

FIRESTOP SUBMITTAL PACKAGE

Webster University

PROJECT:

I.S.B.
St Louis , Mo

DATE:

May 13, 2016

SUBMITTED BY:

Robert Mann
FM Global Contractor
Rebel Inc
#1 Rebel Parkway
Belleville, IL 62226





#	UL SYSTEM	DESCRIPTION	PRODUCT(S)
1	CWD1014	Aluminum framed curtain wall with glass/aluminum/stone spandrel panels. Reduces spandrel panel height and vision panel sill height. No stiffener tee. Thermafiber Impasse System with 2" 8 pcf CW insulation.	AS Elastomeric Spray

GENERAL CERTIFICATE OF COMPLIANCE

PRODUCT DATA SHEETS

- 1 AS200 Elastomeric Spray
- 2 Curtainwall Insulation (Thermafiber*)
- 3 Safing Insulation (Thermafiber*)

MATERIAL SAFETY DATA SHEETS

- 1 AS200 Elastomeric Spray
- 2 Curtainwall Insulation (Thermafiber*)

IMPORTANT NOTICE:

This submittal is comprised of user selected documents that have been assembled using an automatic printing and archiving system. Use of the products or designs referenced herein are at the sole discretion of the installer, specifier, or other designated project decision maker. Specified Technologies Inc (STI) makes no guarantees nor recommendations regarding the applicability of the products or designs contained in this document to the referenced project.



System No. CW-D-1014

F Rating - 2 Hr

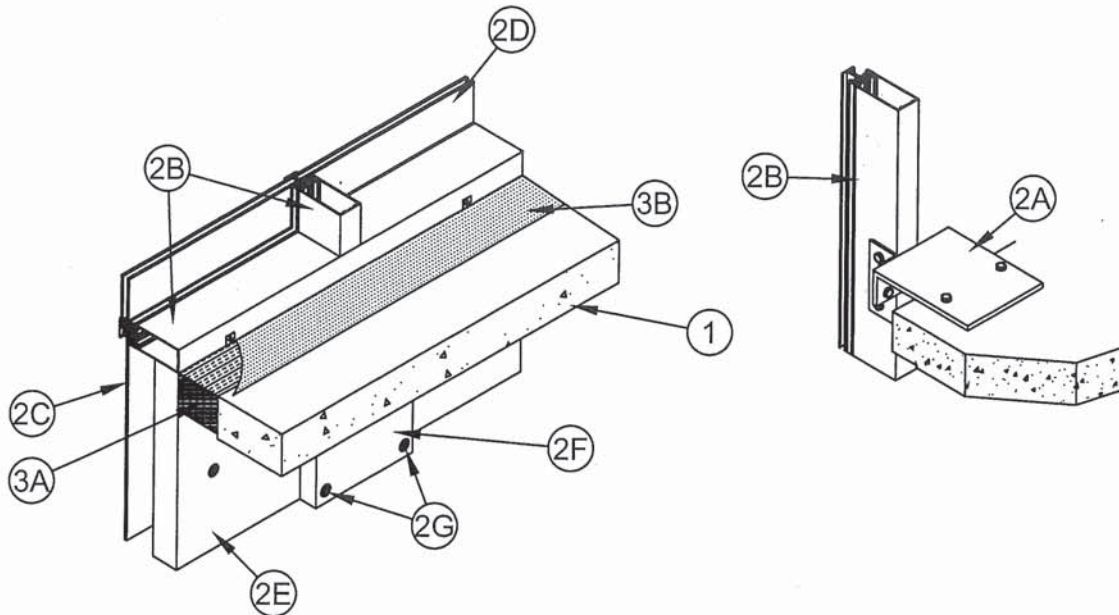
T Rating - 1/2 Hr

Linear Opening Width - 4 In. Max

L Rating At Ambient - Less Than 1 CFM/sq ft

L Rating At 400 F - Less Than 1 CFM/sq ft

Class II Movement Capabilities - 5% Vertical Shear



1. **Floor Assembly** - Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m³) structural concrete.
2. **Curtain Wall Assembly** - The curtain wall assembly shall incorporate the following construction features:
 - A. **Mullion Mounting Brackets** - Min 3 in. (76 mm) by 3 in. (76 mm) by 1/4 in. steel angles attached through the mullion on each side with min 3/8 in. (10 mm) diam steel bolts with steel nuts and washers. The brackets are attached to a min 8 in. (203 mm) by 3-1/4 in. (83 mm) by 1/2 in. (13 mm) thick steel angles with a min 4 in. (51 mm) long with min 1/2 in. (13 mm) diam steel bolts with steel nuts and washers. The 8 in. (203 mm) by 3-1/4 in. (83 mm) angle is secured to the top of floor with two min 1/2 in. (13 mm) diam steel masonry anchors in conjunction with steel washers.
 - A1. **Mullion Mounting Brackets** - As an alternate to Item 2A, min 8 in. (203 mm) wide by 3/4 in. (19 mm) thick extruded aluminum Halfen mounting brackets with one nom 2 in. (51 mm) high leg for support and attachment of mullion and with one leg at least 6 in. (152 mm) longer than width of linear opening between floor assembly and mullion. Mounting bracket attached to top of floor with two min 1/2 in. (13 mm) diam steel masonry anchors in conjunction with washer plates supplied with mounting bracket.
 - B. **Framing** - The two-piece rectangular tubing mullions (vertical members) and transoms (horizontal members) shall be min 2-1/2 in. (64 mm) wide by 7-1/2 in. (191 mm) deep and shall be formed from min 0.100 in. (2.5 mm) thick aluminum. Mullions spaced max 60 in. (1.52 m) OC and secured to mullion mounting brackets (Item 2A) at each floor level. Interior face of mullions to be max 4 in. (102 mm) from edge of floor assembly. Transoms to be spaced min 24 in. (610 mm) OC. The minimum height from the top of the floor to the bottom of the vision panel sill is 0 in. The maximum height from the top of the floor to the bottom of horizontal transom is 3 in. (76 mm).



Specified Technologies Inc. 210 Evans Way Somerville, NJ 08876

Reproduced courtesy of Underwriters Laboratories, Inc.

Created or Revised: April 30, 2013

(800)992-1180 • (908)526-8000 • FAX (908)231-8415 • E-Mail:techserv@stifirestop.com • Website:www.stifirestop.com



