

# 580

## HI-MOD MULTI-PURPOSE EPOXY GROUTING/BONDING ADHESIVE



Pourable Grade Available in Two Types:  
Standard and LPL (Extended Working Time)

PRODUCT DATA SHEET

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580 HI-MOD MULTI-PURPOSE EPOXY

### DESCRIPTION

580 HI-Mod Multipurpose Pourable Epoxy with a unique two-component, easy one-to-one mixing ratio, for structural repairs, usable in a moisture-tolerant environment.

Designed for a multiple of uses. A Standard Set for the rapid strength development, an LPL version with extended working time for warm weather applications, spraying, and placement of a Thin Set epoxy mortar skim coat for protection of concrete surfaces.

### FEATURES AND BENEFITS

- Convenient easy to use 1:1 by volume
- Light gray, easy paint-like creamy consistency with non-settling type pigments for easy brushability and spraying.
- Standard Type develops fast-strength to minimize downtime, low temperature cures as low as 40°F (4.4°C).
- LPL Type with extended working time for applications in warm and hot environments, with extended working time for spray operations and placement of epoxy mortar/grouts.
- Tolerant to moisture before, during, and after cure.
- Excellent for use as thin-set resurfacer/mortar and grouting applications.
- High strength bonding adhesive for most structural materials.
- Good chemical resistance for long-term protection.
- Excellent abrasion resistance with selected granules for long-term wear.
- Zero VOC – Fully Reactive, No low boiling constituents

### WHERE TO USE HI-MOD MULTI-PURPOSE EPOXY GROUTING/BONDING ADHESIVE

- LPL and Standard Grades for thin-set resurfacer/mortar and grout applications.
- HI-Build Epoxy Corrosive resistant protective coating.
- Non-sag mortar for vertical /overhead repair.
- Low maintenance, skid resistant/abrasive adhesive coating for parking, loading decks and industrial floors.
- High Strength grouting of bolts, dowels, rebar, pins, etc.
- Waterproofing Membrane between Asphalt Overlay and Concrete
- Structural adhesive for bonding fresh concrete and hardened to hardened concrete.
- Gravity feeding for grouting horizontal cracks in structural concrete.
- High-strength epoxy mortar for base plate grouting of machinery.



**TYPICAL DATA**

(Material and curing conditions @ 75°F (24°C) and 50% R.H.)

Different temperature information for Pot-Life, Tack-Free Time and Compressive Properties are to be used as a guideline for expected properties in actual field application temperatures.

Conforms to ASTM-C-881 and AASHTO-M -235 Type I, II, IV, and V, Grade 2, Class B and C specifications

