



***FS 2.0 Thermal Barrier CC SPF***

# ***Submittal Package***

# **Firestable™ FS 2.0**

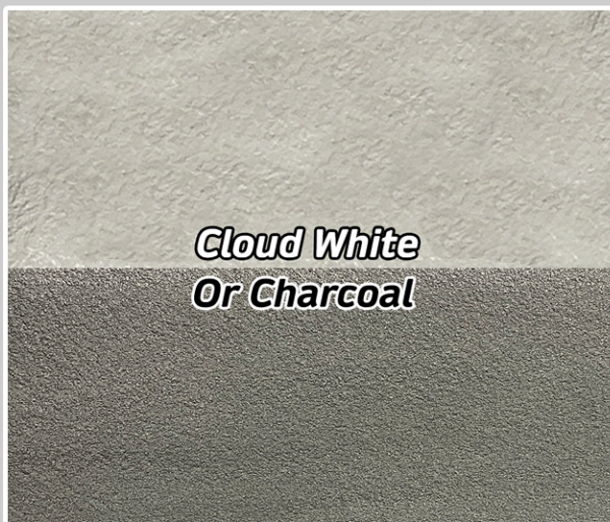
## **The Revolution in SPF Technology**



Firestable™ FS 2.0 is the first-of-its kind National Fire Protection Association (NFPA)-275 certified, single-application, spray polyurethane foam (SPF) insulation and all-in-one true thermal barrier — providing superior fire safety during construction and throughout the life of the building.

Unmatched in the marketplace, this closed-cell SPF immediately meets International Building Code (IBC) 2603.4 for thermal barriers upon application without the need for additional fire-protective products.

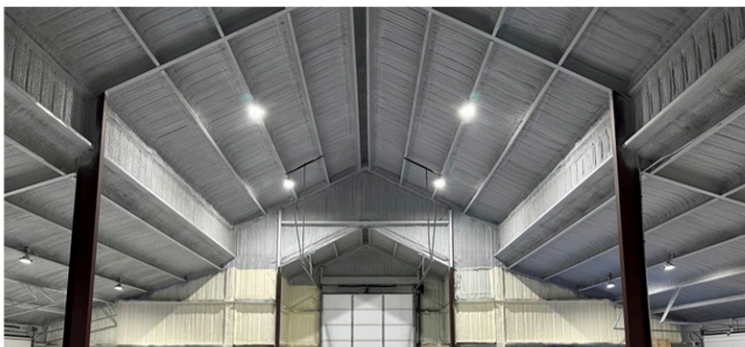
### **Available Colors**



FS 2.0 completed on a multi-purpose metal building project

### **Features**

- Certified to NFPA 275 in IBC 2603.4 as an all-in-one thermal barrier SPF insulation
- Approved as a stand-alone insulation or as a hybrid system
- Monolithic-uniform fire rating throughout its complete volume
- Meets vapor, water and air barrier code requirements for SPF
- Optimally designed for demanding environments
- 25% recycled content – highest in the SPF industry
- Waterblown – FREE of CFCs and HCFCs, with zero Ozone Depletion Potential (ODP)
- Available in multiple colors
- Can be painted with no restrictions
- Single application, one product solution
- R-Value of 5 per inch



FS 2.0 completed on a multi-purpose metal building project

### **Zero Risk Window**

FS 2.0 is code compliant immediately upon application, ensuring Life Safety for skilled trades people.



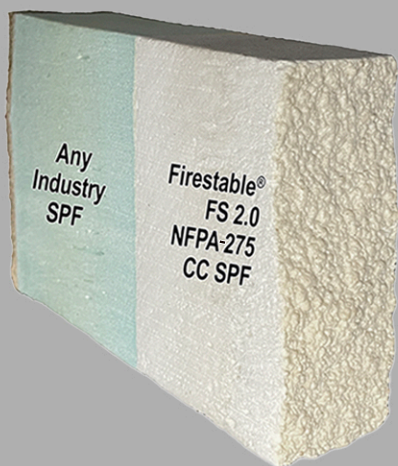
# **Firestable™ FS 2.0**

## **The First All-in-One Thermal Barrier SPF**



### **Monolithic Fire Protection**

FS 2.0 is fire compliant throughout its complete volume, ensuring fire safety from inside-out and outside-in.