CW-D-1014
PAGE 1 OF 2

- C. **Spandrel Panels** - The spandrel panels shall consist of one of the following types:
- Glass Panels** - Nom 1/4 in. (6 mm) thick opaque heat-strengthened glass. Each panel secured in position with aluminum pressure plates in conjunction with glazing gaskets and steel screws.
 - Aluminum Panels** - Nom 1/8 in. (3 mm) thick aluminum panels with 1/4 in. (6 mm) thick edges. Each panel secured in position with aluminum pressure plates in conjunction with gaskets and steel screws.
 - Stone Panels** - Nom 1-3/16 in. (46 mm) thick polished granite spandrel panels with 1 in. (25 mm) thick gauged edges. Each panel secured in position with aluminum pressure plates in conjunction with gaskets and steel screws.
- D. **Vision Panels** - Nom 1/4 in. (6 mm) thick transparent heat-strengthened glass or nom 1 in. (25 mm) thick insulated glass units with two layers of nom 1/4 in. (6 mm) thick transparent heat-strengthened glass separated by a 1/2 in. (25 mm) air space. Each panel secured in position with aluminum pressure plates in conjunction with glazing gaskets and steel screws.
- E. **Curtain Wall Insulation*** - Min. 2 in. (51 mm) thick mineral wool batt insulation faced on one side with aluminum foil/scrims vapor retarder. Impasse® Horizontal Hangers are installed in the insulation batt 6 in. (152 mm) from each mullion end and spaced max 16 in. (406 mm) OC across at the window sill transom. One Impasse® Vertical Hanger is installed along both vertical mullion sides of the insulation batt at 6 in. (152 mm) up from the bottom of the insulation batt. Insulation batt is then installed in spandrel area flush with the interior surface of the framing with no vertical or horizontal seams. Impasse® Horizontal Hangers are screw attached to top horizontal transom, Impasse® Vertical Hangers are screw attached to vertical mullions using min No. 10 by min. 1/2 in. (13 mm) self-drilling/self-taping screws. No attachment to the lower horizontal transom is required.
- F. **Mullion Covers - Curtain Wall Insulation*** - Nom 2 in. (51 mm) thick mineral wool batt insulation faced on one side with aluminum foil/scrims vapor retarder, supplied in min 24 by 48 in. (610 by 1219 mm) boards. Min. 12 in. (305 mm) wide strips to be centered over mullions secured to curtain wall insulation (Item 2E) with a min. of four Spiral Anchors (Item 2G) spaced a max 12 in. (305 mm) OC. Mullion covers to tightly abut the bottom of the forming material (Item 3A).
- THERMAFIBER INC - FIRESpan® 90**
- G. **Light Gauge Framing* - Spiral Anchor** - Galv steel wire spiral anchors used to secure the curtain wall insulation (Item 2F and 2G). Nom length of spiral anchors to be 3-3/4 in. (95 mm), spaced max 12 in. (305 mm) OC.
- THERMAFIBER INC - Spiral Anchor**
- H. **Aluminum Sandwich Panel** - (Optional, Not Shown) - Min 1/8 in. (3.2 mm) solid aluminum panel or aluminum composite panel installed on exterior surface of curtain wall insulation (Item 2E).
3. **Safing System** - Max separation between edge of floor assembly and face of framing members (at time of installation) is 4 in. (102 mm). The safing system is designed to accommodate vertical shear movement up to a max of 5 percent of its installed width. The safing system shall incorporate the following construction features:
- Forming Material*** - Nom 4 pcf (64 kg/m³) density mineral wool batt insulation. Batt sections cut to a 4 in. (102 mm) width and stacked to a thickness which is min 25 percent greater than the width of the linear gap between the curtain wall insulation and the edge of the concrete floor slab. The forming material is compressed and inserted cut-edge-first into linear gap such that its top surface is flush with the top surface of the floor assembly. A max of one tightly-butted seam is permitted between mullions. Additional piece of forming material to be friction-fit into gap between batt sections above mullion mounting clip at each mullion location.
- THERMAFIBER INC - SAF**
- Fill, Void or Cavity Material*** - Min 1/8 in. (3 mm) wet thickness (min 1/16 in. (1.5 mm) dry thickness) of fill material spray-applied over top of forming material and lapping min 1/2 in. (13 mm) onto the top surface of the floor and onto the curtain wall insulation (Item 2E) and mullion covers (Item 2F).

SPECIFIED TECHNOLOGIES INC - SpecSeal AS200 Elastomeric Spray or SpecSeal Fast Tack Spray

*Bearing the UL Classification Mark



Specified Technologies Inc. 210 Evans Way Somerville, NJ 08876

Reproduced courtesy of Underwriters Laboratories, Inc.
Created or Revised: April 30, 2013

(800)992-1180 • (908)526-8000 • FAX (908)231-8415 • E-Mail:techserv@stifirestop.com • Website:www.stifirestop.com



CW-D-1014
PAGE 2 OF 2



GENERAL CERTIFICATE OF CONFORMANCE

January 25, 2011

Description:

SpecSeal® Firestop Products; Pensil® Silicone Sealants; EZ-Path® Fire Rated Pathways; Ready® Sleeve Firestop Sleeves; STI Firestop Products

Included Products:

SpecSeal® Series SSS Intumescent Sealant	SpecSeal® Series LCI Intumescent Sealant	SpecSeal® Series LC Firestop Sealant
SpecSeal® Series ES Elastomeric Sealant	SpecSeal® Series SIL300 Silicone Sealant	SpecSeal® Series SIL300SL Silicone Sealant
Pensil® PEN300 Silicone Sealant	Pensil® PEN300SL Silicone Sealant	Pensil® PEN200 Silicone Foam
Type WF300 Firestop Caulk	SpecSeal® Series AS200 Elastomeric Spray	SpecSeal® Series FT Fast Tack™ Firestop Spray
SpecSeal® Series SSP Putty & Putty Pads	SpecSeal® Series EP PowerShield™ Box Insert	SpecSeal® Series SSM Firestop Mortar
SpecSeal® Series SSB Firestop Pillows	SpecSeal® Series CS Composite Sheet	SpecSeal® Series SSW Wrap Strips
SpecSeal® Series LCC Firestop Collars	SpecSeal® Series SSC Firestop Collars	SpecSeal® Series RTC Firestop Collars
SpecSeal® Series FP Firestop Plugs	SpecSeal® Series CD Cast-In Firestop Devices	FyreFlange™ Firestop Angle
EZ-Path® Series 22	EZ-Path® Series 33	EZ-Path® Series 44 or 44+
Ready™ Sleeve	Ready™ Sleeve Split	Ready™ Firestop Grommet
SpecSeal® Series SSAMW Mineral Wool	SpecSeal® SpeedFlex™ Fire Rated Joint Profile	

These products are tested to one or more of the following standards:

- ASTM E814 (ANSI/UL1479) Standard Test Method for Fire Tests of Penetration Firestop Systems
- ASTM E1966 (ANSI/UL2079) Standard Test Method for Fire-Resistive Joint Systems
- ASTM E119 (ANSI/UL263) Standard Test Methods for Fire Tests of Building Construction and Materials
- ASTM E2307 Standard Test Method for Determining Fire Resistance of Perimeter Fire Barrier Systems Using Intermediate Scale, Multi-Story Test Apparatus
- ASTM E1399 Standard Test Method for Cyclic Movement and Measuring the Minimum and Maximum Joint Widths of Architectural Joint Systems
- ASTM E84 (ANSI/UL723) Standard Test Method for Surface Burning Characteristics of Building Materials
- CAN/ULC S115 Standard Method of Fire Tests of Firestop Systems
- CAN/ULC S101 Standard Methods of Fire Endurance Tests of Building Construction and Materials
- IMO Resolution A.754(18)

Chemical Content Statement:

No asbestos, PCB's, lead, or water-soluble intumescent ingredients are used or contained in these products.

James P. Stahl Jr., CFPS
Vice President of Engineering

Paul M. Jankowski
Quality Control Manager

PRODUCT DATA SHEET



SERIES AS200 ELASTOMERIC SPRAY

APPLICATIONS

SpecSeal® Elastomeric Spray is designed primarily for the protection of construction joints, curtain wall sasing gaps, and certain through-penetrations.



PRODUCT DESCRIPTION

SpecSeal® Series AS200 Elastomeric Spray is a non-halogenated latex-based, highly elastomeric coating designed to provide passive smoke and fire protection in construction joints.

SpecSeal® Series AS200 Elastomeric Spray is engineered to adhere to virtually all construction surfaces and may be applied using airless spray equipment or with a brush (ideally for, but not limited to, small applications or touch ups).

SpecSeal® Series AS200 Elastomeric Spray dries to form a flexible shield against the propagation of fire. Its premium latex binder system is totally resistant to water and will not re-emulsify after drying. SpecSeal® Series AS200 Elastomeric Spray contains no inorganic fibers, asbestos, solvents.

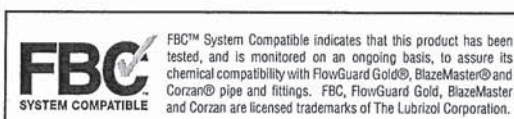
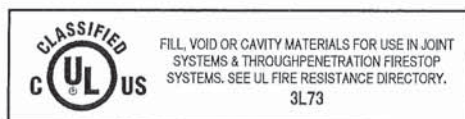
FEATURES

- **Water-Based** for easy installation and cleanup
- **Non-halogenated.**
- **Thixotropic** for high-build application.
- **Auto Bonding.**
- **Safe...** no solvents! No asbestos!
- **Flexible!**
- **Water Resistant!**
- **Low Abrasion** for longer pump life and less maintenance.
- **UL Classified.**
- **Tested** with spray applied fire resistive materials (SFRM).
- **Paintable**

PERFORMANCE

When applied to a wet film thickness of 1/8" (3.2 mm) over appropriate backing materials, SpecSeal® Series AS200 Elastomeric Spray has been successfully tested in one, two, three and four hour joints tested in accordance with ASTM E1966 (ANSI/UL2079) and CAN/ULCS115. This product has also been tested for use in Perimeter Fire Barrier Systems in accordance with ASTM E2307. Consult factory for individual system designs and application requirements.

