the curtain wall insulation of the steel back pan.
- F. Steel Backpan: Install minimum 22 GA, galvanized steel backpan filled with curtain wall insulation (2I) adhered to the back pan with latex adhesive and steel face facing the interior face of the aluminum framing in the spandrel region. Secure the backpan to the aluminum framing (2B) with 1" long, hex-head, sheet steel screws.
- G. Backpan Stiffener: Secure minimum 18 GA, galvanized, hat-shaped, stiffener placed horizontally and measuring 4" wide x 3" deep and having 1" flanges to the backpan with No. 10, sheet steel screws. Position the lower flange of the stiffener within the plane of the packing material (3A), and space the screw holding the top flange of the stiffener to the backpan (2F) a minimum of 2-7/32" above the top surface of the concrete floor assembly (Item 1).
- H. Steel Patches: Where required, horizontally place 6" wide, 22 GA, galvanized steel C-shaped patches measuring 6" wide and 1-1/2" deep, centered on the outside of the backpan stiffener (2G) and secure patches to the stiffener with No. 10, sheet steel screws.
- I. Curtain Wall Insulation: Fill the cavity of the steel backpan (Item 2F) with nominal 3" thick, 8-pcf density, mineral wool batt insulation faced on one side with aluminum foil scrim (vapor retarder), which faces the room interior. Tightly fit, compress at least 1/4" in all directions, the mineral wool batt insulation within the backpan (Item 2F) and adhere to the backpan with latex adhesive. Use only Intertek certified products meeting the above minimum requirements.
3. PERIMETER JOINT PROTECTION: Do not exceed a 6" nominal joint width (joint width at installation). Incorporate the following construction features for the perimeter joint protection (also known as perimeter fire barrier system):
- A. Packing Material: Use a minimum 4" thick, 4-pcf density, mineral wool batt insulation installed with the fibers running parallel to the edge of concrete floor assembly (Item 1) and curtain wall assembly (Item 2). Cut packing material width to achieve required compression, refer below, when installed in the nominal joint width. Compress the packing material into the perimeter joint. Tightly compress together splices (butt joints) in the lengths of packing material by using minimum 1/4" compression per piece of packing material. When a spray coating is used, locate the top surface of the packing material flush with the top surface of the concrete floor assembly (Item 1). When the non-sag or self leveling silicone sealant is used, recess the top surface of the packing material 1/4" from the top surface of the concrete floor assembly (Item 1). Use only Intertek certified products meeting the above minimum requirements.
- I. When 33% compression is required cut the width of the packing material 1.5 times wider than the nominal joint width.
- B. CERTIFIED MANUFACTURER: 3M Company
 CERTIFIED PRODUCT: FireDam™ or Fire Barrier™
 MODEL: FD Spray 200 (Elastomeric, Sprayable) or FB 1000 N/S Silicone Sealant (Non-sag) or FB 1003 S/L (Self Leveling)
 Fill, Void or Cavity Material: Apply either spray coating or sealant over the packing material (Item 3A) as follows:
 Spray Coating – Spray apply the liquid to cover the exposed top surface of the packing material (Item 3A) compressed and installed in the perimeter joint. Apply a minimum wet film thickness of 1/8" and overlap the spray coating a minimum 1/2" onto the adjacent curtain wall assembly (Item 2) and concrete floor assembly (Item 1). When the spraying process is stopped and the applied spray coating cures to an elastomeric film before installation process is restarted, then overlap the edge of the cured spray coating at least 1/8" with the liquid spray coating.
 Sealant – Apply non-sag or self leveling sealant to cover the exposed surface of the packing material (Item 3A) compressed and installed in the perimeter joint. Apply minimum 1/4" thickness non-sag or self leveling sealant over the packing material (Item 3A) and finish flush with the top surface of the concrete floor assembly (Item 1).
- C. Support Clips: (Optional) Recommended for installations subject to vertical shear movement. Use standard 20 GA galvanized steel Z-shaped clips having the following nominal dimensions: 1" wide by 3" high with a 2" upper leg and a 3" lower leg.

This material was extracted and drawn by 3M Fire Protection Products from the 2012 Product Directory, © Intertek

See response
dated 10/20/14

Fire Containment Insulation

Thermafiber® Safing™

- + Exceptional performance in Perimeter Fire Containment Systems
- + Provides life saving fire protection in rated assemblies
- + Fire resistant to temperatures above 2,000°F (1,093°C)
- + Easy to fabricate for through penetrations and firestopping
- + Conserves energy, reduces Greenhouse gas and carbon emissions
- + Resists moisture
- + Controls noise and sound



Up to
90%
Recycled
Content

LEED® Green Building Credits

Energy & Atmosphere	Materials & Resources	Indoor Environmental Quality	Innovation in Design
1	2.1, 2.2 3.1, 3.2 4.1, 4.2 5.1, 5.2	3.1, 3.2 9	1

Contributes to 33 LEED credits across 4 categories.



