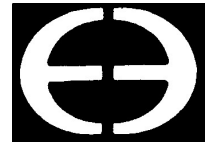


# 590

# E-BOND 590 HI-MOD GEL

FORMULATED AND LABELED FOR PROFESSIONAL USE ONLY  
NOT FOR SALE TO OR USE BY THE GENERAL PUBLIC



E-BOND 590 HI-MOD GEL EPOXY

PRODUCT DATA

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## DESCRIPTION

E-BOND 590 HI-MOD GEL is a 100% solids, solvent-free, two-component **MOISTURE INSENSITIVE** epoxy structural adhesive system. It has a unique **HI-MODULUS OF ELASTICITY**. When mixed with salt-free kiln-dried silica aggregate, 590 will produce a sag-resistant mortar for both vertical and overhead patching of interior surfaces. E-Bond 590's gel-like consistency is an excellent structural adhesive for bonding of mating or non-mating surfaces. 590 Gel is recommended to grout anchor bolts, to seal cracks, and to set injection ports prior to injection grouting.

**E-BOND 590 LOW-MOD conforms to ASTM-C-881, Type I AND IV, Grade 3, Class B and C, AASHTO-M235-91**

## FEATURES:

- Easy mixing ratio of 1 to 1 for the two components
- Gel-like consistency
- Insensitive to moisture before, during and after cure
- Non-abrasive formula permits application with automated equipment
- Provides excellent adhesion to most structural materials
- Fast setting; provides high early strength within 24 hours
- Low Temperature cures as low as 40°F(4°C)
- Zero VOC - Fully reactive, No low boiling constituents

## For Best Performance

- Precondition the components to 70°F (23°C) to 80°F (27°C) for 24 hours before use.
- Minimum ambient, surface, aggregate and epoxy temperatures should be 50°F (10°C) and rising at the time of application.
- Store at 60°F to 90°F (16°C to 32°C). Protect from freezing and inclement weather
- Minimum age of concrete must be 21-28 days prior to application of mortar or sealer on slabs.
- Maximum glue line 1/8 of an inch when doweling. Maximum epoxy mortar thickness is 1 1/2 per lift.
- Epoxy mortar is for interior use only.
- Do not add solvents or water to epoxy material.
- Do not alter or change the recommended proportions when blending the components.
- Shelf Life – 1 Year from date of manufacture stored in closed original

## PHYSICAL PROPERTIES Material & curing conditions@ 75°F and 50% RH

<b>Type:</b>	Moisture Insensitive & Low Temperature Cure High Modulus, Gel Epoxy		
<b>Color:</b>	Part A Resin	White	
Not an aesthetic product. Color may alter due to variations in lighting and/or UV exposure	Part B Hardener	Black	
	Admix	Light Gray	
<b>Mixing Ratio:</b>	Component A/B	1:1 by volume	
<b>Viscosity:</b>	Ad Mix	Gel	
<b>Pot Life:</b>	ASTM C 881 Modified	Approx. 30 minutes @ 75°F (24°C)	
<b>Tack-Free Time:</b> (Thin Film)		40°F (4°C)**	75°F (24°C)**
** Ambient Temperatures		14 - 16 hours	2 - 4 hours
			90°F (32°C)**
			1 - 1 1/2 hours
<b>NEAT BINDER</b>			
<b>Tensile Properties:</b>			
Bond Strength, PSI (Mpa)	ASTM D-882		
2 Days (moist cure) Hardened concrete to hardened concrete or steel		1800 min (12)	
14 Days (moist cure) Plastic concrete to hardened concrete or steel		1600 min (11)	
Water Absorption 24 Hrs %	ASTM D-570	.5% maximum	
Heat Deflection Temperature 7 days	ASTM-D-648	124°F (51°C)	
Linear Coeff. of Shrinkage on Cure	ASTM-D-2566	.033 maximum	
Compressive Strength, PSI (Mpa)		40°F (4°C)**	75°F (24°C)**
ASTM C-695	24 Hrs.	-----	5800 (40)
	3 days	5000 (34)	10,000 (69)
	7 days	9000 (62)	10,000 (72)
Compressive Modulus 14 Days PSI		1.2 x 10 <sup>5</sup>	
Tensile Properties ASTM-D-638	Tensile Strength PSI (Mpa)	9600 (66)	
Cure 7 Days @ 70°F,	Elongation at Break	.85%	
Post Cure 48 Hrs @ 140°F	Modulus of Elasticity PSI (Mpa)	4.4 x 10 <sup>5</sup> (3034)	
Flexural Properties 14 Days	ASTM-D-790		
	Flexural Strength PSI(Mpa)	5800 (40)	
	Tangent Modulus of Elasticity PSI (Mpa)	7.2 x 10 <sup>5</sup> (4964)	

## **SURFACE PREPARATION:**

All surfaces must be structurally sound, clean, and free of dirt, dust, oil, grease, or any contaminant that would adversely affect the bond. Surfaces may be dry or damp, but free of standing water.