LIMITATIONS: Use product as per manufacturer's instructions. Use only in applications per the manufacturer's tested and published designs or specific recommendations. End user must ultimately determine the suitability of the product and designs to his specific requirement and assumes responsibility for its use. **PRODUCT CONTAINS WATER AND IS CONDUCTIVE UNTIL DRY. DO NOT APPLY IN THE PRESENCE OF EXPOSED OR ENERGIZED ELECTRICAL CONDUCTORS.**



PHYSICAL PROPERTIES

PROPERTIES:	SERIES AS SPRAY
Color	Pale Blue and Red
Odor	Mild Latex
Specific Gravity	1.3
Solids Content by Weight	74%
Solids Content by Volume	66.4%
Flame Spread	0*
Smoke Developed	25*
Movement	±50%**
Coverage	12.8 sq ft/gal @ 1/8" (0.31 sq m/L @ 3.2 mm)
Viscosity	110,000 cps
pH	7.5

PROPERTIES:	SERIES AS SPRAY
Solvent Content	None
Plasticizer	None
In-Service Temp.	≤185° F (85° C)
Storage Temp.	40°F (4°C) - 95°F (35°C)
Drying Time	Tack Free 2 Hours
	Dry Through 24-48 Hours ^A
STC Rating	61
VOC Content ^B	10 g/L
Shell Life	18 Months

* Tested to ASTM E84 (UL723) @ 14% coverage.
 **500 Cycles per UL2079, AC308 (ICBO) and ASTM E1399
^ADependent on temperature and humidity.
^BPer ASTM D3960 EPA Fed. Reference Method 24



FIG. 1: METALLIC PIPE PENETRATIONS - CONCRETE/MASONRY FLOORS & WALLS

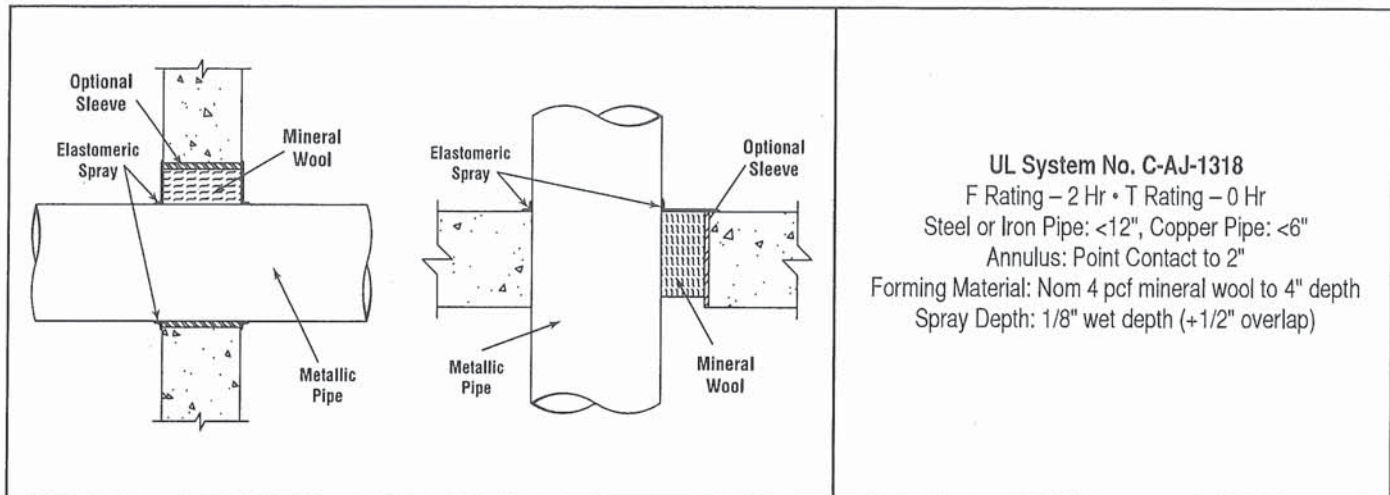


FIG. 2: SLAB-EDGE SAFING GAP APPLICATIONS

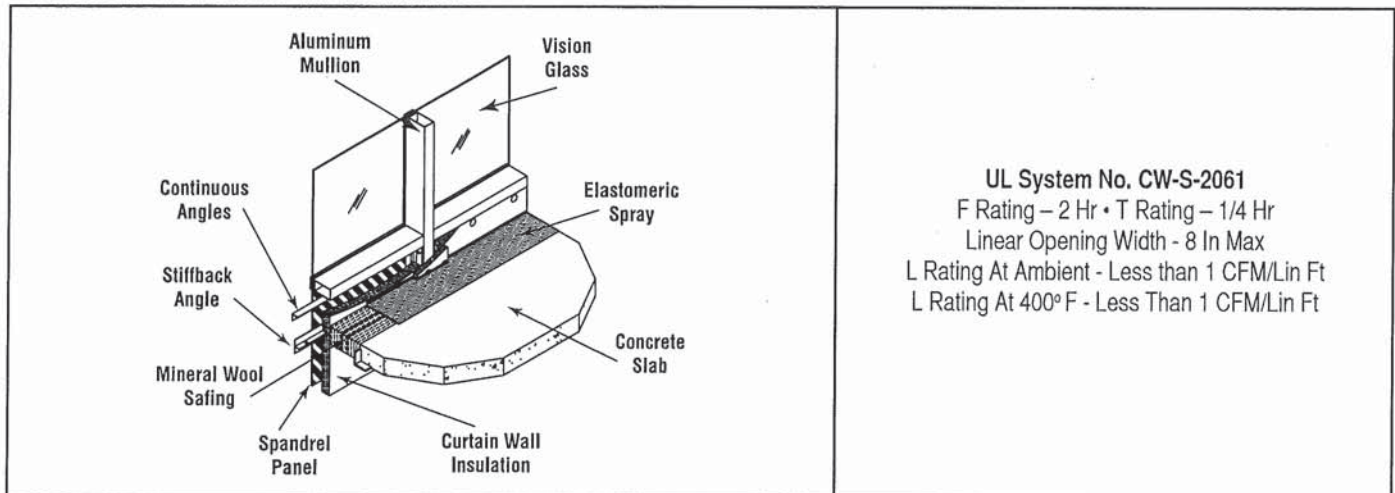
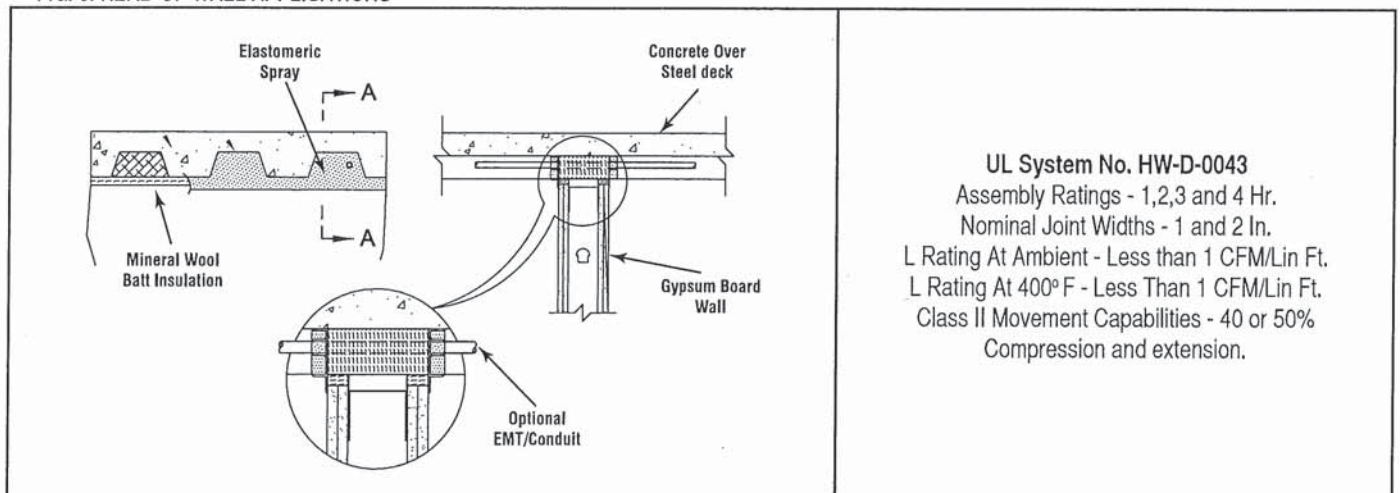


FIG. 3: HEAD-OF-WALL APPLICATIONS



SPECIFICATIONS

The fire protective joint coating shall be a water-based, non-halogenated elastomeric coating and shall contain no solvents, inorganic fibers, nor asbestos. The coating shall dry to form a flexible, moisture resistant film and shall adhere to all common construction surfaces. The coating shall provide up to 50 percent movement. The coating shall be thixotropic and shall be capable of being applied by brush or by airless spray. The approved coating shall be SpecSeal® Series AS200 Elastomeric Spray.

