Surrounding You with Exceptional Protection

Boro-Block™ Membrane
Urethane Asphalt Membrane

PRODUCT DESCRIPTION

Blome Boro-Block™ Membrane is a two-component, high-solids, elastomeric adhesive/membrane based on a unique urethane-asphalt technology. Boro-Block™ Membrane cures to form a flexible and impermeable membrane that is used to adhere Boro-Block™ Borosilicate Glass Block to a wide variety of properly prepared substrates. This membrane/block system is used protect stacks and ductwork in highly corrosive flue gas desulfurization (FGD) environments. Boro-Block™ Membrane is resistant to most mineral acids including sulfuric, hydrochloric, and phosphoric acid solutions. Boro-Block™ Membrane is also resistant to alkali reagents used to neutralize acidic gases. The material exhibits excellent bond strength to properly prepared substrates, including concrete and steel substrates. Blome Boro-Block™ Membrane remains flexible over a temperature range of –40°C to 110°C and is suitable for direct excursions up to 120°C in upset/bypass conditions that may occur in FGD processes. Resistance behind block is significantly higher.

TYPICAL USES

Blome Boro-Block™ Membrane is designed for use as an adhesive/membrane in flue gas desulfurization units in coal-fired and oil-fired power plants. When used in conjunction with Boro-Block™ Borosilicate Glass Block, it provides excellent protection against corrosion in areas such as:

- Ductwork
- Chimneys
- Scrubber inlets and outlets

HANDLING CHARACTERISTICS

Blome Boro-Block™ Membrane is supplied as a 2-part, trowel-applied system. Part A is a black paste, and Part B is an amber, viscous liquid. This formulation has ideal handling properties and is smooth spreading for easy application by steel trowel. Typical trowel application thickness is 3mm in one pass to horizontal and vertical substrates and block side joints.

TYPICAL PROPERTIES
WET

BoroBlock Membrane – Part A	**Property**
Composition:	Polyol/Asphalt/Reinforcing Filler Blend
Appearance / Color:	Thick paste-like gel / Black
Density @ 25 °C:	1.00 – 1.05 g/L
Flash Point (PMCC):	>38 °C
Solids Content:	>94%/wt.

BoroBlock Membrane – Part B	**Property**
Composition:	MDI Pre-polymer blend
Appearance / Color:	Amber liquid
Density @ 25 °C:	1.1 – 1.2 g/L
Flash Point (PMCC):	>120 °C
Solids Content:	100%/wt.

PROPERTIES, CONT.

BoroBlock Membrane – Mixed	Property
Appearance / Color:	Thick paste-like gel / Black
Density @ 25 °C:	1.00 – 1.05 g/L
Flash Point (PMCC):	>38 °C
Sag Resistance @ 50 °C:	>3.2 mm
Slump after 5 hours @ 50 °C (3.2 mm bead):	No slump after 5 hours
Mix Ratio (Part A:Part B):	44:1 by wt.
Pot life:	@20-30°C = 60-90 minutes
	@40-50°C = 30-45 minutes
Initial set:	@20-30°C = 8 - 12 hours
	@40-50°C = 4 - 6 hours
Final cure:	@25°C = 5 days minimum
	@45°C = 2 days minimum

CURED

BoroBlock Membrane - Cured	Property
Color:	Black
Appearance:	Tough, rubber-like compound
Appearance after 24 hrs @ 60 °C:	No change compared to control
Water Absorption:	Less than 0.1%
Pull Off Adhesion (ASTM D570):	>1.7 MPa
Flow of Cured Film @ 100 °C (ASTM D1851):	None
Tensile Elongation (ASTM D412):	200%
Tensile Strength (ASTM D412):	>1.03 MPa
Tensile Modulus @ 100% Elongation (ASTM D412):	0.4 MPa
Service Temperature, Direct:	110 °C
Service Temperature, Behind Block:	150 °C
Perm Rate (ASTM E96, Method B):	<0.5 g/(h*m2)
VOC Content, Reacted Mix (Tested):	8.6 g/L

PACKAGING, ESTIMATING & STORAGE

Blome Boro-Block™ Membrane is supplied as a two (2)-component product, consisting of Part A and Part B. Boro-Block™ Membrane components are packaged as follows:

Unit Size	16.3 kg	Coverage
Part A	15.9 kg (Short-filled, 19 L pail)	152mm x 229mm x 38mm block: 4.47 kg/M2 (bed and side joints)*
Part B	0.4 kg	152mm x 229mm x 51mm block: 4.93 kg/M2 (bed and side joints)*
		*NO overage included in above figures

Shelf life for Boro-Block™ Membrane components is twelve (12) months at up to 40-50 °C (2 years at 20-25°C). Shelf life may be lower at temperatures above 50 °C. Retest material if stored at above 50 °C for more than 6 months. Keep Boro-Block™ Membrane components tightly sealed in original containers until ready for use. Store components in a cool, dry place, out of direct sunlight, on pallets at temperatures between 25°C – 45°C. Protect Boro-Block™ Membrane from water and weather in storage and on job site.