HIGH MOD MULTIPURPOSE EPOXY GROUTING/BONDING ADHESIVE	Standard			LPL		
<b>Color:</b>	Medium gray*			Medium gray*		
<b>Mixing Ratio:</b> Component A/B	1:1 by volume			1:1 by volume		
<b>Viscosity:</b> ASTM-D-2393 (poises)	70-100			70-100		
<b>Pot Life:</b> (70 ml) 75°F (24°C) Neat in minutes	30-60			120-160		
(70 ml) 100°F (38°C) Neat in minutes	15-20			50-70		
<b>Tack Free Time:</b>						
<b>Substrate Temperature:</b>	40°F(4°C)	75°F(24°C)	90°F (32°C)	40°F(4°C)	75°F(24°C)	90°F (32°C)
<b>Material Temperature:</b> 75°F (24°C) Hr.	7-9	2-4	1-1.5	12-16	4-5	2-2.5
<b>Material Temperature:</b> 100°F (38°C) Hr.	5-7	1-2	1-1.25	7-9	3-4	1-1.5
<b>Tensile Properties:</b> (ASTM-D-638)						
14 day Tensile Strength	7,000 psi (48.2 MPa)			7100 psi (49 MPa)		
Elongation at Break	Approx. 1.8%			Approx. 1.7%		
Modulus of Elasticity	3.3 x 10 <sup>5</sup> psi (2,275 MPa)			3.4 x 10 <sup>5</sup> psi (2,344 MPa)		
<b>Flexural Properties:</b> (ASTM-D-790)						
14 day Flexural Strength (Modulus of Rupture)	7,600 psi (52.4 MPa)			7,900 psi (54.4 MPa)		
Tangent Modulus of Elasticity in Bending	4.8 x 10 <sup>5</sup> psi (3,309 MPa)			4.7 x 10 <sup>5</sup> psi (3,240 MPa)		
<b>Shear Strength:</b> (ASTM-D-732) 14 day	5,600 psi (38.6 MPa)			5,700 psi (39.3 MPa)		
<b>Water Absorption:</b> (ASTM-D-570) 7 day %	0.6			0.75		
<b>Deflection Temperature:</b> (ASTM-D-648) 14 day (fiber stress loading = 264 psi) (1.82 MPa)	124°F (51°C)			126°F (52°C)		
<b>Bond Strength:</b> (ASTM-C-882)						
2 day (moist cure) Plastic concrete to hardened Concrete	1600 psi (11 MPa) min.			1650 psi (11.3 MPa) min.		
14 day (moist cure) Plastic concrete to hardened Concrete	2,500 psi (17.2 MPa) min.			2,600 psi (17.9 MPa) min.		
<b>Compressive Properties:</b> (ASTM-D-579)						
Compressive Strength, psi (MPa) min.	40°F(4°C)	75°F(24°C)	90°F (32°C)	40°F(4°C)	75°F(24°C)	90°F (32°C)
8 hour	--	1000 (6.9)	1500 (10.3)	--	--	300 (2.1)
16 hour	--	1500 (10.3)	4200 (28.9)	--	600 (4.1)	1000 (6.9)
1 day	800 (3.4)	5000 (34.4)	8000 (55.1)	1200 (8.3)	2000 (13.7)	2600 (17.9)
3 day	8000 (55.1)	8000 (55.1)	9200 (63.4)	2500 (17.2)	2600 (17.9)	5100 (35.1)
7 day	8500 (58.6)	10500 (72.3)	9200 (63.4)	8300(57.2)	9100(62.7)	9100 (62.7)
28 day	10,500 (72.3)	11,000 (75.8)	9200 (63.4)	10,000 (68.9)	10,500 (72.3)	9100 (62.7)
Compressive Modulus 14 day	2.0 x 10 <sup>5</sup> psi (1,379 MPa)			2.1 x 10 <sup>5</sup> psi (1,447 MPa)		

**Shelf Life:** 1 Year in original unopened container.

**Storage:** Store dry at 40°F - 95°F (4°C - 35°C). Condition material to 65°F - 75°F (18°C - 24°C) before using. Protect from inclement weather and freezing.

\*Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure

## HOW TO USE HI-MOD MULTI-PURPOSE EPOXY ADHESIVE

### Surface Preparation

**Concrete** - All surfaces must be prepared to a structurally dense surface to exposed coarse aggregate to reveal an open texture surface by shotblasting, Ultra-High Pressure Water Blasting (min. 5000 psi) or other mechanical means. Remove weak, contaminated deteriorated concrete, asphalt materials, oils, dirt, rubber, curing compounds, paint, carbonation, laitance, and other potentially detrimental materials by shotblasting, or ultra-high pressure water blasting. Surface preparation by bush hammering, grinding, and milling can create minute fractures or micro cracking in the substrate, which may require re-shotblasting to a structurally dense surface.

**Steel** - Steel surfaces should be cleaned and prepared by sandblasting to conform to SSPC-SP10 Specification with a 4 mil (0.1mm) minimum anchor profile. If flash rust appears, the surface must be re-blasted to obtain minimum anchor profile.

### Mixing

For best results, condition the components prior to mixing from 65° to 85°F (18°C to 29°C). Premix Component B to a homogenous consistency. Proportion equal parts by volume of Component A and Component B into a clean container with flat wall and bottom. Mix thoroughly for a minimum of three minutes using a low speed drill (600 rpm) and a mixing paddle (e.g. a Jiffy® and/or Plunge Mixer™). Keep the paddle below the surface material to avoid entrapment of air. Proper mixing may take 3 to 5 minutes. Thorough mixing of both components is important to obtain optimum results. Carefully scrape the sides and bottom to ensure thorough mixing. Mix until a uniform gray color is achieved. Mix only the amount of material that can be used before the pot life expires.

### APPLICATION

**For All Applications:** The user must determine working time for his project versus the requirement for fast strength development.