SPECIFIED DIVISIONS

DIV. 7	07 84 00	Through-Penetration Firestopping
DIV. 4	04 22 00	Concrete Unit Masonry
DIV. 7	07 21 00	Thermal Insulation
DIV. 8	08 44 00	Curtain Wall and Glazed Assemblies

INSTALLATION INSTRUCTIONS

GENERAL: Areas to be protected must be clean and free of oil, loose dirt, rust or scale. Recommended storage temperatures range between 40°F (4°C) and 95°F (35°C). Installation temperature shall be between 40°F (4°C) and 95°F (35°C). Although not a requirement, the optimal application temperature range is 60°F (16°C) to 90°F (32°C). When applying product at the lower end of the temperature range, warming the material to 70°F (21°C) will enhance drying characteristics. Drying time will vary according to prevailing temperature and humidity. Allow to thoroughly dry before exposure to moisture.

Consult appropriate manufacturer's drawing for system design requirements. Forming or packing materials are required as an integral part of various system designs.

Coating may be applied by airless spray in a single pass up to 3/16" (4.8mm) wet coating depth. If applying by brush or spraying on vertical surfaces where coating appears to be prone to slumping, multiple coats or the application of a thin tack coat may be required. DO NOT ATTEMPT TO THIN PRODUCT BY ADDING WATER. When dry, may be painted using most non-solvent based paints.

MAINTENANCE

Inspection: Installations should be inspected periodically for subsequent damage. Following safety precautions listed below (See Precautionary Information) and pertinent installation guidelines, remove coating in damaged areas down to undamaged material. Reapply fresh coating material to original coating thickness.

TECHNICAL SERVICE

Specified Technologies Inc. provides toll free technical support to assist in product selection and appropriate installation design. UL Systems, Material Safety Data Sheets and other technical information is available at the Technical Library at www.stifirestop.com.

PRECAUTIONARY INFORMATION

Consult Material Safety Data Sheet for additional information on the safe handling and disposal of this material. Wash areas of skin contact with soap and water. Avoid contact with eyes. The use of an OSHA or NIOSH approved mask for dust and mist environment is recommended. Apply in areas with adequate ventilation.

AVAILABILITY

SpecSeal® Series AS200 Elastomeric Spray is available worldwide from authorized distributors. Consult factory for the names and locations of the nearest sales representatives or distributors. 



TABLE A: APPLICATION EQUIPMENT

NOTICE: Spray application of SpecSeal Elastomeric Spray requires airless spray equipment meeting the following specifications:

Working Pressure: Min. 2500 PSI (172 Bar)

Delivery: Min. .72 U.S. gpm (2.7 l/min.) recommended

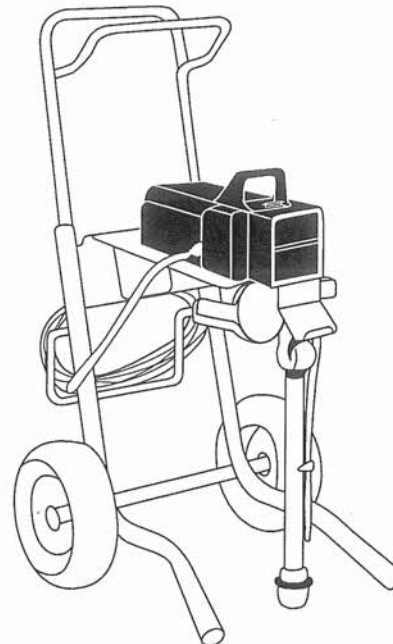
Spray Tip Orifice: 0.023" to 0.026" (0.58 to 0.66 mm) recommended

Wetted Parts All seals and contact surfaces suitable for contact with latex emulsions.

A minimum 3/8" (9.5 mm) fluid line is required, a 1/2" (13 mm) line is preferred. Consult pump manufacturer for long hose runs or lifts to higher elevations. A reversible spray tip is recommended. A 6" (152 mm) fan pattern is suggested to minimize overspray.

The following airless spray equipment has demonstrated suitability for application of this product. STI makes no warranties concerning the suitability or use of this equipment and has no affiliation of any kind with its manufacturer.

Manufacturer	Model Number & Description
Titan Tool Inc.	740ix Electric Airless Sprayer
Graco Inc.	Ultra Max II 695 Electric Airless Sprayer



ORDERING INFORMATION

SpecSeal® Elastomeric Spray is available in 5 gal. pails, 55 gal. drums are available on a special order basis.

AS205	Pale Blue Color	5 gal. Pail	1,155 cu. in. (19 liters)
AS205R	Red Color	5 gal. Pail	1,155 cu. in. (19 liters)



CITY OF NEW YORK MEA 310-99-M

Important Notice: All statements, technical information, and recommendations contained herein are based upon testing believed to be reliable, but the accuracy and completeness thereof is not guaranteed.

WARRANTY: Specified Technologies Inc. manufactures its goods in a manner to be free of defects. Should any defect occur in its goods (within one year), Specified Technologies Inc., upon prompt notification, will at its option, exchange or repair the goods or refund the purchase price.

Limitations and Exclusions: THIS WARRANTY IS IN LIEU OF ALL OTHER REPRESENTATIONS EXPRESSED OR IMPLIED (INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR USE) AND UNDER NO CIRCUMSTANCES SHALL SPECIFIED TECHNOLOGIES INC. BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL PROPERTY DAMAGE OR LOSSES. PRIOR TO USE, THE USER SHALL DETERMINE THE SUITABILITY OF THE PRODUCT FOR ITS INTENDED USE, AND THE USER ASSUMES ALL RISKS AND LIABILITY FOR SUBSEQUENT USE.

No statement or recommendation not contained herein shall have any force or effect unless in an agreement signed by officers of seller and manufacturer.

MADE IN THE USA – COPYRIGHT © 2012 SPECIFIED TECHNOLOGIES INC.



Specified Technologies Inc.

210 Evans Way, Somerville NJ 08876 USA • Phone: 800.992.1180 • Fax: 908.526.9623





THERMAFIBER® FIRESpan™ and FIRESpan SS Insulations

UL- and OPL-labeled* blankets with highly effective fire- and smoke-resistant qualities for tested curtain wall assemblies.

- Provide 1 and 2-hr. fire protection in a variety of rated exterior curtain wall assemblies.
- Available in unfaced felt (plain) or with a tough scrim-reinforced foil facing (FSP) that serves as a vapor retarder.
- Optional dark-colored insulation for backing glass spandrel panels.
- Two products, FIRESpan™ and FIRESpan™ SS, provide for a variety of fire-protection applications.
- Products especially designed for UL and OPL Design fire-containment-rated assemblies.

Description

THERMAFIBER® FIRESpan™ and FIRESpan™ SS Insulations are mineral-wool-type insulations that resist temperatures up to 2,000 °F (1,093 °C), thus offering superior fire protection in rated curtain wall assemblies. They are UL- and OPL-labeled products especially intended for tested UL and OPL Designs. These products are noncombustible per Standard NFPA 220 when tested in accordance with ASTM E 136, and are moisture-resistant, noncorrosive, nondeteriorating, mildew-proof and vermin-proof. They permit dry construction for all-year-round work. Also, these products are available plain or faced with FSP (scrim-reinforced foil) that serves as a vapor retarder, and in standard color or dark color for backing glass spandrel panels.

Two different products permit THERMAFIBER® FIRESpan™ Curtain Wall Insulations to be used in many different fire-containment assemblies of 1 and 2-hr. ratings.

Fire Containment

The first priority in building safety is containment of both fire and smoke to the area of origin. For mid- and high-rise buildings, especially, that means that fire and smoke must be prevented from spreading to the next floor. Since the floor assembly is typically a fire-rated system, a possible route for the fire spread is through and up the exterior curtain wall system. THERMAFIBER® Life-Safety Fire Containment Systems are assemblies designed to protect perimeters by combining THERMAFIBER® Safing Insulation, THERMAFIBER® FIRESpan™ Curtain Wall Insulation and 3M/Thermafiber FIRE BARRIER™ Spray, THERMAFIBER® SMOKE SEAL™ Compound or FIRECODE® Compound. All four model building codes (BOCA, SBCCI, ICBO and IBC) require that the gap at the slab edge/curtain wall interface be treated to maintain the same fire integrity rating as the floor-ceiling. THERMAFIBER® Life-Safety Fire Containment Systems have been tested in many UL- and OPL-listed systems and are accepted or recognized (ICBO ER-2331, California State Fire Marshal, OSHPD) as maintaining fire containment from floor to floor.

