

FASTBLOCK® 800 Series



WATER-BASED, SPRAYABLE FIRE AND THERMAL BARRIER COATINGS

Description

FASTBLOCK® 800 SERIES coatings are water-based fire and thermal barriers for extreme heat flux environments. Delivered ready-to-use, FASTBLOCK® 800 materials can be sprayed onto many substrates using conventional airless spray equipment. They can also be spread by trowel or dispensed from a caulking gun. The compounds cure to a stiff, low density coating at temperatures up to 170°F. Cure time depends on application thickness and ambient temperature. Upon exposure to fire or extreme temperatures, the materials ceramitize to hard, protective surfaces. FASTBLOCK® 800 SERIES products can be topcoated with many common paints and coatings.

Benefits

FASTBLOCK® 800 SERIES water-based, sprayable coatings offer the following advantages:

- ▶ Reduce installation costs by quickly covering large surfaces with minimal preparation
- ▶ Eliminate environmental, safety, and storage concerns
- ▶ Clean up quickly with water
- ▶ Increase occupant safety by meeting the most stringent fire, smoke, and toxicity requirements
- ▶ Allow low cost and light weight nontraditional materials to be used in fire and heat environments

Uses

FASTBLOCK® 800 SERIES compounds are recommended for use where superior fire barrier, thermal insulation, or ablation properties are required. They function effectively at temperatures from -54°C to +204°C (-65°F to +400°F) and can withstand short-term exposure to temperatures of +1745°C (+3000°F).

FASTBLOCK® 800 SERIES compounds are used as low cost, light weight replacements for cork tiles and other fire and thermal shields in many high heat flux applications such as launch vehicles and missiles. FASTBLOCK® 800 SERIES coatings have been shown to increase driver comfort in NASCAR® vehicles by reducing heat transfer through the floorboards and engine firewall. These materials may also be used to fire and heat protect graphite/epoxy, aluminum, and other sensitive materials in weapons systems, containers, aircraft, ships, and other areas where people and systems would benefit from low fire, smoke, and toxicity protection.

Sample Properties – FASTBLOCK® 800*

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DENSITY (Dry)	.32 g/cm ³ (20.0 lb/ft ³)		ASTM D297														
THERMAL CONDUCTIVITY	.07 W/m-K (.04 BTU/ft-hr-°F) at 26°C (78°F)		ASTM D433/C518														
HARDNESS	50 Shore A		ASTM D2240														
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FIRE RESISTANCE	<p>No flame penetration or backside ignition of a slab when impinged upon by an 1100°C, 116 kW/m² (2000°F, 10 BTU/ft²-s) kerosene flame for 15 minutes. The following backside temperatures were recorded at test completion:</p> <ul style="list-style-type: none"> ▶ 71°C (160°F) for a 10.2 x 10.2 x 2.5 cm (4 x 4 x 1 inch) panel ▶ 256°C (492°F) for a 10.2 x 10.2 x 1.27cm (4 x 4 x .5 inch) panel ▶ 261°C (501°F) for a 10.2 x 10.2 x .9cm (4 x 4 x .36 inch) panel 		FAA AC 20-135														

FLUID RESISTANCE	<p>2024-T3 aluminum panel with an epoxy corrosion inhibiting primer immersed in each fluid for 168 hours at 49°C (120°F):</p> <ul style="list-style-type: none"> ▶ Control Panel: 15 N/cm (9 ppi) peel strength and 252 kPa (37 psi) shear strength ▶ MIL-L-7808 Engine Oil: 20 N/cm (12 ppi) peel strength and 103 kPa (15 psi) shear strength ▶ JP-4 Jet Fuel: 31 N/cm (18 ppi) peel strength and 221 kPa (32 psi) shear strength ▶ Skydrol 500B: 15 N/cm (8 ppi) peel strength and 232 kPa (34 psi) shear strength ▶ MIL-A-8243 Deicing Fluid (Propylene Glycol): 27 N/cm (15 ppi) peel strength and 238 kPa (35 psi) shear strength 	<p>ASTM C794/D903 and ASTM D1002, respectively</p>
DRY TIMES	<ul style="list-style-type: none"> ▶ .325 cm (.125 inch): 24 to 48 hours at 22°C (72°F) and 5 to 8 hours at 49°C (120°F) ▶ .64 cm (.25 inch): 120 to 168 hours at 22°C (72°F) and 10 to 24 hours at 49°C (120°F) ▶ 1.27 cm (.50 inch): 156 to 240 hours at 22°C (72°F) and 48 to 120 hours at 49°C (120°F) 	
SAG	<p>No sag observed when material is applied at room temperature up to .76 cm (.3 inch) thick on a vertical surface. Sag-free coatings of greater than .76 cm (.3 inch) can be achieved by applying additional layers of material over dry layers.</p>	
TACK-FREE TIME	4 hours	
NON VOLATILES	60%	
REPAIRABILITY	Satisfactory	

* FASTBLOCK® 800 is one of several compounds in the 800 series. Properties shown are actual values from Test Report Summary – TR174, March 2006. Please refer to the material specification TA 14004. Rev. C (SP 174) and test report summary for each compound of interest.