BID SPECIFICATION GUIDE

Use Blome Boro-Block™ Membrane as supplied by Blome International, O'Fallon, MO.

JOB SITE ENVIRONMENTAL CONDITIONS

Weather conditions, especially dew point, should be constantly monitored. Final blast cleaning and application of membrane-block system must only be performed when the temperature of steel substrates will not fall within 3°C of the dew point. Dehumidification and/or temperature control may be necessary to meet this requirement. Use a surface thermometer to frequently monitor the temperature of steel substrates during installation.

Blome Boro-Block™ Membrane is best applied when ambient temperatures are between 20°C and 40°C. Do not apply at temperatures below 15°C. For best results, keep Boro-Block™ Membrane components at 20°C minimum, for 24 – 36 hours prior to installation. Avoid installing Boro-Block™ Membrane in direct sunlight. Installations of Boro-Block™ Membrane should be protected from water and weather during installation and curing.

SURFACE PREPARATION

Concrete substrates to which Blome Boro-Block™ Membrane will be applied must have a minimum 28 day cure or have a minimum compressive strength of 21 MPa. Minimum tensile strength of concrete must be 2.1 MPa. Concrete must be dry in accordance with ASTM D 4263 Plastic Sheet Test Method. Concrete surfaces must be free of all laitance, oil, curing compounds and any dust or other loose materials prior to installation of Boro-Block™ Membrane. Concrete substrates to which Blome Boro-Block™ Membrane will be applied should be primed using Blome Primer 75 prior to installation of the membrane. Apply Primer 75 to prepared concrete substrates using brush or roller, making certain to work primer into the pores of the concrete. Allow primer to cure tack free or until the next day prior to the installation of Boro-Block™ Membrane/Boro-Block™ Glass Block System.

Steel substrates should be prepared by abrasive blasting to achieve near white metal clean SSPC 10. Blasted steel substrates must not be allowed to flash rust prior to installing membrane. Apply Primer 75 to hold blast. Allow primer to cure tack free or until the next day prior to the installation of Boro-Block™ Membrane/Boro-Block™ Glass Block System.

SAFETY PRECAUTIONS

Blome Boro-Block™ Membrane, Activator, and mixes of them present various health hazards if handled improperly. Consult Blome Safety Data Sheets before use.

Boro-Block™ Membrane Resin is flammable, will cause eye injury and irritate skin and Boro-Block™ Membrane Part B is an isocyanate material and is a skin and eye sensitizer. Wear respirator suitable for organic vapors, safety glasses with side shields, gloves and long sleeve shirts to prevent all contact with skin and eyes. After working with Blome Boro-Block™ Membrane, wash thoroughly before eating, drinking, smoking or other activities.

MIXING AND APPLICATION

Blome Boro-Block™ Membrane is best mixed with a drill motor driven paddle blade or “Jiffy” PS-1 mixer. All mixing and application equipment must be clean, dry, and free of any contaminants including Portland cement, other mortars, or resins. Boro-Block™ Membrane is

designed for use in moderate climates (20 – 40 °C). The minimum application temperature is 15 °C.

Mix contents of Part A pail for 1-2 minutes before adding Part B. Continue mixing and slowly add Part B to Part A and blend thoroughly for an additional 1-2 minutes. The mix ratio is 44:1, by weight, Part A:Part B, however, splitting kits is NOT recommended.

Ensure sides and bottom of pail are scraped during mixing. Mix only full kits.

Boro-Block™ Membrane is applied with a trowel on Boro-Block™ bed and side joints at a nominal thickness of 3mm. Consult Boro-Block™ application guidelines for additional information.

CLEANUP

All tools, mixing equipment, gloves and application equipment should be cleaned up immediately using mineral spirits or a citrus-based biodegradable cleanser, with hot water, while material is still wet. If material begins to cure, stronger solvent-based cleaners may be required for removal.

WARRANTY

We warrant that our goods will conform to the description contained in the order and that we have good title to all goods sold. Our material data sheets and other literature are to be considered accurate and reliable, but are used as guides only. WE GIVE NO WARRANTY OR GUARANTEE, WHETHER OF MERCHANT ABILITY OR FITNESS OF PURPOSE OR OTHERWISE, AND WE ASSUME NO LIABILITY IN CONNECTION THEREWITH. We are happy to give suggestions for applications; however, the user assumes all risks and liabilities in connection therewith regardless of any suggestion, we may give. We assume no liability for consequential or incidental damages. Our liability, in law and equity, shall be expressly limited to the replacement of non-conforming goods at our factory, or at our sole option, to repayment of the purchase price of the non-conforming goods.

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