**Protects Other Foam**

### **Benefits**

- Eliminates the need for other fire-protective products
- Applied with standard SPF equipment
- Saves time and money – faster installation eliminating steps & utilizing less materials
- Easier inspector and fire marshal approval process
- Fewer callbacks and warranty claims
- First and only product of its kind in the marketplace
- Only plastic to increase the fire resistance of an assembly
- Stops fire from outside/in and inside/out
- Significantly increases structural strength of buildings and wind uplift resistance
- Approved for use FEMA zones
- Improves commercial, industrial and building envelope efficiency and costs

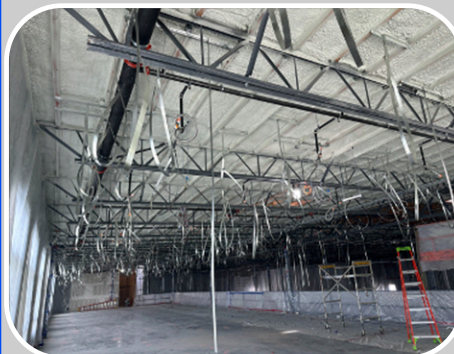
### **Design Flexibility for Multiple Applications**



**Open Ceilings**



**Cold Storage**



**Commercial**



**Industrial**

**See it in action or  
visit [www.Firestable.com/videos](http://www.Firestable.com/videos)**



**TECHNICAL DATA SHEET- NFPA 275 SPRAY POLYURETHANE FOAM**

**Firestable™ 2.0 insulating, continuous thermal barrier** is a two component, self-adhering, seamless, closed cell, spray applied, spray polyurethane foam system. This system has been formulated to provide identical performance to industry SPF, **AS WELL AS BEING a** code complying thermal barrier at 2 ½" or more. This spray polyurethane foam complies as a **'single step' code compliant** interior building insulation, air barrier, and moisture vapor retarder and exterior water vapor for applications in Type I, II, III, IV and V construction.

**Distinguishing characteristics:**

- Applied identically to Spray foam insulation with existing plural component equipment
- Can be applied as a stand-alone insulation or directly over multiple insulation products to provide code compliant hybrid insulation system
- No bonding agent needed over polystyrene or urethane foam insulation prior to application like cementitious Thermal Barriers
- Complies with NFPA 275 as a code compliant thermal barrier when installed in accordance with QAI Certification Listing B1134 – 1
- AC 377 approval pursuant to IAPMO ER - 857
- Water blown, Low VOC per CDPH Standard V 1.2, 2017
- Blowing agent **FREE** from CFCs and HCFCs, with zero Ozone Depletion Potential (ODP) and negligible Global Warming Potential (GWP) ≤1

PHYSICAL PROPERTIES			
ASTM D 1622	Core Density	2.4 ± 10%	
ASTM C 518	Aged Thermal Resistance - R value	1" = R 5.0	
ASTM E 96	Water Vapor Permeance – Vapor barrier at 1"	<1	
ASTM D 2842	Water Absorption (volume)	3%	
ASTM D 1621	Compressive Strength	>15	
ASTM D 1623	Tensile Strength. (>15psi spec)	34.9	
ASTM D 2126	Dim. Stability @158°F(70°C) 97% R.H. -168 hours. (<15% spec)	3.5%	
VOC Emissions	UL Environment (Greenguard Gold)	Meets Criteria	
IBC803.2 Interior Finishes	Paintable	Up to .036"	

FIRE TEST RESULTS		
ASTM E 84	A) Surface Burning Characteristics, 2 ½" thick Flame Spread Index Smoke Developed	Class A 0 250
	B) Surface Burning Characteristics, 4" thick Flame Spread Index Smoke Developed	Class A 15 300
ASTM 2768	Full 30 minute ignition resistance (Extended E 84) 4" thick	Pass
AC 377 Appendix X	Ignition Barrier – Compliant with 2009, 2012, 2015, 2018, & 2021 IBC and IRC, and ICC-ES AC-377 Appendix X, for use in attics and crawl spaces without a prescriptive ignition barrier or intumescent coating.	Pass
UL1715	Alternate Thermal Barrier – Compliant with 2009, 2012, 2015, 2018, & 2021 IBC & IRC, as an interior finish without a prescriptive thermal barrier or intumescent coating.	Pass
NFPA 275	Equivalent Thermal Barrier compliant to NFPA 275. Meets the 2009, 2012 & 2015 IBC and IRC, as an interior code compliant thermal barrier @ 2.5"	CERTIFIED to NFPA 275
ASTM D 1929	Ignition Properties (spontaneous ignition temperature)	>766°F (408°C)