#### When Using 580 or 580LPL as a Bonding Agent

The freshly mixed concrete must be placed while the adhesive is tacky. If the epoxy bond coat has reached a tack free stage prior to placement of the freshly mixed concrete, a 2<sup>nd</sup> coat of the bonding epoxy must be applied immediately prior to the placement of the freshly mixed concrete. If more than 5 hours elapses, the semi or cured epoxy must be brush blasted to provide a suitable bondable surface for the 2<sup>nd</sup> coat of epoxy.

**HI-Mod Multi-Purpose Standard Set** provides fast strength development with limited working time in the container. Every 10 degree rise above 75°F will approximately reduce the working time in half. Consider for applications that require rapid strength developments, for use in cooler temperatures and/or smaller applications in warmer temperatures.

**HI-Mod Multi-Purpose Long Pot Life (LPL)** provides a slightly slower strength development with extra working time and longer contact time with large mixes.

#### Bagged Oven-Dried Silica Sand (\*WHEN AGGREGATE IS SPECIFIED IT IS TO BE BAGGED OVEN-DRIED)

Aggregate is usually available from suppliers listed in the Yellow Pages under 'Sandblasting Equipment and Supplies'. For additional information of various types of aggregate including angular hard aggregate for skid and friction resistant surfaces, contact [info@ebondepoxies.com](mailto:info@ebondepoxies.com).

FOR BEST SKID AND FRICTION RESISTANCE USE AN ANGULAR AGGREGATE WITH  
A TYPICAL GRADATION AND A MOHS HARDNESS MIN  $\geq 6$  (AS SHOWN)

Mesh/Metric	16/1.18mm	20/850 um	30/600 um	40/425 um
% PASSING	51-75	14-50	0-25	0-2

**Where Priming is Required:** Prime the surface using a stiff brush or broom. Thoroughly and vigorously work the epoxy into the surface to penetrate any dust that may remain on the surface.

#### Thin-Set Resurfacing Mortar and Grout Applications

Pre-prime the surface. Add approximately 3 ½ to 4 volumes 20 to 40 mesh aggregate to one volume of the mixed epoxy. Thoroughly blend the aggregate with the mixed epoxy components (mortar mixer) to uniform mixture. Dump the mixed mortar onto the primed epoxy surface. Hard trowel to desired thickness, usually 3 mm to 10 mm (1/8" to 3/8") according to the needs of the project. Finish off small areas with large hand trowel. For large applications use screed box and a walk-behind trowel (designed for epoxy). Allow to cure. A Terrazzo grinder can be used to remove high spots to ensure a continuous surface. Vacuum up any loose material. For small applications, seal with a topcoat of HI-Mod Multi-Purpose Adhesive Epoxy, larger applications consider a high quality floor coating.

#### Horizontal Patching

Saw cut at least ½" outside the perimeter of the area to be patched. The saw cut should be at least ¼" deeper than the patched area. Pre-prime the surface. Add approximately 1½ volumes of 20-30 mesh aggregate to one volume of mixed epoxy; blend to a homogenous mixture. Hard trowel to be flush with the top surface in maximum lifts of 1 ½" (38 mm). For extra protection apply a topcoat of HI-Mod Multi-Purpose epoxy over the repair area.

#### Non-Sag Epoxy Mortar for Vertical Overhead Bonding Patching, Applications, Etc.

(maximum thickness per lift approximately 19 mm (3/4"))

Pre-prime the surface. Add only sufficient 325 mesh silica flour (approximately 2 volumes) to 1 volume of mixed epoxy to obtain the consistency required for your project. Hard trowel into place. For extra protection apply a topcoat of HI-Mod Multi-Purpose epoxy over the repair area.

#### Grouting Base Plates

Add approximately 1 to 1½ volumes 20-40 mesh aggregate to one volume of mixed epoxy. Thoroughly blend the aggregate with the epoxy component to a homogenous mixture. Place grout under the base plate. Avoid contact with the underside of the base plate. A ¼" to 3/8" space should remain between the top of the grout and the bottom of the plate. Maximum thickness of the grout per lift is 1 ½". If multiple lifts are needed, allow for preceding layer to cool to touch before applying additional layer. The remaining ¼" to 3/8" should be filled with a neat HI-Mod Multi-Purpose Epoxy Adhesive. Pour sufficient quantity of neat epoxy to allow the level to rise slightly higher than the underside of the bearing plate.

