Blome CS-B10G
Glass Fiber Fabric for Composite Strengthening

DESCRIPTION AND USES

Blome CS-B10G is a 10 oz., bi-directional E glass fiber fabric. This material is field laminated using either the wet or dry lay-up method. Field laminating uses either Blome CS-600 or CS-650 Epoxy to form a glass fiber reinforced polymer (GFRP) used to strengthen various structural elements.

Damage/Deterioration of industrial structures
Restoring integrity to chemically deteriorated or damaged structures
Concrete/Brick Chimney wrapping
Concrete storage silos
Tile tanks and chests
Steel storage tanks and process vessels

Load increases
Installation of heavy machinery in industrial buildings
Vibrating floor slabs, columns
Building utilization changes
Increased live loads
Increased traffic volumes

Seismic strengthening
Concrete/Brick Chimneys
Tile tanks, chests and silos
Column wrapping
Masonry walls

Structural system changes or defects
Removal of walls or columns
Removal of slab sections for openings
Insufficient reinforcements
Insufficient structural depth

ADVANTAGES/BENEFITS

Lightweight fabric - ideal for confined spaces
Used for shear, confinement or flexural strengthening
Flexible - can be wrapped around complex shapes
High strength
Non-corrosive
Corrosion resistant
Low aesthetic impact - can be painted to match existing structures

PACKAGING/COVERAGE

Blome CS-B10G Fabric is supplied in rolls: 50 in. x 450 ft.

For practical coverage, make necessary allowances for condition of the substrate, temperatures, jobsite conditions, waste, overspray, etc.

TYPICAL PROPERTIES

Storage Conditions	Store dry at 40°-95°F (4°-35°C)
Color	Black
Primary Fiber Direction	0°/90° (bi-directional)
Weight per Square Yard	9.6 oz. (325 g/m^2)
Weight Ratio (warp:weft)	1:1

Cured Laminate Properties (0º & 90º) Design Values

Tensile Strength	35,300 psi (244 MPa)
Tensile Modulus	2.35 x 10^6 psi (16,215 MPa)
Thickness	0.013 in. (0.33 mm)
Elongation at Break	1.2%
Strength per Inch Width	572 lbs./layer (2.53 kN)

Fiber Properties

Tensile Strength	3.3 x 10^5 psi (2,276 MPa)
Tensile Modulus	10.5 x 10^6 psi (72,390 MPa)
Elongation	4.0%
Density	0.092 lbs/in^3 (2.54 g/cc)

STORAGE AND SHELF LIFE

Keep CS-B10G Fabric and other system components tightly sealed in a dry place and in their original containers until ready for use. Store at 50°F to 75°F, protected from water, weather and out of direct sunlight. Blome CS-B10G has a shelf life of one year, when properly stored. Refer to batch number on label for date of manufacture.

APPLICATION GUIDELINES
TEMPERATURE CONSIDERATIONS

The temperature of the surface to be coated, and the ambient air temperature, should be at least 55°F while applying this system and while it cures. If you wish to attempt to apply in cooler temperatures, tarp and heat the area to be coated to create and maintain the minimum 55°F conditions. Stop application if the temperature falls within 5°F of the dew point. Twenty-four hours before application, all materials should be stored at 75°F-85ºF, to facilitate mixing and handling.

SURFACE PREPARATION -GENERAL

Surface must be clean and sound. It may be dry or slightly damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult Blome CS-600 and CS-650 technical data sheets for additional information on surface preparation.
Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified after surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.
Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture. In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand or water blasting is sufficient.

Preparation Work: Steel (Tank Interiors) - Abrasive blast steel surfaces to white metal finish with a 2 to 3 mil anchor profile. (Ref. SSPC-SP-5) All welds should be continuous and should be ground to remove sharp edges, laps, under cuts and other surface irregularities. Relatively smooth, ripple finished welds are acceptable. Blome CP-83MP Epoxy can be used to smooth out any irregular welds just prior to applying GFRP System.

Preparation Work: Steel (Exterior Wrapping) - Abrasive blast steel surfaces to a near white metal finish with I to 2 mil anchor profile. (Ref. SSPC-SP-10) All welds should be continuous and should be ground to remove sharp edges, laps, under cuts and other surface irregularities. Relatively smooth, ripple finished welds are acceptable. Blome CP-83MP Epoxy can be used to smooth out any irregular welds just prior to applying GFRP System.

MASKING

Masking surfaces that are not to be wrapped is recommended. The Blome GFRP System is difficult to remove, once cured.

APPLICATION

Blome CS-B10G can be applied using wet or dry lay-up methods.
Dry Lay-Up: Apply the mixed Blome CS-650 epoxy resin directly onto the substrate at a rate of 40-50 ft.^{2}/gal. (32-40 mils), depending on the surface profile. Carefully place the fabric into the resin with gloved hands and smooth out any irregularities or air pockets using a plastic laminating roller. Allow the resin to squeeze out between the rovings of the fabric. Saturate fabric using Blome CS-600 or CS-650 Epoxy at a rate of 50-60 ft^2/gallon until fabric is wetted out completely. If a smoother surface is desired, apply a final coat of Blome CS-600 or CS-650 to the exposed surface at a rate of 160 ft^2/gal. (10 mils).

Wet Lay-Up: Seal the entire prepared concrete surface with Blome CS-600 or CS-650 epoxy resin at a rate of 40-50 ft^2/gallon (32-40 mils). Material may be applied by spray, brush or roller. Blome CS-B10G is then impregnated using Blome CS-600 epoxy at a rate of 50-60 ft^2/gallon. For best results, the impregnation process should be accomplished using an automated saturation device. Once saturated, apply fabric to the sealed concrete surface and smooth out any irregularities or air pockets using a plastic laminating roller. If required, apply additional layers of fabric while epoxy on previous layer is still tacky. For overhead or vertical applications, prime concrete with Blome CS-650 to improve tack. Saturate fabric with Blome CS-600. If a smoother surface is desired, apply a final coat of Blome CS-600 or CS-650 to the exposed surface at a rate of 160 ft^2/gallon (10 mils). Installation of Blome GFRP Systems should be performed only by specially trained and approved contractors.

CUTTING FABRIC

Fabric can be cut to appropriate length by using a commercial quality heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber, their use should be avoided. Consult MSDS for proper handling procedures.

CLEANUP

Before material gels, tools and equipment should be cleaned using hot, soapy water or a citrus based, biodegradable cleaner. After system components begin to cure, xylene or MEK will be required.

LIMITATIONS

Design calculations must be made and certified by an independent licensed professional engineer. System is a vapor barrier. Saturated concrete should not be encapsulated in areas of freeze/thaw.

CAUTION

Blome CS-B10G fabric is non-reactive. However, caution must be used when handling since a fine “glass/silica dust” may be present on the surface. Gloves must therefore be worn to protect against skin irritation.

Caution must also be used when cutting Blome CS-B10G fabric to protect against airborne glass/silica dust generated by the cutting procedure. Use of an appropriate, properly fitted NIOSH approved respirator is recommended. Avoid contact with skin & eyes; do not ingest material or inhale vapors. When mixing or applying Blome GFRP Systems, always wear chemical goggles, appropriate rubber gloves, and other appropriate safety clothing. When spraying in confined areas, wear a fresh air hood and make provisions for forced air ventilation. When spraying in open areas, a NIOSH approved respirator suitable for organic vapors can replace fresh air hood. Prolonged or repeated exposure to Blome GFRP System components may cause skin irritation and/or allergic reactions. Refer to Blome material safety data sheets on individual components.

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 MERCHANTABILITY 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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Supersedes all previous literature