## RECYCLED , RENEWABLE &amp; BIODEGRADEABLE CONTENT

Biodegradable/Recycled Content

25%

## REACTIVITY PROFILE

Cream Time	Gel Time	Tack Free Time	End of Rise
0 – 1 seconds	<2 seconds	3 – 4 seconds	4 – 5 seconds

## LIQUID COMPONENT PROPERTIES\*

PROPERTY	A- ISOCYANATE	B - Firestable™ RESIN (AFTER MIXING)
Color	Brown	White Foam – Grey Resin Charcoal Foam – Black Resin
Viscosity @ 77°F (25°C)	400-700 cps	1200-1700 cps
Specific Gravity	1.22	1.3 ± .01
Shelf Life of unopened drum properly stored	12 months	6 months
Storage Temperature	50 – 100°F (10 – 38°C)	50 – 90°F (10 – 32°C)
Mixing Ratio (volume)	1	1

\*See SDS for more information.

## RECOMMENDED PROCESSING CONDITIONS

RECOMMENDED PROCESSING CONDITIONS			
	High Pressure (Pressure balance required)		(HVLV) Nitrosis HVLP(230V) req'd
	A Side.	B Side	
Minimum Reactor/Heater system/Hose	H25 or E30/15kw/300ft	H25 or E30/15kw/300ft	Nitrosis HVLP 230 v/10+kw/200ft
Gun(s)	Fusion AP	Fusion AP	Short cone nozzle - P/N 234174
Initial Primary Heater Setpoint Temperature(75F)	100°F - 135°F	105°F - 135°F	120f - B side / 115f - A side
Initial Hose Heat Setpoint Temperature	100°F - 135°F	100°F - 135°F	125 F
Drum Pumps	T2, T3, or T4 pump	T2, T3, or T4 pump	T3 pump - air@ 80-100 psi
Initial Processing Setpoint Pres. (Static)	1100 - 1600	1100 - 1600	N/A
Dynamic Pressure(psi)	900 - 1400	900 - 1400	N/A
Substrate Temperature range		Summer > 50 F Winter > 32 F (Heat-sinks > 50 F)	Summer > 50 F Winter > 32f
Moisture Content of Substrate	≤18%		≤18%
Moisture Content of Concrete	≤5%	Concrete must be cured, dry and free of dust and any form of release agents. <a href="#">See Application Guide for further Instruction.</a>	
Re-entry/Re-occupancy	Follow industry guidelines - 24 hours @ 2 ac/hr		

Applicator bears prime responsibility for the proper application of this **LIFE SAFETY PRODUCT**. Foam application temperatures and pressures can vary widely depending on temperature, humidity, elevation, substrate, equipment and other factors. While processing, the applicator must continuously observe the characteristics of the sprayed foam and adjust processing temperatures and pressures to maintain proper cell structure, adhesion, cohesion and general foam quality. It is the sole responsibility of the applicator to process and apply Firestable™ thermal barrier within specification.

General Requirements: Equipment must be capable of delivering the proper ratio (1:1 by volume) of polymeric isocyanate (PMDI) and polyol blend at adequate temperatures and spray pressures. Substrate must be at least 5 degrees above dew point, with best processing results when ambient humidity is below 80%. Substrate must also be free of moisture (dew or frost), grease, oil, solvents and other materials that would adversely affect adhesion of the polyurethane foam. Applicators should limit the application of this product to no more than a thickness of 4" (after expansion) to avoid fire hazards resulting from excessive heat generation. If subsequent passes are needed, applicators should wait until the core temperature of the foam has dropped below 100°F to allow any reaction heat to dissipate from the prior applications before attempting to reapply the product.



RECOMMENDED MAXIMUM PASS THICKNESSES		
Ambient Temperature	Recommended Pass	Maximum Pass
≤70°F (21°C)	2.5" – 3"	4"
>70°F (21°C); <90°F (32°C)	2.5" – 3"	4"

Disclaimer: The information herein is to assist customers in determining whether our products are suitable for their applications. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute a warranty, expressed or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent inferred. All patent rights are reserved. Though a thermal barrier, you should still protect from direct flame and spark contact, around hot work for example. The exclusive remedy for all proven claims is replacement of our materials.