Installation (Aluminum-Framed Application)

Mechanically attach FIRESpan™ Insulation to vertical aluminum mullions with suitable mechanical fasteners approved by the architect. Adhesive attachments are not acceptable. Cover aluminum mullions with 1" or 2" thick, 6" or 8" wide THERMAFIBER® FIRESpan™ Insulation depending on the assembly specifications. Place backing/reinforcement members horizontally at the safing line and behind the outer surface of the curtain wall insulation to prevent bowing of the curtain wall insulation due to pressure applied from compression-fit safing insulation. Typical reinforcement members include hat channels and "L" and "T" angles.

Install THERMAFIBER® Safing Insulation, of proper width (2" to 8" max. opening), in safe-off area (foil side up, if required) between THERMAFIBER® FIRESpan™ Insulation and floor slabs, on safing clips spaced as required, 24" or 12" o.c. maximum, leaving no voids. Install safing wider than opening to ensure compression fit. Install proper topping material, such as THERMAFIBER® SMOKE SEAL™ Compound, FIRECODE® Compound or FIRE BARRIER™ Spray, as indicated in the specific test description or architectural specification.

In steel-stud-framed applications, screw-attach type X gypsum sheathing or cement board, 1/2" or 5/8" thick, to the exterior face of the studs. Friction-fit FIRESpan™ SS Insulation between steel studs.

Technical Data

Surface Burning Characteristics (According to ASTM E 84)

Product Designation	Flame Spread	Smoke Developed
FIRESpan/FIRESpan SS Regular (Unfaced)	15	0
FIRESpan/FIRESpan SS Foil-Faced	25	0

Products have a class A interior finish rating per NFPA 101, life safety code. Values apply to both standard color and dark curtain wall insulation.

Thermal Conductivity and Thermal Resistance (According to ASTM C 518)

"k" @ 75°F (24°C) For insulation only									
Product Designation	BTU · in./hr. · sq. ft. · °F	1" thick		1-1/2" thick		2" thick		2-1/2" thick	
		R ⁽¹⁾	U ⁽²⁾	R ⁽¹⁾	U ⁽²⁾	R ⁽¹⁾	U ⁽²⁾	R ⁽¹⁾	U ⁽²⁾
FIRESpan SS	0.25 ⁽³⁾	—	—	—	—	8.0	0.13	10.0	0.100
FIRESpan	0.23 ⁽³⁾	4.3	0.23	6.5	0.15	8.7	0.11	10.9	0.092

*UL is an abbreviation for Underwriters Laboratories, Inc.; OPL is an abbreviation for Omega Point Laboratories, Inc.

"k" @ 75°F (24°C) For insulation only									
Product Designation	BTU · in./hr. · sq. ft. · °F	3" thick R ⁽¹⁾	3" thick U ⁽²⁾	3-1/2" thick R ⁽¹⁾	3-1/2" thick U ⁽²⁾	4" thick R ⁽¹⁾	4" thick U ⁽²⁾	6" thick R ⁽¹⁾	6" thick U ⁽²⁾
FIRESpan™ SS	0.25 ⁽³⁾	12.0	0.083	14.0	0.071	16.0	0.062	24.0	0.042
FIRESpan™	0.23 ⁽³⁾	13.0	0.076	15.2	0.066	17.4	0.057	—	—

(1) R = thickness divided by "k." (2) U value shown is for insulation only; however, in practice U values represent the overall heat transmission of all components in an assembly (U = 1 divided by total R).

(3) Values apply to both standard color and dark curtain wall insulation.

Product Data	Standards Compliance	THERMAFIBER® FIRESpan™ and FIRESpan™ SS meet the following: ASTM C 665 - Federal Specification HH-I-521F—Curtain wall insulation as Types I and III, Class A, Category 1 (0.02 perm, tested in accordance with ASTM E 96 procedure). ASTM C 612-00 - Federal Specification HH-I-558B—Curtain wall insulation (all) as Types IA, IB (0.02 perm, tested in accordance with ASTM E 96 procedure); curtain wall insulation (FIRESpan™) as Types II, III, IVA and IVB (0.02 perm, tested in accordance with ASTM E 96 procedure); curtain wall (FIRESpan™ SS) as Type II. ASTM E 136 - Rated noncombustible as defined by NFPA Standard 220 when tested according to ASTM E 136. ASTM C 553 - THERMAFIBER® Insulations absorb less than 1% moisture by weight and volume. Curtain wall products are approved by: New York City Board of Standards & Appeals - 0.02 perm, foil-faced, tested in accordance with ASTM E 96 procedure (under BSA 214-73-SM & accepted by MEA-209-82). Also, MEA-189-93-M and MEA-190-93-M.
	Fire-Containment Tests	For more complete test information, see SA707, THERMAFIBER® Life-Safety Fire Containment Systems technical catalog, or UL and OPL Directories. Aluminum Spandrel Curtain Wall Fire Containment: 2 hr.—UL Design CW-S-2002. Steel Stud-Framed/Gypsum Sheathing Curtain Wall Fire Containment: 2 hr.—UL Design CW-S-1001. Glass Spandrel Curtain Wall Fire Containment: 2 hr.—UL Design CW-S-2001; UL-Witnessed test, report dated 9-30-94.
	Composition and Materials	THERMAFIBER® Blankets are a mineral fiber material manufactured from slag, a by-product of iron ore reduction, and naturally occurring rock.
	Warranty	System performance following substitution of materials or compromise in assembly design cannot be certified and may result in failure of fire performance under certain conditions. Products and systems provided by Thermafiber LLC are warranted to be free from defects in material workmanship. Contact Thermafiber LLC for complete warranty details.
	Storage	Store in a cool, dry place.

Submittal Approvals:

Job Name				
Contractor				Date
Trademarks THERMAFIBER, FIRESpan and THE NAME IN MINERAL WOOL are trademarks of Thermafiber LLC. SMOKE SEAL and FIRECODE are trademarks of United States Gypsum Company. FIRE BARRIER Spray name is jointly held by Thermafiber LLC and 3M Fire Protection Products.	Note Products described here may not be available in all geographic markets. Consult your local sales office or representative for information.	Notice We 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. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.	Safety First! Follow good safety and industrial hygiene practices while handling and installing products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.	Health Aspects Information about health aspects of using THERMAFIBER Curtain Wall Insulation products are thoroughly explained in INT279, "Summary of Health & Safety Assessment & Recommended Work Practices" Booklet and INT117, "Health & Safety Assessment & Recommended Work Practices, Second Edition" (complete report).



3711 West Mill Street
 Wabash, IN 46992-8687
 1-888-TFIBER1 (834-2371)
<http://www.thermafiber.com>



THERMAFIBER® Safing™ Insulation

UL- and OPL-labeled* safing insulation for firestops and fire-containment systems

- Firestop product for curtain wall fire and smoke containment systems, floor and wall penetrations, and head-of-wall construction joints.
- Fire resistant and noncombustible.
- Economical; installs quickly and easily.
- Aids sound control in many assemblies.
- Available in unfaced felt (plain) or with a tough scrim-reinforced foil facing (FSP).
- Durable; nondeteriorating and noncorrosive.

Description

THERMAFIBER® Safing Insulation is a mineral-wool-type insulation that resists temperatures up to 2,000 °F (1,093 °C), thus offering superior fire protection in a wide variety of fire-rated applications. It is a UL- and OPL-labeled product especially intended for tested UL and OPL Designs, as well as many other fire- and smoke-tested assemblies. This product is noncombustible per Standard NFPA 220 when tested in accordance with ASTM E 136, and moisture-resistant, noncorrosive, nondeteriorating, mildew-proof and vermin-proof. It permits dry construction for all-year-round work. Also, THERMAFIBER® Safing Insulation is available plain, or with scrim-reinforced foil facing (FSP) that serves as a vapor retarder and/or smoke barrier.

THERMAFIBER® Safing Insulation is compatible with both THERMAFIBER® Curtain Wall CW Insulations and THERMAFIBER® FIRESpan™ Insulations.