Thermafiber Safing and FireSpan™ insulation provide the critical components of the perimeter fire containment system in the 111 South Wacker Building in Chicago, IL. Thermafiber insulation also contributed to the building's LEED® Gold Rating.



Thermafiber Safing is compression fitted between FireSpan insulation and the concrete slab edge to create a perimeter fire containment system.

Thermafiber®
THE NAME IN MINERAL WOOL™



Thermafiber® Safing

Description:

THERMAFIBER Safing products are designed to provide life saving fire protection in perimeter fire containment systems, floor and wall penetrations, construction joints, and other firestopping applications. These products are noncombustible, moisture-resistant, noncorrosive, nondeteriorating, mildew-proof and vermin-proof. Thermafiber Safing provides thermal insulation, fire protection, and acoustical control in many different UL and Intertek (formerly OPL) listed fire containment assemblies of 1, 2, and 3-hr ratings.

Product Options:

- Safing 4.0 pcf, 2" or greater thickness, is available with or without a vapor retarding foil facing.
- Safing 6.0 pcf, 1.5" or greater thickness, is available with or without a vapor retarding foil facing.
- Recycled Content Options!:
 Special "Green" Fiber 90%
 Standard Fiber (Complies with EPA Preference Program) Minimum 75%
*Recycled content options other than standard must be specified at time of order.

Installation:

- All firestopping insulation should be installed per the architectural specification or system specific test description. All compressed Safing insulation should be installed per the listed assembly.
- Perimeter Installation: Safing insulation should be compression fitted between the slab edge and the FireSpan curtain wall insulation, leaving no voids.
 - Penetration Application: Safing insulation should be cut slightly larger than the opening and compression fitted into the opening, leaving no voids.
 - Construction Joint Application: Safing insulation should be compression fitted into the joint opening, leaving no voids.

Standard Sizes:

	Thickness*	Widths**	Lengths**
Safing 4.0 pcf	1" - 7"	16", 24", 36"	48", 60"
Safing 6.0 pcf	1" - 7"	16", 24", 36"	48", 60"
Tolerances	+1/4" - 1/8"	±1/8"	±1/2"

*Thicknesses are available in 1/2" increments. **Custom sizes are available upon request.

Technical Data:

Product Designation	Actual Density	Tested to ASTM C 518		Tested to ASTM E 84			
		"k" @ 75° [24°C] BTU.in/hr.sq. ft. °F	"R" value per inch of thickness***	Unfaced		Foil Faced	
				Flame Spread	Smoke Developed	Flame Spread	Smoke Developed
Safing	4.0 pcf	0.24	'R' = 4.2	0	0	25	0
Safing	6.0 pcf	0.24	'R' = 4.2	0	0	25	0

***R = thickness divided by 'k'

Fire-Containment Tests Per ASTM E 2307

Safing insulation is a critical component of any perimeter fire containment system. Thermafiber has performed decades of testing in all of the containment systems listed below. For more complete test information, see SA707, THERMAFIBER Life-Safety Fire Containment Systems technical catalog or UL and Intertek (formerly OPL) Directories. For a full listing of containment systems visit www.thermafiber.com and click on Fire Rated Assemblies. UL Reference = TYPE SAF

- Aluminum Spandrel Curtain Wall Fire Containment
- Steel Stud-Framed/Gypsum Sheathing Curtain Wall Fire Containment
- Glass Spandrel Curtain Wall Fire Containment
- Granite Spandrel Curtain Wall Fire Containment
- Precast Concrete Spandrel

Standards Compliance:

- Safing Insulation meets the following:
- ASTM C 665 Non-corrosive, Type I, III
 - ASTM C 612 Type IA, IB, II
 - ASTM E 136 Rated Non-combustible per NFPA Standard 220
 - ASTM E 96 Unfaced, 50 Perms as tested
 - ASTM E 96 Foil Faced, 0.02 Perms as tested
 - ASTM C 1104 Absorbs less than 1% by volume
 - ASTM E 814 or UL 1479 Safing Insulation used in conjunction with an approved fill, void, or cavity material sealant or other approved material in through - penetration firestop systems.
 - UL 2079 Safing Insulation used in conjunction with an approved fill, void or cavity material in construction joint systems
- Safing products are approved by: New York City Board of Standards & Appeals - (under BSA 39-74-SM & accepted by MEA-209-82-M, Vol. 4).

Thermafiber Insolutions®:

Thermafiber offers industry leading technical and engineering assistance to architects, specifiers, and contractors. These services include CAD drawings, engineering judgments, LEED® Credit Information, product recommendations, and customized products. Contact our technical services department at 1-888-834-2371, or email technicalservices@thermafiber.com.

For Further Information:

For additional information about these or other Thermafiber products contact us at 1-888-834-2371 or visit our website www.thermafiber.com.

Notice:

THERMAFIBER, Inc. shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. THERMAFIBER liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing within thirty (30) days from date it was or reasonably should have been discovered.

Submittal Approvals:

Job Name	
Contractor	Date