#### High-Build Coating For Long-Term Protection (Excellent as Protective Lining for Secondary Containment Structures)

HI-Mod Multi-Purpose Epoxy is an adhesive that can be used as a coating. Provides good chemical resistance for most common chemicals. After thorough mixing apply by brush or roller. Use caution to move the brush or roller in one direction. Cross brushing of this coating will cause streaks and blotchiness. For long-term durability two applications are recommended. Variations in lighting, UV exposure and severe chemicals will change the appearance of the coating.

**Skid-Resistant Coating for Parking Decks, Loading Decks, Industrial Floors, Etc.**

For light industrial use, one-coat application may be sufficient. For heavy industrial use, recommend two applications. Spread the mixed HI-Mod Multi-Purpose Epoxy Adhesive by notched trowel or squeegee at the rate of 40 ft<sup>2</sup> per gallon (1.0 m<sup>2</sup>/L). Place the epoxy in continuous operation. For additional mixes place the second mix immediately behind the first. Broadcast hard angular aggregate (see chart on Page 3) immediately to complete saturation (normal rate @ 1.1 lb/ft.<sup>2</sup>)(5.4kg/m<sup>2</sup>) but stop to maintain a wet edge between mixes. If wet spots develop, immediately broadcast additional aggregate until a dry surface is reestablished. Allow to cure sufficiently to remove all loose aggregate. Apply the second coat at the same rate and procedure as above. A thin seal coat of HI-Mod Multi-Purpose Adhesive or other high quality floor coating may be applied as a top coating to provide easier cleaning with a small sacrifice in skid resistance.

**Waterproofing Membrane Between Asphalt Overlay and Concrete**

Spread the mixed HI-Mod Multi-Purpose Epoxy Adhesive by a notched trowel or squeegee at the rate of 80 ft<sup>2</sup> per gallon (2.0m<sup>2</sup>/L). Place the epoxy in continuous operation. Broadcast a coarse aggregate approximately 16 to 20 mesh size. Allow to cure sufficiently to remove all loose aggregate. Asphalt topping can be applied after 24 hours.

**To Anchor Bolts, Dowels, Rebar, Pins**

The hole must be free of water, all dust, dirt, debris, etc. blown out with all oil-free compressed air. For efficient transfer of stress, the hole should be no more than ¼" larger than the diameter of the rod to be embedded. Depth of the embedment is approximately 10 to 15 times the bar diameter or as specified by the engineer. Use neat epoxy and fill hole to required depth OR ( for larger bolts where the diameter of the hole is greater than 1/4 " larger than the bar) add up to approximately 1 ½ parts 20/30 sieve, salt-free kiln-dried aggregate to 1 volume of mixed E-Bond 580.

**Structural Bonding Adhesive**

Prime the surface. Place fresh concrete while adhesive is still tacky. Apply at an approximate rate of 80-100 ft<sup>2</sup> per gallon (2.0-2.5 m<sup>2</sup>/L). Place fresh concrete while HI-Mod Multi-Purpose Epoxy is still tacky. If adhesive becomes glossy and loses tackiness remove any surface contaminants and recoat with additional HI-Mod Multi-Purpose Epoxy Adhesive.

**Gravity Feeding of Cracks: (Non-Moving)**

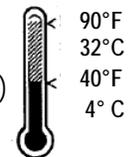
Pour Neat HI-Mod Epoxy into vee-notched crack. Continue placement until completely filled. If necessary, seal the underside of the slab prior to filling of cracks. All dynamic cracks ≥ 1/8" should be treated as joints and sealed with an appropriate joint sealer.

**COVERAGE:** 1 Gallon of E-Bond #580 HI MOD covers approximately 80 to 100 sq. ft. on a smooth surface; coverage may be less on rough surfaces. 1 gallon of E-Bond #580 mixed with 1 gallon of loose aggregate will yield approximately 360 cu. inches as bolt grouting. 1 gallon of E-bond HI MOD mixed with 3 gallons of loose aggregate will yield approximately 660 cu. inches of epoxy mortar.