Perimeter Fire Containment, Penetrations and Construction Joints

THERMAFIBER® Safing Insulation is a key element in a wide variety of fire-tested construction assemblies. It is used with THERMAFIBER® Curtain Wall and FIRESpan™ Insulations in applications to contain both fire and smoke to the area of origin. For mid- and high-rise buildings, especially, that means that fire and smoke must be prevented from spreading to the next floor. Since the floor assembly is typically a fire-rated system, a possible route for the fire spread is through and up the exterior curtain wall system. THERMAFIBER® Safing Insulation is also used in conjunction with various fill, void or cavity materials, such as sealants and caulks, in wall and floor penetration (poke-through) applications, as well as in head-of-wall construction joints.

It is important to note that one of the most valuable yet misunderstood applications of THERMAFIBER® Safing Insulation is its use in exterior curtain wall assemblies to safe-off the opening between concrete floor slabs and the curtain wall assemblies. Many people still believe the myth that all thermal insulations are the same when used in the curtain wall spandrel panels as long as THERMAFIBER® Safing Insulation is used in the assembly. **(This is simply not true).** Actual fire tests have proven that low-melt-point insulations, such as fiberglass types, will disintegrate quickly once exposed to fire, leaving the curtain wall unprotected. Then, as the now-unprotected curtain wall disintegrates or falls away, the safing insulation will no longer be supported, and the fire will spread to the floor(s) above. Effective perimeter fire containment can only be achieved when a fire-compatible product with the ability to resist high temperatures (such as THERMAFIBER® Curtain Wall Insulations or THERMAFIBER® FIRESpan™ Insulations) is used in conjunction with the THERMAFIBER® Safing Insulation, acting together as a system. (See TF871 and TF686 for additional information).

Installation

Perimeter Installation

In curtain wall fire-containment applications, THERMAFIBER® Safing Insulation fills the void between the slab edge and the curtain wall insulation to contain fire. Foil-faced insulation impedes the passage of smoke and noxious gases. Install THERMAFIBER® Safing Insulation, of proper width (2" to 8" max. opening), in safe-off area (foil side up, if required) between THERMAFIBER® FIRESpan™ or CW Curtain Wall Insulation and floor slabs, on safing "Z" clips spaced as required, 24" or 12" o.c. maximum, leaving no voids. Install safing wider than opening to ensure compression fit. See specific test description for proper installation details. Install proper topping material, such as THERMAFIBER® SMOKE SEAL Compound, FIRECODE Compound or FIRE BARRIER Spray, as indicated in the specific test description or architectural specification.

Penetration Application

THERMAFIBER® Safing Insulation provides a noncombustible, fire-resistant forming/packing material for many types of penetrations in walls and floor/ceilings. In all poke-through penetrations, clean substrate of dirt, dust, grease, oil, efflorescence, loose material or other matter. With a serrated knife, cut THERMAFIBER® Safing Insulation slightly wider than the opening. Compress and tightly fit the minimum thickness and density of insulation required (per system specification) completely around penetrant. For floor slab openings, compress or install THERMAFIBER® Safing Insulation according to details indicated in the specific test description or architectural specification to seal completely around cables, ducts, piping or other utilities.

Construction Joint Application

THERMAFIBER® Safing Insulation is also used as a forming material in head-of-wall construction joints. It is compressed and slid into joint openings to completely fill the gap between the top of the wall and the steel deck.

* UL is an abbreviation for Underwriters Laboratories Inc.; OPL is an abbreviation for Omega Point Laboratories, Inc.

Technical Data	Surface Burning Characteristics (According to ASTM E 84)	Product Designation	Flame Spread	Smoke Developed
		Safing, Regular (Unfaced)	15	0
		Safing (Foil-Faced)	25	0

Products have a class A interior finish rating per NFPA 101, life safety code.

Product Density	Approximate Density Tolerance—pcf ⁽¹⁾				Minimum Thickness	Application Method
	Product Designation	Density	Tacoma	Wabash		
	Safing	4.0	±0.5	-0.5 +1.0	1"	safing clips or compression fit
	Safing	6.0	±0.75	-0.75 +2.0	1-1/2"	safing clips or compression fit
	Safing	8.0	±1.0	-1.0 +2.0	1"	safing clips or compression fit

(1) On packaging weight basis.

Thermal Conductivity and Thermal Resistance (according to ASTM C518)	Product Designation	Density	"k" @ 75 °F (24 °C)		"R" ⁽¹⁾ value for insulation only
			BTU · in./hr. · sq. ft. · °F		
	Safing	4.0 pcf	0.25		"R" = 4.0 per inch of thickness.
	Safing	6.0 pcf	0.24		"R" = 4.16 per inch of thickness.
	Safing	8.0 pcf	0.23		"R" = 4.3 per inch of thickness.

(1) R = thickness divided by "k."

Product Data	Standards Compliance
	THERMAFIBER® Safing Insulation meets the following:
	ASTM C 665 - Federal Specification HH-I-521F—Safing insulation as Types I and III, Class A, Category 1.
	ASTM C 612-00 - Federal Specification HH-I-558B—Safing insulation as Types IA, IB and II.
	ASTM E 136 - Rated noncombustible as defined by NFPA Standard 220 when tested according to ASTM E 136.
	ASTM E 814 or UL 1479 - Safing insulation used in conjunction with SMOKE SEAL Compound, FIRECODE Compound, FIRE BARRIER Spray, or other approved material.
	UL 2079 - Safing insulation used in conjunction with various fill, void or cavity materials, such as sealants and caulks.
	ASTM C 553 - THERMAFIBER® Insulations absorb less than 1% moisture by weight and volume.
	Safing insulation products are approved by: New York City Board of Standards & Appeals —619-48-SM & 39-74-SM.

Composition and Materials	THERMAFIBER® Blankets are a mineral fiber material manufactured from slag, a by-product of iron ore reduction, and naturally occurring rock.
---------------------------	--

Warranty	System performance following substitution of materials or compromise in assembly design cannot be certified and may result in failure of fire performance under certain conditions. Products and systems provided by Thermafiber LLC are warranted to be free from defects in material workmanship. Contact Thermafiber LLC for complete warranty details.
----------	--

Storage	Store in a cool, dry place.
---------	-----------------------------

Submittal Approvals:

Job Name		
Contractor		Date

Trademarks
THERMAFIBER, FIRESpan and THE NAME IN MINERAL WOOL are trademarks of Thermafiber LLC. SMOKE SEAL and FIRECODE are trademarks of United States Gypsum Company. FIRE BARRIER Spray name is jointly held by Thermafiber LLC and 3M Fire Protection Products.

Note
Products described here may not be available in all geographic markets. Consult your local sales office or representative for information.

Notice
We 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. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

Safety First!
Follow good safety and industrial hygiene practices while handling and installing products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read material safety data sheets and related literature on products before specification and/or installation.

Health Aspects
Information about health aspects of using THERMAFIBER® Curtain Wall Insulation products are thoroughly explained in INT279, "Summary of Health & Safety Assessment & Recommended Work Practices" Booklet and INT117, "Health & Safety Assessment & Recommended Work Practices, Second Edition" (complete report).



3711 West Mill Street
Wabash, IN 46992-8687
1-888-TFIBER1 (834-2371)
<http://www.thermafiber.com>



Material Safety Data Sheet

14-AUGUST-2014

SpecSeal® AS200 ELASTOMERIC SPRAY

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

PRODUCT NAME.....SpecSeal® AS200 SPRAY
CHEMICAL FAMILY.....Mixture

Company Identification

MANUFACTURER/DISTRIBUTOR

Specified Technologies Inc.
210 Evans Way
Somerville, NJ 08876

PHONE NUMBERS

Product Information : 1-908-526-8000
Emergency : 1-800-255-3924

HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

* Possible skin and eye irritant. Paste. *

Potential Health Effects:

EYE: Contact may cause irritation.

SKIN: Contact may cause irritation.

INGESTION: Relatively non-toxic.

INHALATION: Irritation of the nose, throat, and lungs may result from over-exposure to vapors or mist.

CHRONIC (CANCER) INFORMATION: Not classified as carcinogenic.

LONG TERM TOXIC EFFECTS: None known.

COMPOSITION/INFORMATION ON INGREDIENTS

Proprietary mixture containing in part:

INGREDIENT NAME

ACRYLIC COPOLYMER

CALCIUM CARBONATE

TITANIUM DIOXIDE

ALUMINA TRIHYDRATE

CAS NUMBER

Non Hazardous

1317-65-3

13463-67-7

21645-51-2

FIRST AID MEASURES

First Aid

INHALATION: Remove to fresh air.