**FIRESTABLE INSULATION COMPANY**  
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**Essex, Connecticut 06426**  
**(860) 767-8772**  
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## **FIRESTABLE FS 2.0 CLOSED CELL SPRAY FOAM**

**CSI Section:**  
**07 21 00 Thermal Insulation**

### **1.0 RECOGNITION**

Firestable Insulation Company Firestable FS 2.0 closed cell spray foam recognized in this report has been evaluated for use as thermal insulation. The physical characteristics, surface burning characteristics, thermal resistance properties, and attic and crawl space installations of the spray foam complies with the intent of the provisions of the following codes and regulations:

- 2021, 2018, and 2015 International Building Code® (IBC)
- 2021, 2018, and 2015 International Residential Code® (IRC)
- 2021, 2018, and 2015 International Energy Conservation Code (IECC)
- 2023 and 2020 Florida Building Code, Building (FBC, Building) – attached Supplement
- 2023 and 2020 Florida Building Code, Residential (FBC, Residential) – attached Supplement
- 2023 and 2020 Florida Building Code, Energy (FBC, Energy) – attached Supplement

### **2.0 LIMITATIONS**

Use of the Firestable FS 2.0 closed cell spray foam recognized in this report is subject to the following limitations:

**2.1** The Firestable FS 2.0 closed cell spray foam shall be installed in accordance with the applicable code, the manufacturer's published installation instructions, and this report. Where there is a conflict, the most restrictive requirements shall govern.

**2.2** The insulation shall not exceed the nominal density and thickness as shown in this report.

**2.3** During installation, the insulation and the surfaces to which it is applied shall be protected from exposure to weather.

**2.4** The contractors that will be installing the insulation shall be approved by Firestable Insulation Company.

**2.5** Use of the insulation in areas of "very heavy" termite infestation shall be in accordance with the IBC Section 2603.8 or IRC Section 318.4, as applicable.

**2.6** Labeling and jobsite certification of the insulation and coatings shall comply with IBC Section 2603.2; 2021, 2018 and 2015 IRC N1101.10 and N1101.10.1.1; Sections N1101.12, N1101.12.1, and N1101.4.1; and IECC Sections C303.1.1 and C303.1.2, as applicable.

**2.7** Foam plastic used in plenums as interior finish or interior trim shall comply with Section 2603.7 of the IBC.

**2.8** Fire-resistance ratings are beyond the scope of this review. Where fire-resistance rated assemblies are required by the IBC or IRC, documentation shall be provided to the building official showing compliance.

**2.9** When Firestable FS 2.0 closed cell spray-applied foam plastic insulation is used in exterior walls of Types I through IV construction, documentation shall be provided to the building official to show compliance with Section 2603.5 of the IBC and Section 3.4 of this report.

**2.10** The Firestable FS 2.0 closed cell spray-applied foam plastic insulation recognized in this report is produced by Firestable Insulation Company in Essex, Connecticut, and Houston, Texas.

### **3.0 PRODUCT USE**

**3.1 General:** When installed in accordance with Section 3.3 of this report, Firestable FS 2.0 closed cell spray foam insulation can be used in wall cavities, floor assemblies and ceiling assemblies, and in attic and crawl spaces as nonstructural thermal insulation material. The spray-applied foam plastic insulation is used in Types I through V construction under the IBC and in dwellings under the IRC, except as noted in Section 2.8 and 2.9 of this report.

**3.2 Design:** Firestable FS 2.0 closed cell spray foam insulation shall comply with requirements in IECC Sections C402.1 and R402.

**3.2.1 Thermal Resistance (R-Values):** Firestable FS 2.0 closed cell spray foam insulation has a thermal resistance (R-Value) at a mean temperature of 75°F (24°C) as shown in Table 1 of this report.



TABLE 1 - Thermal Resistance (R-Values)	
Thickness (inch)	Firestable FS 2.0
	R-Value (°F·ft²·h/Btu)
1	5.0
1.25	6.2
1.5	7.4
1.75	8.7
2	9.9
2.25	11
2.5	12
3	15
3.5	17
4	19
5	24
6	29
7	34
8	38

For SI: 1 inch = 25.4 mm, 1°F·ft²·h/Btu = 0.176 110 K·m²/W

**3.2.2 Surface Burning Characteristics:** At a maximum thickness of 4 inches (102 mm), Firestable FS 2.0 closed cell spray foam insulation has a flame spread index of 25 or less and a smoke-developed index of 450 or less when tested in accordance with ASTM E84.

Thicknesses beyond what is allowed for ceiling cavities and wall cavities in Section 3.3.2, shall be covered by a code complying prescriptive thermal barrier, such as minimum ½-inch (12.7 mm) thick gypsum board.

In accordance with IBC Section 803.2, Firestable FS 2.0 can be top-coated with up to 0.036-inch (0.091 mm) maximum thickness of coatings.