**PACKAGING:** Available in 2 qt., and 2 gallon units. Available in larger units on request.

**For Best Performance**

- Precondition the components to 75°F (23°C) for 24 hours before use.
- Minimum ambient, surface, aggregate and epoxy temperatures should be 40°F (4°C) and rising at the time of application.
- For rapid strength development use multi-purpose standard.
- For long-term working time in warmer climates use multi-purpose LPL.
- Do not add solvents or water to epoxy material.
- For spray applications, consult Technical Service.



**LIMITATIONS**

- Material is a vapor barrier after cure, test on-grade substrates for moisture-vapor transmission prior to application (Ref. ASTM F-1869; ASTM D-4263).
- Applications should not be applied where dampness is caused by hydrostatic pressure or damp surfaces exposed to the sun's rays where gassing may occur.
- May be applied on damp surfaces not subject to direct sunlight however not wet or shimmering surfaces and/or concrete subject to hydrostatic pressure.
- Do not apply over wet, shimmering surface.
- For applications on exterior on-grade substrates, consult Technical Service.
- Color may alter due to lighting variations and/or UV exposure.
- Use only bagged oven-dry aggregate of required size and shape.
- Proper application is the responsibility of the user. Field visits by E-Bond personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

**CAUTION**

- **MISUSE BY DELIBERATELY INHALING OR INGESTING THE CONTENTS MAY BE HARMFUL OR FATAL.**
- **CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION.**

**CLEAN-UP:** Ventilate area. Confine spill. Collect with absorbent material. Dispose of in accordance with current, applicable local, state, and federal regulations. Uncured material can be removed with approved solvent. Cured material can only be removed mechanically.

**CAUTION - For professional use only; not for sale to or use by the general public.** E-Bond's epoxies contain alkaline amines. Strong sensitizer; MAY CAUSE SKIN SENSITIZATION or allergic response ranging from a mild wheezing to a severe asthmatic type attack. Avoid contact with skin or eyes. IN CASE OF CONTACT immediately wash skin with soap and water. Flush eyes with water and obtain medical attention. Wear protective clothing, goggles, and barrier cream on all exposed skin

- **KEEP CONTAINER TIGHTLY CLOSED**
- **NOT FOR INTERNAL CONSUMPTION**
- **NOT FOR SALE TO OR USE BY THE GENERAL PUBLIC**
- **KEEP OUT OF REACH OF CHILDREN**
- **FOR PROFESSIONAL USE ONLY**

**LIMITED WARRANTY NOTICE:** E-BOND EPOXIES, INC warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within the shelf life of one (1) year from manufacture date. Satisfactory results depend not only on quality products but also upon many factors beyond our control. The purchaser must examine the product when received and promptly notify E-BOND EPOXIES, INC in writing of any nonconformity before the product is used and no later than 30 days after such non-conformity is first discovered. If E-BOND, in its sole discretion, determines that the product breached the above warranty, it will, in its sole discretion, replace the non-conforming product, refund the purchase price or issue a credit in the amount of the purchase price. This is the sole and exclusive remedy for breach of this warranty. The information in this data sheet supersedes all other sales information received by the customer during the sales process. **THE FOREGOING WARRANTY SHALL BE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, TRADE OR OTHERWISE.**

E-BOND shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for loss of sales, revenues or profits; cost of capital or funds; business interruption or cost of downtime, loss of use, damage to or loss of use of other property (real or personal); failure to realize expected savings; frustration of economic or business expectations; claims by third parties (other than for bodily injury), or economic losses of any kind; or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform, its obligations under any contract for sale of product, even if E-BOND could foresee or has been advised of the possibility of such damages. The Parties expressly agree that these limitations on damages are allocations of risk constituting, in part, the consideration for this contract, and also that such limitations shall survive the determination of any court of competent jurisdiction that any remedy provided in these terms or available at law fails of its essential purpose.



**E-BOND EPOXIES, INC.**  
 501 N.E. 33<sup>RD</sup> ST  
 P.O. BOX 23069  
 FT. LAUDERDALE, FL 33307  
 TOLL FREE : (877) 265-0011  
 PHONE: (954) 566-6555  
 FAX: (954) 566-6663  
 E-Mail: [info@ebondepoxies.com](mailto:info@ebondepoxies.com)  
[www.ebondepoxies.com](http://www.ebondepoxies.com)  
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