SKIN CONTACT: Wash thoroughly.

EYE CONTACT: Irrigate eyes with running water for at least 15 minutes. Get medical attention if irritation develops.

INGESTION: None applicable.

FIRE FIGHTING MEASURES

Not a fire hazard.

EXTINGUISHING MEDIA:.....Dry Chemical; Carbon Dioxide; Foam; Water spray for large fires.

SPECIAL FIRE FIGHTING PROCEDURES:.....As for surrounding fire.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

HANDLING AND STORAGE

Store under ambient conditions. No special handling required.

EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION REQUIREMENTS:.....Safety glasses/goggles.

SKIN PROTECTION REQUIREMENTS:Gloves.

RESPIRATOR REQUIREMENTS:None.

VENTILATION REQUIREMENTS:.....If needed, use local exhaust ventilation to keep airborne concentrations below the TLV.

Exposure Guidelines

Exposure Limits

PEL(OSHA) : Particulates (Not Otherwise Classified) 15 mg/m³, 8 Hr. TWA, total dust 5 mg/m³, 8 Hr. TWA, respirable dust

TLV(ACGIH): None Established

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL FORM.....Paste

SPECIFIC GRAVITY.....1.25

PERCENT VOLATILES23+/-2

EVAPORATION RATE.....>1

BOILING POINT.....100 deg. C

SOLUBILITY IN WATER.....Infinitely dilutable

CARB VOC (Calculated)1.81 Wt. %

SCAQMD VOC (US EPA Method 24).....23 Grams/Liter

STABILITY AND REACTIVITY

STABILITY:This is a stable material.

CONDITIONS TO AVOIDStorage >55 deg. C

HAZARDOUS POLYMERIZATION:.....Will not occur.

INCOMPATIBILITIES:.....None special

TOXICOLOGICAL INFORMATION

Mixture not tested but based on components:

May be irritating to skin and eyes and may produce symptoms of nausea in poorly ventilated areas.

None of the components are listed as carcinogens.

ECOLOGICAL INFORMATION

No data.

DISPOSAL CONSIDERATIONS

Waste Disposal:

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

TRANSPORTATION INFORMATION

DOT – not regulated.

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

Section 313 Supplier Notifications.

This product contains no toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372

OTHER INFORMATION

NPCA-HMIS Rating

Health : 1

Flammability : 0

Reactivity : 0

Personal Protection rating to be supplied by user depending on use conditions.

STATE RIGHT-TO-KNOW LAWS

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated. While we do not specifically analyze these products, or the raw materials used in their manufacture, for substances on various state hazardous substances lists, to the best of our knowledge the products on this Material Safety Data Sheet contain no such substances except for those specifically listed below:

SUBSTANCES ON THE NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST PRESENT AT A CONCENTRATION OF 1% OR MORE (0.1% FOR SUBSTANCES IDENTIFIED AS CARCINOGENS, MUTAGENS OR TERATOGENS): Alumina, Titanium Dioxide.

WARNING: SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER:

None Known..

WARNING: SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM: None known.

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief accurate and reliable as of the data compiled. However, no representation, warranty, or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information.

Responsibility for MSDS :

Specified Technologies Inc.

210 Evans Way

Somerville, NJ 08876



MATERIAL SAFETY DATA SHEET THERMAFIBER® BONDED PRODUCTS

Thermafiber Inc.
3711 W. Mill Street Extended
Wabash, Indiana 46992

Page 1 of 2
Phone (260) 563-2111
Version Date: May 30, 2003
MSDS NO. 00001, Version 4

SECTION I PRODUCT IDENTIFICATION

PRODUCT(S): THERMAFIBER® Bonded Products

®Trademark of Thermafiber Inc.

SYNONYM: Insulation

CHEMICAL FAMILY: Slag wool.

SECTION II INGREDIENTS

MATERIAL	WT%	ACGIH TLV (mg/m ³)	OSHA PEL (mg/m ³)	CAS NUMBER
Slag wool fiber ¹	>95	10(T)/3(R)	15(T)/5(R)	65997-17-3
Phenolic resin	<5	(NE)	(NE)	9003-35-4

If laminated, contains the following adhesive:

Vinyl alcohol polymer <1 (NE) (NE) 9002-89-5
(T) - Total (R) - Respirable (NE) - Not Established

¹OSHA and ACGIH recommended exposure level is 1 fiber/cc and NIOSH recommended exposure level is 3 fibers/cc. This material is slag wool. Other generic terms that are used or have been used to classify this material include mineral wool, stone wool, man-made mineral fiber (MMMF), and man-made vitreous fiber (MMVF). A more recent generic term that has appeared in the literature to describe these glass-like materials is synthetic vitreous fiber (SVF).

SECTION III HAZARD IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

ACUTE: The products are composed of mineral wool in a bound matrix. When these are cut or trimmed, especially with power tools, the resulting dust may cause transitory mechanical irritation to skin, eyes or respiratory tract.

EYES: Direct contact with eye can cause mechanical irritation.

SKIN: This material (in wet state or as dust) is not chemically harmful if it gets on the skin and is not immediately washed off. However direct contact of dust and mineral wool fibers with skin can cause skin irritation (mechanical) and itchiness.

INHALATION: Inhalation of dust can cause nose, throat, lungs and upper respiratory tract irritation. Persons exposed to dust may be forced to leave area because of nuisance conditions such as coughing, sneezing and nasal irritation.

INGESTION: No known effects.

CHRONIC: Persons with chronic or systemic skin or eye disease should use precautions and wear all personal protective equipment when working with this product.

SECTION IV FIRST AID MEASURES

EYES: In case of contact, immediately flush thoroughly with copious amounts of water occasionally lifting the lower and upper lids (to remove particulates). Get medical attention immediately. Contact lenses should not be worn when working with this product.

SKIN: Skin contact is not a chemical hazard. Mechanical action of fibers on skin can cause itchiness. Irritation of skin may occur with prolonged and repeated contact. Rinse with cool water, followed by washing with soap and warm water. A commercially available skin cream or lotion may be helpful to treat dry skin areas. Wash hands before eating or using restroom.

INHALATION: If exposed to excessive levels of dust, leave area of dust exposure and remain away until coughing and other symptoms

subside. Other measures are usually not necessary, however if conditions warrant, get medical attention.

INGESTION: No harmful or chronic effects expected. No specific recommendation. If gastric disturbance occurs, call physician.

TARGET ORGANS: Eyes, skin, lungs and respiratory system.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED: Pre-existing upper respiratory and lung disease such as, but not limited to, bronchitis, emphysema and asthma.

PRIMARY ROUTES OF ENTRY: Inhalation, eyes and skin contact. Note to physician: This product is a mechanical irritant, and is not expected to produce any chronic health effects from acute exposures. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.

SECTION V FIRE FIGHTING MEASURES

The products are non-combustible and do not pose a fire hazard. However, packaging material may burn.

Extinguishing Media: Carbon dioxide (CO₂), water, water fog, foam, dry chemical

Special Fire Fighting Procedures: No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

Unusual Fire and Explosion Hazards: None.

Special Fire Fighting Protective Equipment: Observe normal fire fighting procedures.

Flash Point (Method Used): Not applicable.

Upper and lower flammable limits in air: Not applicable.

Autoignition temperature: Not applicable.

Hazardous Combustion Products: Carbon dioxide, carbon monoxide and trace gases.

SECTION VI ACCIDENTAL RELEASE MEASURES

CONTAINMENT: Not necessary. Treat as inert material.

CLEAN UP: Pick up large pieces. Use gloves to avoid skin irritation. Vacuum dust, preferably with an industrial vacuum cleaner with high efficiency air filter. If sweeping is necessary, use dust suppressant such as water. Do not dry sweep dust accumulation or use compressed air for clean up. These procedures will help minimize potential exposures.

DISPOSAL: Dispose in sanitary landfill in accordance with local, state and federal requirements.

SECTION VII HANDLING AND STORAGE

HANDLING: Use protective equipment to avoid irritation as described in Section 8.

STORAGE: Warehouse storage should be in accordance with manufacturer's recommendations. Material should be kept dry and protected from the elements.

SECTION VIII EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general ventilation and local exhaust ventilation to meet TLV requirements of individual ingredients (see Section 2) and to control dusting conditions.

If cutting or trimming with power equipment, dust collectors and local ventilation should be used.