**3.2.3 Water Vapor Transmission:** When tested to the requirements of ASTM E96, water method, at a thickness of 1 inch (2.54 mm), Firestable FS 2.0 closed cell spray foam insulation has a Vapor Retarder Classification of Class I, when installation is in accordance with the 2021 IBC and 2021 IRC.

### 3.3 Installation:

**3.3.1 Installation General:** The manufacturer's published installation instructions for Firestable FS 2.0 closed cell spray foam insulation and this report shall be available and strictly adhered to at all times on the jobsite during installation.

The spray foam insulation shall be spray-applied on the jobsite up to the maximum insulation thickness specified in this report, using a volumetric positive displacement pump in accordance with the manufacturer's published installation instructions.

The maximum in-service temperature for all areas shall not exceed 180°F (82°C). The spray-applied foam plastic insulation shall not be used in electrical outlets or junction

boxes or in continuous contact with rain or water. The spray-applied foam plastic insulations shall be sprayed onto a substrate that is protected and clean from any debris or weather-related conditions during application.

**3.3.2 Installation as an Equivalent Thermal Barrier Material:** Firestable FS 2.0 closed cell spray foam may be used as an equivalent thermal barrier material meeting the Temperature Transmission Fire Test and the Integrity Fire Test acceptance criteria of NFPA 275, as required in Section 2603.4 of the IBC, when applied as required in QAI Laboratories listing report B1134-1.

### 3.4 Use in Exterior Walls of Types I, II, III, and IV Construction:

**3.4.1 General:** When Firestable FS 2.0 closed cell spray foam insulation is used in exterior walls of Types I, II, III, and IV construction of any height, the insulation shall comply with IBC Section 2603.5 and Section 3.4 of this report.

**3.4.2 Complying Exterior Wall Assemblies:** Wall assemblies that comply with Section 2603.5.5 of the IBC and this report, that may be used in exterior walls of buildings of Type I, II, III, or IV construction of any height, are described in Table 2 of this report.

**3.4.3 Potential Heat of Combustion:** When tested to NFPA 259, Firestable FS 2.0 closed cell spray foam insulation has a potential heat of combustion of 8,214 BTU/lb (19.1 MJ/kg) (1,574 BTU/ft² per inch of thickness).

**3.5 Use to Increase Fire-Resistance:** Firestable FS 2.0 may be used to increase fire resistance when used as part of a calculated fire assembly in Table 722.1.4 (2) of the IBC. The time is assigned based on the thickness of Firestable FS 2.0 as described in Table 3 of this report.

## 4.0 PRODUCT DESCRIPTION

Firestable FS 2.0 closed cell spray foam insulation is a spray-applied, polyurethane closed cell foam plastic and complies as a medium-density insulation in accordance with Section 3.1.1 and Table 1 of AC308. The insulation is a two-component spray foam plastic with a nominal in-place density of 2.4 pcf +/- 10% (67 kg/m³).

The spray-applied insulation is mixed in the field by combining a polymeric isocyanate (A component) and a resin blend (B component). The liquid components shall be stored in 55-gallon (208 L) drums at temperatures between 50°F and 90°F (10°C and 32°C). When Component A and Component B are stored in factory-sealed containers at the recommended temperatures, the maximum shelf life is six months.

## 5.0 IDENTIFICATION

Firestable FS 2.0 closed cell spray foam insulation is identified by the Firestable Insulation Company name,





address and phone number; product name, flame spread index and smoke developed index, date of manufacture, and the evaluation report number (ER-857).

The IAPMO Uniform Evaluation Service Mark of Conformity may also be used as shown below:



**IAPMO UES ER-857**

## 6.0 SUBSTANTIATING DATA

**6.1** Data in accordance with the Acceptance Criteria for Spray-applied Foam Plastic Insulation, ICC-ES AC377, dated April 2020, (editorially revised July 2020).

**6.2** Data in accordance with IAPMO ES1000-2020, Building Code Compliance of Spray-Applied Polyurethane Foam.

**6.3** Data in accordance with ICC 1100-2019, Standard for Spray-applied Polyurethane Foam Plastic Insulation.

**6.4** Reports of testing and evaluation of flame propagation in accordance with NFPA 285.

**6.5** Testing to the requirements of NFPA 259.

**6.6** Engineering analysis of the fire-resistance testing to determine finish ratings based on thickness.

**6.7** Test reports are from laboratories in compliance with ISO/IEC 17025.

## 7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research completed by IAPMO Uniform Evaluation Service on Firestable Insulation Company's Firestable FS 2.0 closed cell spray foam insulation to assess conformance to the codes shown in Section 1.0 of this report and serves as documentation of the product certification. Products are manufactured at locations noted in Section 2.10 of this report under a quality control program with periodic inspection under the supervision of IAPMO UES.

