



## TECHNICAL DATA SHEET

Product Name: Rigid Building Foams

### Product Description:

WeatherAll Coatings manufactures a complete line of polyurethane closed and open cell rigid foams which may be sprayed or poured via high or low pressure mixing and dispensing machines. These formulations offer a unique blend of properties yielding excellent mechanical, structural stiffness, provide high R-value thermal insulation, fire-retardants and are hydrophobic. These foam systems can be easily adjusted to meet very demanding specifications for many types of engineered and interesting applications. The wide range of densities produce use in numerous diverse industrial and commercial applications. Rigid foams are seen in a vast array of reaction time applications such as building insulation, structural reinforcement, slab-jacking, floatation components, void filling, sculpting artwork, mold making, etc. Rigid foams may be color coated using the WeatherAll Rigid Foam HardCoat or directly apply a decorative textured finish which may easily be sprayed on to its surface to create exterior architectural components which may be bonded into place. Many of these 2-component foaming systems maintain dimensional and thermal stability and will not deform or distort within operating temperature of -100F to 200F. Fire retardant formulations are typically required in public buildings, enclosures, warehouses, etc. Installation cream and cure times range from 30 sec. to 30 min. which may also depend on the application method (spray vs. pour), ambient temperature and humidity. Pour foam applications require longer cure times with caution taken for large castings which produce high exothermic reaction temperatures. Rigid Foams are either water or gas blown (245). These foams are premium building product materials which provide cohesive structural integrity, stop penetrating moisture and air offering good vapor barriers. Densities of 2-3 pcf have been tested to MIL-P21929C.

- Excellent dimensional stability, uniform cellular expansion.
- Very low density to very high density range available.
- Fire retardant E-84 Class I

### Application:

For spray foams, a high pressure plural component pumping machine is used. These foams require material heating normally between 120F (49°C)-150F (65°C). Cure times of for spray foams range around 20-30s. Rigid foams may also be hand batch mixed in small volumes with 30-40sec. cure times. When spraying foam it is important to apply the estimated desired expansion thickness in single heavy one-pass delivery. Do not dispense multi-passes as pin-holing and blisters will occur. For best cast foaming results, it is best to pre-heat material to 90°F. Application substrate must be dry with relative humidity below 85% when using water-blown foams. Foams may be applied from 40°F to 100°F. Functional operating temperatures may extend up to 250 F. These foams yield excellent adhesion and self-skin to become water repellent. All Rigid Foams require a UV protective top-coating for exterior weatherability applications.

See Available Rigid Foams Chart, Appendix C1.

Please contact our Engineering and/or Technical Support Groups with any questions.

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Scientific Chemical Laboratories, U.S.A.

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### Appendix C1

#### RIGID BUILDING FOAMS PHYSICAL PROPERTIES

Gas-Blown Properties are shown in ( )

Density (PCF)	0.5	1.0	1.5	2.0	2.5	3.0	6.0	10.0	D1622
Closed Cell Content	Open	>40	>70	>80	>90	>98	>99	>99	D2856
R-Value	3.6	4	4.5(5.7)	4.7(6.8)	4.7(6.8)	4.7(6.5)	4.7(5.5)	4.7(5.0)	C518
Compressive psi	12	14	15	29	40	61	100	201	D1621
Shear psi	15	17	18	22	26	35	85	127	C273
Tensile psi	20	25	30	40	44	62	165	227	D1623
Flex Strength psi	35	40	45	55	65	123	204	312	C203
Flexural Modulus	111	145	164	522	963	2356	4785	7055	C203
Water Absorption % vol.	<5.0	<5.0	<1.0	<1.0	<0.5	<0.1	<0.1	<0.1	D2842
Water Vapor (perm-in.)	<5.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	E96

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Elastopor VF 2200 Pour Foams deliver excellent flow and adhere readily to most substrates. These closed-cell polyurethane rigid foams may be used in a wide range of thermal insulation applications such as in the insulation of refrigerators and freezers. Other uses include pipe insulation for long distance pipelines for oil and gas transportation. Achievable properties are resistance to high temperatures, flame retardancy, durability and simple processing methods. Also, a wide range of foam densities and mechanical properties are obtainable to create light to heavy structural parts. These two-component rigid polyurethane foam systems listed below allow lower internal exothermic core temperatures which allow for larger pour castings. It must be noted that care and patience must be exercised when filling large void areas. These foams may be dispensed using frothing pressurized dispensing equipment or standard 2K gear pump static mixing nozzle equipment.

**Appendix D1**

RIGID BUILDING FOAMS PHYSICAL PROPERTIES						
<u>Property</u>	<u>Test Value</u>					<u>Test Method</u>
Core Density (PCF)	1.5	2.6	3.5	6.0	10.0	ASTM D1622
Compressive psi	15	43	61	100	201	ASTM D1621
Tensile psi	30	52	62	165	227	ASTM D1623
Closed Cell Content	>70	>87	>98	>99	>99	ASTM D6226
Water Absorption % vol.	2.1	1.8	1.8	1.5	1.0	ASTM D2842
Dimensional Stability	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	ASTM D22126

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