Avoid unnecessary exposure to dust and handle with care. Keep work area clean of dust and fibers by using an industrial vacuum cleaner with high efficiency filter or wetting down area with water. Never use compressed air and avoid dry sweeping.

EYE PROTECTION: Wear safety glasses with sideshields or goggles to avoid eye irritation.

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA-approved dust respirator in poorly ventilated areas, where local exhaust is not feasible, if TLV is exceeded, and/or when dusty conditions exist. Avoid prolonged and repeated breathing of dust.

OTHER CLOTHING: Wear tight fitting goggles and gloves when dusty conditions exist. Wear long-sleeved, loose fitting clothing at the

neck and wrists and minimize skin contact. Wash work clothing separately from other clothing. Rinse washer thoroughly after use.

SECTION IX PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance and Odor:** Tan or off yellow in color with low odor
- **Physical State:** Solid
- **Boiling Point:** Not applicable
- **Freezing Point:** Not applicable
- **Melting Point:** 2100° F (1150° C)
- **Specific Gravity (H₂O=1):** Not applicable
- **Solubility in Water:** Insoluble
- **pH Range:** Not applicable
- **Vapor Pressure:** Not applicable
- **Evaporation Rate (in-Butyl Acetate=1):** Not applicable
- **Percent Volatile:** Not applicable
- **Volatile Organic Compounds:** Not applicable

SECTION X CHEMICAL STABILITY

STABILITY: Stable

REACTIVITY: Not reactive

INCOMPATIBILITY: Acids (gives off H₂S under certain acidic conditions)

HAZARDOUS POLYMERIZATION: Will not occur

HAZARDOUS DECOMPOSITION: Oxides of carbon and smoke would be produced at high temperatures with thermal decomposition.

SECTION XI TOXICOLOGICAL INFORMATION

ACUTE DATA:

SLAG WOOL FIBER (65997-17-3)

Oral LD₅₀RAT: Not determined

Dermal LD₅₀RAT: Not determined

Skin Irritation: Mechanical Irritant

Eye Irritation: Mechanical Irritant

Contact with mineral wool fibers may cause temporary eye and skin irritation (mechanical). When products are handled continually, the skin irritation generally diminishes.

Chronic Data: Inhalation: In October 2001, the International Agency for Research on Cancer (IARC) classified mineral wool fibers (rock or slag) as Group 3 (not classifiable as to carcinogenicity to humans).

SECTION XII ECOLOGICAL INFORMATION

This product is not expected to have an adverse effect on the ecology.

SECTION XIII DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of material in accordance with federal, state, and local regulations. Wastes are not hazardous as defined by the Resource Conservation and Recovery Act (RCRA; 40 CFR 261).

WASTE NUMBERS: No EPA Waste Numbers are applicable for this product's components.

SECTION XIV TRANSPORT INFORMATION

U.S. DOT INFORMATION: Not a hazardous material per DOT shipping requirements. Not classified or regulated.

SECTION XV REGULATORY INFORMATION

CANADIAN REGULATIONS:

WHMIS: D2B

All components of this product are included in the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

USA REGULATIONS:

All ingredients of this product are included in the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory.

CARCINOGENICITY CLASSIFICATION OF INGREDIENTS:

Material	IARC	NTP
Man Made Vitreous	Group 3	None

In October 2001, the International Agency for Research on Cancer (IARC) classified mineral wool fibers (rock or slag) as **Group 3 (not classifiable as to carcinogenicity to humans)**. IARC noted specifically: "no evidence of increased risks of lung cancer or mesothelioma (cancer of the lining of the body cavities) from occupational exposures during manufacture of these materials, and inadequate evidence overall of any cancer risk." This was a reversal of the IARC finding in 1987 of a Group 2B designation (possibly carcinogenic to humans) based on earlier studies in which animals were injected with large quantities of slag wool fibers.

SECTION XVI OTHER INFORMATION

INFORMATION FOR HANDLING AND IDENTIFICATION OF CHEMICAL HAZARDS

NFPA Ratings: Health: 0 Fire: 0 Reactivity: 0 Other: N/A

HMIS Ratings: Health: 0 Fire: 0 Reactivity: 0

Personal Protection: Use eye and skin protection. Use NIOSH/MSHA - approved respiratory protection when necessary.

0 = Minimal Hazard 1 = Slight Hazard 2 = Moderate Hazard

3 = Serious Hazard 4 = Severe Hazard

Δ CAUTION:

Dust exposure can cause temporary eye, skin and respiratory tract irritation. Avoid creating dust and install in well ventilated area. Cut and trim with razor knife or hand saw to minimize dust levels. Using power tools for cutting will generate high dust levels. Power tools should be equipped with dust collection system. Use NIOSH/MSHA-approved dust respirator. Avoid dust contact with eyes and skin. Wear eye protection and long-sleeve, loose fitting clothing closed at the neck and wrists. Wash work clothing separately from other clothing. Rinse washer thoroughly.

KEEP OUT OF REACH OF CHILDREN THIS PRODUCT CONTAINS NO ASBESTOS

FIRST AID: For skin irritation, rinse skin with cool water, followed by washing with soap and warm water. For eye irritation, flush eyes thoroughly with water for 15 minutes. If irritation continues, or product is swallowed, consult a physician. Additional product safety information is available on the Thermafiber web site, www.thermafiber.com or by calling (260) 563-2111.

Key/Legend

ACGIH	American Conference of Government Industrial Hygienists
CAS	Chemical Abstracts Service (Registry Number)
DOT	United States Department of Transportation
EPA	United States Environmental Protection Agency
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety & Health
NTP	National Toxicology Program
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit
TLV	Threshold Limit Value

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

WEBSTER UNIVERSITY ISB	
PROJECT NAME	
8274 BIG BEND BLVD	
ADDRESS	
NUMBER	
WEBSTER UNIVERSITY	
OWNER	
CANNON DESIGN	
ARCHITECT / ENGINEER	
Joe Voypick	
SUBMITTED BY	
084423-004	
CONTRACTOR / CM SUBMITTAL NO.	CANNON DESIGN SUBMITTAL NO.
	084423
DRAWING / DETAIL REFERENCE	SPECIFICATION SECTION / PARAGRAPH
NGG Ltd. Inc.	
MANUFACTURER / SUPPLIER	ITEM / PRODUCT ID
REQUIRED DATE	PRIORITY
	CRITICAL

ITEM BEING SUBMITTED (check only one)

- | | | |
|---|--|--|
| ☐ Shop Drawings | ☐ Certification / Qualifications | ☐ Coordination Drawing |
| ☐ Samples (____ copies) | ☒ Record Documents | ☐ Calculations |
| ☐ LEED Submittal | ☐ Product Data | ☐ Schedules |
| ☐ Other _____ | ☐ O&M Manuals | |

ITEM BEING SUBMITTED FOR (check only one)

- ☒ Action ☐ Information Only ☐ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION (SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)



PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By:

Devin D. Gates

Joe Voypick	5/25/16
REVIEWED BY	DATE

To be completed by Reviewer

CANNON DESIGN SUBMITTAL NUMBER
RECEIVED DATE

- ☐ A. No Exceptions Taken
No further review of submittal is required.
- ☐ B. Make Corrections Noted
Incorporate corrections in work; resubmission is not required.
- ☒ C. Revise and Resubmit
Revise as noted, and resubmit for review.
- ☐ D. Rejected
Submittal is not in compliance with Contract Documents; provide new submittal.
- ☐ E. For Record / Information Only
Submittal was reviewed for Record / Information purposes only.
- ☐ F. Not Required for Review
Submittal is not required by Contract Documents and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

A/E COMMENTS

☐ See attached sheet(s) for additional comments

Fireproofing system is based on C.W. decision yet to be determined. Dead loading locations of C.W. T.B.D. which will impact fireproofing design. Coordinate specific system and indicate for each location.

Kathy Williams	6/9/2016
REVIEWED BY	DATE



77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0048

Paric Corporation

PROJECT: Webster University Interdisciplinary Science Building

DATE: 05/25/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

RE: Curtain wall fire stop product data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☒ Approval	☒ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	SENT VIA:	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☒ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	Package	Code	Rev.	Copies	Date	Description	Status
Submittal		084423-004	1		05/25/2016	Curtain wall fire stop product data	Submitted

NOTES:

CC: Paric Corporation, Kathy Bathe

Project Coordinator: Paric Corporation, Kathy Bathe

Signed: _____
Devin Gates