



**FIRE RESISTANCE &
CODE COMPLIANCE**

Fire Resistance

Resolite manufactures most of their fiberglass reinforced polymer panels with a fire rated resin system. In fact, Resolite developed and fabricated the first fire retardant FRP panel in 1964. Since then, Resolite has continually been in the forefront of supplying FRP panels in fire retardant resin systems.

Resolite's Tred-Safe FS25A, CRFS25A, and RFM panels are examples of the highest quality fire retardant panel systems available. These product types are fabricated using an isophthalic, halogenated polyester resin with neopentyl glycol, acrylic modification and UV stabilizers. Each has demonstrated a flame spread rating of 25 or less when tested in accordance with ASTM E 84.

Resolite RFM panels have also been approved by Factory Mutual since they have passed the 25' and 50' full scale Corner Test. In accordance with FM standard 4880, Resolite RFM panels have been approved for unrestricted use as a wall, roof or ceiling without height limitations or sprinkler protection. Resolite RFM 11, RFM 14 and RFM 17 panels have also passed ASTM E 108 achieving a Class B burning bran rating with a 3 in 12 roof slope.

The following guide illustrates Resolite's various fire retardant products, panel types, ratings and approvals. Please note that Resolite also manufactures Poliacryl and CR-Poliacryl non-fire retardant panels systems.

Product Type	Panel Type	Surface Burning Characteristics		Approval / Listings	Building Code Classification	
		Flame Spread ¹	Smoke Developed		Flame Spread ^{1,5}	Rate of burn ⁶
Tred-Safe	1645	25	>450	UL	1, I or A	CC1
FS25A & CRF-S25A	1440	25	>450	UL	1, I or A	CC1
	1430	25	>450	UL		
FS25A & CRFS25A	1240	25	≤450	UL	1, I or A	CC1
	1040	25	≤450	UL		
	840	25	≤450	UL		
FS25A & CRFS25A	1230	25	500	UL	1, I or A	CC1
	1030	25	≤450	UL		
	830	25	≤450	UL		
RFM	17	15	≤250	FMRC	1, I or A	CC1
	14	15	≤250	FMRC		
	11	15	≤250	FMRC		
Poliacryl & CR-Poliacryl	Non-fire rated general purpose resin system					CC2

Notes

1. Resolite advises that the numerical flame spread classification is not intended to reflect hazards presented by this or any other material under actual fire conditions.
2. UL- Underwriters Laboratories, Inc.
3. FMRC- Factory Mutual Research Center
4. In accordance with ASTM E84/UL723, NFPA 165
5. In accordance with ASTM D635

Code Compliance

Resolite fire rated FRP panels are manufactured under rigorous standards and meet many code compliance criteria. Resolite FR panels are listed or approved under the following classifications. For additional information, please contact Resolite Customer Service or your Resolite Sales Representative.

Underwriters Laboratories Listings

Fire Rating

Resolite fire rated product types FS25A, CRFS25A and Tred-Safe have achieved a UL Flame Spread Classification of 25 in accordance with the Steiner Tunnel Test, ASTM E 84 (UL 723). See reverse side for complete listings.

Factory Mutual Approvals

Fire Rating

Resolite RFM panels have passed the 25' and 50' full scale Corner Test. In accordance with Factory Mutual Standard 4880, Resolite RFM panels have been approved for unrestricted use as a wall, roof or ceiling panel without height limitations or sprinkler protection. See reverse side for listing.

Resolite RFM panels were tested and approved for CAN/ULC-S134-92 (Standard Method of Fire Test of Exterior Wall Assemblies)

Wind Uplift

Resolite RFM panels have passed the Factory Mutual Wind Uplift Test and have achieved the following I-90 Classifications.

PROFILE	PANEL TYPE	CLASS	SPAN
7.2 x 1.5"	RFM 17, 14	I-90	6'6"
7.2D x 1.75"			
7 x 1.5"			
7.2 x 1.5"	RFM 11	I-90	5'0"
7.2D x 1.75"			
7 x 1.5"			
4.2 x 1-1/16"	RFM 17, 14	I-90	5'3"

Insulated Panel System

Resolite RFM panels were tested as part of an insulated panel system and found to meet the FMRC Class 4453/4420 approval requirements for the RFM Insulated Wall and Roof / Ceiling Panel System.



Underwriters Laboratories

RFM Factory Mutual Approved panels

In the industrial and corrosion market, Resolite and Fire Snuf- FS25A are names synonymous with fiberglass reinforced polymer panels. Resolite started production in 1951 and in 1964 developed and produced the first fire-retardant FRP panel.

Over 70 years of production and development experience has gone into Resolite's RFM panels. These panels were tested at Factory Mutual Research Center and have passed both the Factory Mutual 25' and 50' foot Corner Test. Both tests were conducted on minimum 6'0" spans to simulate real world conditions.

In accordance with FM Standard 4880/4881, Resolite RFM panels have been approved for unrestricted use as a wall, roof or ceiling without height limitations or sprinkler protection.

Resolite RFM panels also achieved I-90 Wind Uplift Classification and passed the Factory Mutual tough hail damage tests. In addition, Resolite RFM 11, 14 and 17 panels have passed ASTM E 108 and achieved a Class B rating with maximum 3 in 12 roof slope.