For additional information about this evaluation report please visit [www.uniform-es.org](http://www.uniform-es.org) or email us at [info@uniform-es.org](mailto:info@uniform-es.org)



**TABLE 2 – NFPA 285 COMPLYING EXTERIOR WALL ASSEMBLIES  
WITH FIRESTABLE FS 2.0 APPLIED IN WALL STUD CAVITY**

Wall Component	Material Description
<b>Base Wall</b>	Steel Stud Wall - 1 layer of 5/8-inch minimum Type X gypsum wallboard installed on the interior side of minimum 3 5/8-inch deep No. 20 gauge steel studs spaced a maximum of 24 inches on center – lateral bracing optional.
<b>Fire-Stopping in Stud Cavity at Floor Lines</b>	4-inch 4 pcf mineral wool (friction fit or installed with Z-Clips)
<b>Cavity Insulation</b>	Firestable FS 2.0 up to full cavity stud cavity fill (3 5/8-inch maximum foam thickness with 3 5/8 -inch stud depth)
<b>Exterior Sheathing</b> Use Item 1 or 2	1) 5/8-inch minimum Type X Exterior Gypsum sheathing meeting ASTM C1396/1396M or Type X glass mas gypsum sheathing meeting ASTM C1177. 2) 5/8-inch minimum DensElement with DensDefy joint sealant.
<b>Exterior Insulation</b> Use Item 1 or 2	1) None. 2) Minimum 2-inch, minimum 4 pcf noncombustible mineral wool.
<b>NFPA 285 Complying System over Base Wall</b>	Any NFPA 285 tested/approved exterior wall design (WRB/insulation/cladding).  Note- When the exterior sheathing is Item 2 above (DensElement) or sheathing Ite 1 or 2, covered with insulation #2 (mineral wool), then the claddings below (Item 1, a-c) or Item 2(a-i) may be used.  Note – If exterior insulation Item #2 is used (mineral wool), then any WRB may cover exterior sheathing Item 1.
<b>Exterior Cladding</b> Use any cladding listed in 1 or 2.  Item 1 – max air gap cannot exceed the air gap tested.  Item 2 may use any air gap.	1) Any Combustible Cladding that has passed NFPA 285 (examples below) a. NFPA 285 Tested/Approved MCM/ACM Metal Aluminum Composite building panels. b. NFPA 285 Tested/Approved stone/aluminum honeycomb composite c. NFPA 285 Tested/Approved HPL High-Pressure Laminate  2) Any noncombustible cladding such as (but not limited to) a. Brick – Standard type brick veneer anchors, installed a maximum of 24 inches on center, vertically on each stud with maximum 1-inch air gap between exterior insulation and brick. Brick to be standard nominal 4-inch-thick clay brick installed in a running bond pattern using Type S mortar. b. Stucco – Minimum 3/4-inch thick, exterior plaster and lath. A secondary water resistive barrier (WRB) can be installed between the exterior insulation and lath. The secondary WRB shall not be full coverage asphalt or butyl based self-adhered membranes. c. Minimum 2-inch-thick natural stone (granite, limestone, marble or sandstone). Any standard non-open joint installation technique shall be used. d. Architectural cast stone – 2 1/2 -inch minimum thickness e. Terra Cotta Cladding – 1 1/4 - inch minimum thickness f. 1/4-inch-thick glass reinforced concrete panels (installed per manufacturer's instructions) g. Concrete – 2 inches thick minimum h. CMU Blocks – 4 inches thick minimum i. Sheet metals such as aluminum, copper, zinc, or steel – any thickness.
<b>Window/Door Perimeters</b>	Framed as required for base wall. Use 25-gauge sheet steel for flashing area outside of base wall.

For SI: 1 inch = 25.4 mm





**TABLE 3- FINISH RATING OF FIRESTABLE FS 2.0<sup>1</sup>**

<b>Finish Rating (minutes)</b>	<b>Nominal Average Thickness of Firestable FS 2.0 (inches)</b>
15	2.375
20	3.25
25	4.375
30	5.5
35	7.0
40	8.375

For SI: 1 inch = 25.4 mm

<sup>1</sup> Interpolation shall not be taken for the values in this table.