On new concrete do not use a curing compound. If curing compounds have been used they must be removed. Sandblast or other approved mechanical methods are recommended.

**STEEL:** Sandblast to white metal finish.

**OLD CONCRETE:** All loose particles or soft, weak sections must be removed. Asphaltic or oil contaminants should be removed with detergents or other cleaning materials. Surfaces should be thoroughly flushed with plenty of clean water. Surfaces then should be treated with 15% to 20% solution of muriatic acid. Mix the acid with water, approximately 1 part of acid to 3 to 5 parts of water, as required. *Follow Safety Precautions when using acids.* Pour on the surface in an even manner and thoroughly scrub until bubbling ceases. Thoroughly rinse with plenty of clean water. If chemical means or cleaning does not properly prepare the surface, then other means such as sandblasting, mechanical scarification, and vacuuming should be utilized.

## **MIXING:**

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.

The importance of thorough mixing/blending cannot be overemphasized. Stir and blend thoroughly. Scrape bottom and sides to make sure both components are blended and mated, usually 2½ to 3 minutes. If you are mixing correctly, bubbles will be whipped into the mixture. Do not be concerned; this is a sign that you are mixing well. A uniform gray product will result. Streaks in the product indicate incorrect mixing. Improper mixing can result in soft or sticky spots.

It is recommended, to eliminate problems of improper mixing, that you use two mixing containers. Mix thoroughly in one container. After you feel it is thoroughly mixed, scrape all the material from one container to the second container. After material has been placed in the second container, thoroughly mix for an additional 1 to 1½ minutes.

With this double type of mixing, any material that might not have been thoroughly mixed from the sides or the bottom of the first container will be easily placed in the center of the mix in the second container and thus will receive thorough mixing at that time. Mix only that quantity that can be used within its working time.

## **Important Notice: Precautions when using tube kits and/or automatic metering, mixing and transfer equipment.**

Prior to using tube kits and automatic metering, mixing and transfer equipment it is mandatory to ensure accurate metering of each component and thorough mixing. Purge the components through the static mixing nozzle until all material dispensed is uniform in color. After each "Stop and Start" operation the material should be purged from the static mixer to assure that the mix ratio is correct.

Pigmented components: Contrasting component colors usually "black and white" when unmixed. Proper mixing is achieved only when the material discharged from the static mixing nozzle is gray in color and uniform. Purging should continue until the proper mixed color is observed at the static mixing nozzle.

## **APPLICATION:**

**For a Structural Adhesive** - Apply the neat mixed E-BOND HI-MOD GEL to mating or non-mating prepared substrates. Thoroughly work into the substrate for positive adhesion. Secure the bonded unit firmly into place until the adhesive has cured. Glue line should not exceed ¼ of an inch.

**For Interior Applications** - To prepare an epoxy mortar add from 1 to 1½ parts by loose volume of 20/30 sieve, salt-free, kiln dried aggregate to 1 volume of the mixed HI-MOD GEL. Mix until uniform in consistency. Amount added may be varied depending on desired consistency. Place the prepared mortar in the void, working the material into the prepared substrate, filling cavities. Strike off level. Do not apply epoxy mortar at thickness greater than 1½ inches per lift.

**To 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.

**To Anchor Bolts, Dowels, and Pins** - E-BOND 590 may be used neat, or with larger bolts add approximately 1 to 1½ parts of 20/30 sieve, salt-free, kiln-dried aggregate to 1 volume of mixed E-BOND 590.

This product is recommended to anchor bolts in vertical and horizontal applications.

Due to the non-sag consistency, it is important that a long nozzle be used to force the epoxy to the bottom of the bolt hole to avoid air entrapment. The angular space around the bolt should not exceed ¼ inch. Depth of embedment is normally 15 times the bolt diameter.

**Do Not Thin E-BOND 590 HI-MOD GEL** -- Solvents will prevent proper cure.

**Note** - For bonding fresh plastic Portland - cement to hardened concrete, use E-BOND 580 HI-MOD.

**COVERAGE:** 1 Gallon of E-Bond 590 HI-MOD GEL yields 231 cubic inches of epoxy adhesive. When mixed with 1 gallon of dry loose aggregate the yield will be approximately 350 cubic inches of epoxy mortar.

**PACKAGING:** Available in 2 gallon units, 10 gallon units and 600 ml ratio tube kits (36 in<sup>3</sup>). Available in larger units on request.

**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.

**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.

#### **CLEAN UP:**

Clean all equipment and tools prior to initial set up of the epoxy system. A lacquer solvent or xylene can be used for this purpose. (Lacquer solvents and xylene are highly flammable, use caution as required by the manufacturer of these solvents.) Mortar mixers and tools often can be cleaned up with hot water and soap prior to the epoxy becoming tacky.



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