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TECHNICAL DATA SHEET

Product: MASCOBOND HI-MOD GEL
Revision Date: 3/19/2015

DESCRIPTION

MASCOBOND HI-MOD GEL is a 100% solids, two component moisture insensitive, high modulus gel, structural epoxy resin adhesive system.

USES

- Seals cracks and around injection ports prior to pressure injection grouting.
- Grouting bolts, dowels and pins in vertical, horizontal and overhead holes.
- Interior, vertical and overhead repair of concrete as an epoxy mortar binder.
- Structural bonding concrete, masonry, steel, wood with maximum glue line 1/8".

FEATURES AND BENEFITS

- Easy 1 to 1 mixing ratio.
- Insensitive to moisture before and after cure.
- Excellent for bonding non-mating structural materials.
- Combined with MASCOBOND AGGREGATE makes a non-sag epoxy mortar for vertical & overhead repair.

PHYSICAL PROPERTIES

Type:	Moisture Insensitive & Low Temperature Cure Hi-Modulus Epoxy Gel	
Mixing Ratio:	1A to 1B by volume	
Color:	Part A Resin	Light Gray
	Part B Hardener	Amber
	Ad-Mix	Light Gray
Viscosity (ASTM C-881):	Gel	
Pot Life (ASTM C-881):	Approx. 30-40 min	
Tack Free Time @ 75°F*:	3-5 hrs	
Bond Strength (ASTM C-882):	2 days	2,200 psi
	14 days	2,400 psi
Water Absorption (ASTM D-570):	.23%	
Linear Co-Efficient Shrinkage (ASTM D-2566):	.0007	
Compressive Strength (ASTM D-695):	11,000 psi	
Compressive Modulus (ASTM D-695):	2.5x105	
Elongation at Break (ASTM D-638):	2.56%	
Flexural Strength (ASTM D-790):	5,500 psi	
Shear Strength (ASTM D-732):	3,500 psi	
Shrinkage (ASTM D-884):	Pass	
Thermal Compatibility (ASTM D-884):	Pass	

*Ambient Temperature

SURFACE PREPARATION

Surface must be clean and sound. It may be dry or damp, but free of standing water. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials. Preparation work: Concrete - Sandblast or use other approved mechanical methods. Steel - Sandblast to white-metal finish.

MIXING INSTRUCTIONS

Material must be conditioned at 70°F for at least 24 hours prior to application.

Binder: Pre-mix each component separately. Place in a clean container, 1 part by volume of Component A (Resin) and then add 1 part of Component B (Hardener). Container should have a flat wall and flat bottom. MIX THOROUGHLY for 3 minutes with a paddle on a slow speed drill (400 or 600 rpm). Scrape the sides and bottom of bucket thoroughly while mixing. MASCOBOND HI-MOD GEL is an epoxy gel and does not readily flow from the sidewalls of the mixing container to be mixed. Improper mixing will create soft spots in the finished product.

Mortar: Mix Components A and B as above, then slowly add MASCOBOND AGGREGATE. Amount added may be varied depending on desired consistency. Recommended maximum amount is 1 volume of aggregate to 1 volume of mixed epoxy gel.

APPLICATION TECHNIQUES

Structural adhesive: Apply neat MASCOBOND HI-MOD GEL to mating and non-mating prepared substrates. Work into the substrate for positive adhesion. Secure the bonded unit firmly into place until the adhesive has cured. Glue line should not exceed 1/8 in.

Seal cracks for injection grouting: Place the neat material over the cracks to be pressure injected and around each entry port. Allow sufficient time to set before pressure injecting.

Anchor bolts, dowels and pins: Use neat. For efficient transfer of stress, the hole should be no greater in diameter than 1/4 in. larger than the bar, pin, or rod to be embedded. Depth of embedment is typically 10 to 15 times bar diameters. Due to the non-sag consistency, it is important that a long nozzle be used to force the epoxy into the bottom of the bolt hole to avoid air entrapment.

Mortar: Apply with spatula, trowel or caulking gun. Add aggregate filler to avoid sagging on vertical and overhead surfaces. Do not apply the epoxy gel mortar at thickness greater than 1 inch. Apply subsequent lifts within 12 hours, or mechanical abrasion of surface required.