The Resolite RFM insulated panel system was also tested and meets the FMRC Class 4453/4420 approval requirements.

RFM fiberglass reinforced polymer panels are formulated using the same halogenated isophthalic resin system as used in Ted-Safe and CRFS25A. All FM approved FRP panels must use additives to retard burning; these additives, however, reduce corrosion and weather resistance. When an FM label is not required, Resolite's FS25A, CRFS25A and Tred-Safe would be the superior choice for utmost corrosion and weather resistance. These panels carry a UL25 flame spread rating and are produced with our unfilled isophthalic resin system.



RFM Features

- **Factory Mutual Approved** - Meets the criteria for approval as a Class 1, fire rated plastic building panel without height or area limitations and without sprinkler protection.
- **FM Wind Uplift Classification** - RFM panels have achieved FM I-90 Wind Uplift Classification.
- **Corrosion Resistant** - Produced with a high quality isophthalic halogenated polyester resin system.
- **Embossed Exterior Surface** - The exterior surface is embossed creating a resin rich surface for improved performance. The interior surface is smooth .
- **C/W Barrier Protection** - A protective barrier on the exterior surface of RFM panels that is fused into the resin/fiberglass matrix to give the panel even greater protection against degradation.
- **Multiple Glass Reinforcements** - RFM panels utilize a high strength combination of glass reinforcement including bidirectional continuous strand woven and chopped strand glass.
- **Three Types Available** - 17 (17oz.), 14 (14 oz.) and 11 (11oz.)
- **Three Standard Colors** - Available in three standard opaque colors- Stone White, Gray and Beige. Consult Standard Color Guide for more information.
- **Two Standard Profiles** - 7.2 x 1.5" and 4.2 x 1-1/16"; Two optional profiles 7.2D x 1.75", 7 x 1.5"
- **Outstanding Performance** - Backed by over 45 years of case history in the corrosion and industrial market.
- **Load/Span Data** - Based on full scale tests to simulate actual field conditions.
- **Meets ASTM D 3841** - Standard Specification for Glass-Fiber-Reinforced Polyester Plastic Panels.
- **CAN/ULC S-134** - Resolite RFM passes CAN/ULC S-134 Fire Test of Exterior Wall Assemblies (Full Scale).

Physical Properties

TYPES AVAILABLE	17	14	11
Nominal Wt., oz./sq.ft.	17 oz.	14 oz.	11 oz.
Nominal Thickness, in.**	.105	.090	.075
Nominal Glass Content	25%	25%	25%
Hardness, Barcol ASTM D 2583	45		
Flexural Strength, psi ASTM D 790	21,000		
Flexural Modulus, psi ASTM D 790	1.2 x 10 ⁶		
Tensile Strength, psi ASTM D 638	14,000		
Coefficient of Expansion (in/in/°F) ASTM D 696	3.2 x 10 ⁻⁵		
Conductivity (K Factor) ASTM C 177	2.50		
Dielectric Strength RMS V. @ 60 cycles ASTM D 149	403 V/Mil		
Fire Resistance Ignition Point ASTM D 1929	875 °F - 925 °F		
Flame Spread Classification ASTM E 84 [UL 723]	15*		
Smoke Classification	250		

Flamability ASTM D 635

Average Time of Burning less than 5 seconds

Average Extent of Burning less than 15 mm

Building Code Classification CC1 or C1

FACTORY MUTUAL WIND UPLIFT CLASSIFICATION			
Profile	Panel Type	Class	Span
7.2 X 1.5" 7.2D X 1.75" 7 X 1.5"	RFM 17,14	I-90	6'6"
7.2 X 1.5" 7.2D X 1.75" 7X 1.5"	RFM 11	I-90	5'0"
4.2 X 1-1/16"	RFM 17, 14	I-90	5'3"

Notes

- * All thickness based on flat material. Nominal thickness varies with profile.
- * Resolite advises that the numerical flame spread classification is not intended to reflect hazards presented by this or any other material under actual fire conditions.

Specification (short form)

1. Fiberglass reinforced polymer wall and/or roof panels shall be Resolite RFM 17 / RFM 14 / RFM 11, Factory Mutual Approved, as manufactured by Resolite, a Stabilit America Company, Moscow, TN.
2. Glass reinforcement shall be composed of bidirectional continuous strand woven and chopped strand glass and shall be approximately 25% by weight. Exterior surface shall have a C/W barrier.
3. Resin shall be high quality isophthalic, neopentyl glycol, halogenated polyester with acrylic modification and UV stabilizers.
4. Finish shall be embossed exterior/smooth interior.
5. Panel weight shall be nominal 17 oz. (RFM 17), 14 oz. (RFM 14), 11 oz. (RFM 11) per square foot in order to comply with the maximum loads and spans recommended by Resolite.
6. Color shall be opaque, No. _____ (133 Stone White, 197 Gray or 175 Beige).
7. Profile shall be _____ (Standard: 7.2 x 1.5" or 4.2 x 1 -1/16") (Optional: 7.2D x 1.75" or 7 x 1.5") Length shall be _____
8. Panels shall be Factory Mutual approved per standard 4880/4881 for use without height or area limitations and without sprinkler protection. ALL PANELS SHALL HAVE THE FM LABEL.
9. Panels shall have a flame spread classification of 15* or less and a smoke classification of less than 250 per ASTM E 84.