## FLORIDA SUPPLEMENT

### FIRESTABLE INSULATION COMPANY

**36 Plains Road**

**Essex, Connecticut 06426**

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[www.firestable.com](http://www.firestable.com)

### FIRESTABLE FS 2.0 CLOSED CELL SPRAY FOAM

#### CSI Section:

**07 21 00 - Thermal Insulation**

#### 1.0 SCOPE OF EVALUATION

- 2023 and 2020 Florida Building Code, Building (FBC, Building)
- 2023 and 2020 Florida Building Code, Residential (FBC, Residential)
- 2023 and 2020 Florida Building Code, Energy (FBC, Energy)

#### 2.0 FINDINGS

Firestable FS 2.0 closed cell spray foam plastic insulation reported in IAPMO UES Evaluation Report ER-857 is a satisfactory building product alternative to those prescribed in the FBC, Building; FBC, Residential; and the FBC, Energy. Installation of the foam plastic insulation shall be in accordance with the 2021 or 2018 International Building Code, 2021 or 2018 International Residential Code, and the 2021 or 2018 International Energy Code as noted in ER-857, as applicable. Firestable FS 2.0 closed cell spray foam plastic insulation complies with the High-velocity Hurricane Zone provisions of the FBC, Building, and FBC, Residential.

#### 3.0 LIMITATIONS

Use of Firestable FS 2.0 closed cell spray foam plastic insulation recognized in this report supplement is subject to the following limitations:

**3.1** In order to provide for inspection for termite infestation, clearance between exterior wall coverings and final earth grade on the exterior of a building shall not be less than 6 inches (152 mm) in accordance with Section 1403.7 of the FBC, Building or Section R704 of the FRC, Residential.

**3.2** This supplement expires concurrently with ER-857.

#### 4.0 STATE PRODUCT APPROVAL

For products falling under Florida Rule 61G20-3.001, verification shall be provided that a quality assurance agency audits the manufacturer's quality assurance program and audits the production quality of products, in accordance with Section (5)(d) of Florida Rule 61G20-3.008. The quality assurance agency shall be approved by the Commission (or the building official when the report holder does not possess an approval by the Commission).

For additional information about this evaluation report please visit [www.uniform-es.org](http://www.uniform-es.org) or email us at [info@uniform-es.org](mailto:info@uniform-es.org)

## **BUILDING PRODUCTS LISTING PROGRAM**

Customer: **Firestable® Insulation Company**

Class: Polyurethane Foam Insulation  
Location: Essex, CT

Listing No. B1134-1  
Effective Date: May 30, 2022  
Last Revised: Date: February 28, 2023  
Expires: <N/A>

Standards:	ASTM E84	<i>Standard Test Method for Surface Burning Characteristics of Building Materials.</i>
	UL 723	<i>Standard for Test for Surface Burning Characteristics of Building Materials.</i>
	NFPA 255	<i>Standard Method of Test of Surface Burning Characteristics of Building Materials.</i>
	ASTM E2768	<i>Standard Test method for Extended Duration Surface Burning Characteristics of Building Materials (30 min Tunnel Test).</i>
	NFPA 275	<i>Standard Method of Fire Tests for the Evaluation of Thermal Barriers.</i>
	UL 1715	<i>Fire Test of Interior Finish Materials.</i>
	2021 / 2018	International Building Code Section 803.14 <i>Stability.</i>
	2015	International Building Code Section 803.12 <i>Stability.</i>

Product: Firestable® FS 2.0 Spray-Applied Foam.

Description: Firestable® FS 2.0 is a spray-applied polyurethane foam used as a thermal barrier for the protection of foam plastics described below. Firestable® is available in the following colors:

- Cloud White.
- Charcoal.

Markings: Firestable® FS 2.0 Component A and Component B drums bear a label with markings including the information outlined below:

- Manufacturer's Name
- Product name – Firestable® FS 2.0
- ASTM E84 Class A: Flame Spread ≤ 25 / Smoke Development ≤ 450 @ 4"
- Traceability Code (Lot Number)
- QAI Listing Number (B1134) and Certification Logo shown:





Models / Ratings:

The following outlines Firestable® FS 2.0 Spray-Applied Foam results determined in accordance with ASTM E84, UL 723, and ANSI/NFPA 255:

PRODUCT	FLAME SPREAD INDEX (FSI)	SMOKE DEVELOPED INDEX (SDI)	THICKNESS MAX. (inches)	DENSITY MAX (lbs/ft³)
Firestable® FS 2.0	≤ 25	≤ 450	4	2.8

The following outlines Firestable® FS 2.0 Spray-Applied Foam results determined in accordance with ASTM E2768 / ASTM E84 Continued for 20 Minutes:

PRODUCT	FLAME SPREAD INDEX (FSI)	SIGNIFICANT PROGRESSIVE COMBUSTION	MAX FLAME FRONT (ft)	THICKNESS MAX. (inches)	DENSITY MAX (lbs/ft³)
Firestable® FS 2.0	≤ 25	No	≤ 10.5	4	2.8

The following outlines Firestable® FS 2.0 spray-applied foam approved installation as a thermal barrier for protection of foam plastics in accordance with NFPA 275:

INSTALLED FIRESTABLE® FS 2.0 ≥ 2.5 INCHES THICKNESS, 2.5 lbs/ft³ DENSITY			
THERMOPLASTIC INSULATION		THERMOSETTING INSULATION	
DENSITY (lbs/ft³)	MAX. THICKNESS (inches)	MAX. DENSITY (lbs/ft³)	MAX. THICKNESS (inches)
1.0	5-1/2	3.0	6-1/2
1.5	3-1/4		
2.0	2.5		
2.5	2		
3.0	1-3/4		

Firestable® FS 2.0 spray-applied foam has met 2021 / 2018 International Building Code Section 803.14 *Stability*, 2015 International Building Code Section 803.12 *Stability* when applied to thermoplastic foam plastics, thermosetting foam plastics, cement board, metal and gypsum-based substrates.

**The following outlines Firestable® FS 2.0 results determined in accordance with UL 1715<sup>1</sup>:**

Note 1: Testing to UL 1715 was conducted following 2021 / 2018 / 2015 International Building Code Section 2603.9 *Special Approval* evaluation based on full scale testing of an end-use configuration.

PRODUCT	BASE FOAM TYPE	BASE FOAM THICKNESSES (inches)	BASE FOAM DENSITY (lbs/ft <sup>3</sup> )	INSTALLATION
Firestable® FS 2.0	No Base Foam	Firestable FS 2.0 at 2.5 lbs/ft <sup>3</sup> nominal density target from 1" to 9" installed thickness.		Ensure the substrate is dry and clean of debris and dust. Firestable FS 2.0 is applied in a single pass up to 2.5 inches thickness, at 2.5 lbs/ft <sup>3</sup> target density (2.3 – 2.8 lbs/ft <sup>3</sup> required). FS 2.0 is applied to ensure a continuous unbroken surface across walls and ceilings. Installation of Firestable FS 2.0 to be done at ambient temperatures of 30 – 100°F where temperatures are > 5°F above the dew point to ensure bond to substrate.
A) Alternate Firestable® FS 2.0 B) Equivalent		Firestable FS 2.0 at 2.5 lbs/ft <sup>3</sup> nominal density target at ≥ 2.5 inches where installed per NFPA 275 above.		
Firestable® FS 2.0	Thermoplastic	See NFPA 275 Above		Ensure base foam is dry and clean of debris and dust. Firestable FS 2.0 is applied in a single pass to minimum 2.5 inches thickness, at 2.5 lbs/ft <sup>3</sup> target density (2.3 – 2.8 lbs/ft <sup>3</sup> required). FS 2.0 is applied to ensure a continuous unbroken surface across walls and ceilings to ensure underlying foam protection with no voids or gaps present. Installation of Firestable FS 2.0 to be done at ambient temperatures of 30 – 100°F where temperatures are > 5°F above the dew point to ensure bond to base foam layer.
Firestable® FS 2.0	Thermosetting	See NFPA 275 Above		First pass of thermosetting foam base layer is applied to maximum thickness and density described in NFPA 275 above. The base layer is to be allowed to condition to ambient temperature and confirmed to be clean and dry prior to application of Firestable FS 2.0. Following, at minimum a single pass of Firestable FS 2.0 is to be applied at 2.5 inches thickness, at 2.5 lbs/ft <sup>3</sup> target density (2.3 – 2.8 lbs/ft <sup>3</sup> installed required). FS 2.0 is applied to ensure a continuous unbroken surface across walls and ceilings to ensure underlying foam protection with no voids or gaps present. Installation of Firestable FS 2.0 to be done at ambient temperatures of 30 – 100°F where temperatures are > 5°F above the dew point to ensure bond to base foam layer.

For application the manufacturers installations instructions must be followed, foam **MUST** be cured and cooled to ambient conditions, all surface preparation should be carried out in accordance with good application practices. Firestable® FS 2.0 should be installed by qualified contractors to ensure product performance.

Firestable FS 2.0 is to be installed at target thicknesses noted, in the density tolerances shown for use as a thermal barrier.

Final acceptance of the product in the intended application is to be determined by the authority having jurisdiction.

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