Note: For bonding fresh plastic portland cement or concrete to hardened concrete, use MASCOBOND HI-MOD.

COVERAGE

Adhesive: 1 gallon of MASCOBOND HI-MOD GEL covers approximately 12 square feet at 1/8" on smooth surfaces.
Grout: yields approximately 231 cubic inches per gallon.
Mortar: 1 gallon of MASCOBOND HI-MOD GEL when mixed with 1 gallon of MASCOBOND AGGREGATE will yield approximately

460 cubic inches.

COMPLIANCE

MASCOBOND HI-MOD GEL conforms to ASTM C-881-90 Types I, II, IV, and V Grade 3 Classes B & C and AASHTO M-235 for epoxy resin systems.

TEMPERATURES

Will cure at temperature as low as 40°F, providing the temperature will be 40°F and rising during the next 72 hours. Epoxy materials should be stored at least 24 hours prior to use at 70°F, or higher. Epoxies stored below 60°F, will cause the epoxy to thicken substantially, making it difficult to properly blend the two materials and obtain a proper mating of resin and hardener. PROTECT FROM INCLEMENT WEATHER AND FREEZING. If product temperature falls below 50°F it is recommended that a product temperature of 70°F be obtained prior to using.

CAUTIONS

Minimum application temperature 40°F. Maximum glue line 1/8 of an inch. Minimum age of concrete must be 21-28 days depending on curing and dying conditions. Test for moisture vapor transmission prior to application. Moisture passing through the substrate by pressure during the application and after curing of epoxy will cause bond failures. Material is a vapor barrier after cure. For application on exterior, on-grade substrates, consult Technical Service. For spray application, consult Technical Service. Do not thin with solvent. Solvent will prevent proper cure. Maximum epoxy mortar thickness is 1" per lift. Use only oven dry aggregate. Epoxy mortar is for interior use only. For multiple lifts consult Technical Services. Ultraviolet light can discolor MASCOBOND HI-MOD GEL. Not for injection of cracks under hydrostatic pressure. Do not inject cracks greater than 1/4 in. without consulting Technical Service. Due to many variables in bonding to damp surfaces, be certain to test application under the same conditions as the full-scale work.

PACKAGING

½ gallon for 2 gallon units. Available in larger units upon request.

Storage: 60-85°F (Protect from freezing.)

Shelf Life: 1 year, unopened, protected storage.

HAZARDS IDENTIFICATION

Component "A": Vapors from product may cause irritation to the nose, throat, and respiratory tract. Coughing and chest pains may result. High vapor concentrations may produce CNS depression. Product may cause severe eye irritation. Skin contact with product may cause irritation, redness, and discomfort which is transient. Product may be slightly toxic if ingested. Repeated exposure may cause skin sensitization, skin irritation, and dermatitis. Preexisting eye, skin, and respiratory disorders may be aggravated by exposure of this product.

Component "B": Vapors/mist may be corrosive to upper respiratory tract. Repeated or prolonged exposure can result in lung damage. Lung damage may be evidenced by shortness of breath and may be accompanied by chronic cough. Product may cause irritation to the eyes. Corrosive to eyes and may cause severe damage including blindness. Corrosive to the skin; may cause skin sensitization. Ingestion may cause permanent damage to the mouth, throat, and stomach. Repeated exposure may cause skin sensitization or sensitization to the respiratory tract and development of an asthmatic reaction to future exposure. Preexisting eye, skin, and respiratory disorders may be aggravated by exposure of this product.

FIRST AID

Inhalation: Leave are to breathe fresh air. Avoid further exposure. If symptoms persist, get medical attention.

Eyes: Flush with water for at least 15 minutes. Get medical attention immediately.

Skin: Wash with water. If irritation, rash or other disorders develop, get medical attention immediately.

Ingestion: Do not induce vomiting unless advised by a physician. Call nearest Poison Control Center or Physician immediately.

CLEANUP INSTRUCTIONS

Ventilate area. Confine spill. Collect with absorbent material, flush area with water. Dispose of in accordance with current applicable local, state and federal regulations. Uncured material can be removed with an approved solvent. Cured material can only be removed mechanically.

TECHNICAL SERVICE

For application procedures or surface conditions not specified above, please contact:

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