TotalBoat FlexEpox -- Tech Data Sheet

Description:

Substrates: Fiberglass, metals, glass, masonry, wood (including oily or hard woods), and most plastics.

Product Advantages: TotalBoat FlexEpox epoxy is an adhesive engineered for a superior grip to metals, plastics, glass, masonry, fiberglass, and wet and difficult-to-bond hardwoods. It has an easy to use 1:1 mix ratio by volume and provides a relatively long open working time. Structural bonds made with TotalBoat FlexEpox are resilient and can withstand the stresses of expansion, contraction, shock, and vibration.

Surface Prep:

Fiberglass: Surface must be free of dirt, dust, oil, grease, or any other contaminants. Sand the surface with 60 to 80-grit sandpaper, then remove any sanding residue. Wipe the surface with denatured alcohol or acetone to remove any remaining surface contamination.

Steel, Galvanized Steel, Lead, Copper, Bronze: Surface must be free of dirt, dust, oil, grease, or any other contaminants. Sand the surface with 60 to 80-grit sandpaper or sandblast to expose shiny metal and remove any sanding residue. Wipe surface clean with denatured alcohol or acetone and apply a very thin layer of TotalBoat FlexEpox immediately to the substrate after solvent has evaporated. For best adhesion, wire brush or use sandpaper and abrade the surface where you just applied the thin layer of FlexEpox to avoid bond issues due to instant metal oxidation.

Aluminum: Surface must be free of dirt, dust, oil, grease, or any other contaminants. Sand the surface with 60 to 80-grit sandpaper and remove any sanding residue. Use TotalBoat Aluminum Boat Etch Wash as directed for superior adhesion. Dry the surface completely after using Aluminum Boat Etch Wash and immediately apply FlexEpox before the metal can begin to oxidize.

Plastics: Surface must be free of dirt, dust, oil, grease, or any other contaminants. Sand the surface with 60 to 80-grit sandpaper to maximize surface adhesion, then remove any sanding residue. The surface must then be flame treated by quickly waving a propane torch over the area to be epoxied. The flame should come close to the surface, but keep moving so as not to burn or melt the surface. The flame treating process should not visually change the surface. Flame treating is recommended for ABS and PVC, and is mandatory for adhesion on HDPE and LDPE substrates. Polycarbonate should only be sanded, do not flame treat.

Wood: Surface must be free of dirt, dust, oil, grease, or any other contaminants. Sand the surface with 60 to 80-grit sandpaper across the grain to maximize surface adhesion, then remove any sanding residue. Wipe the surface with Denatured Alcohol or Acetone to remove any surface oils. Solvent wipe is mandatory on oily type wood for proper adhesion.

Masonry, Glass: Surface must be free of dirt, dust, oil, grease, or any other contaminants. Tape or mask as desired. If possible, sand or rough up the area to be bonded or adhered. Clean with isopropyl alcohol and allow to dry before application.

Application:

Mixing:

1. Mix ratio 1:1 by volume (or 1.2:1 by weight). Mix for 1-2 minutes.
2. Mix in any thickening agents or fillers, if desired.
3. The cure reaction of TotalBoat FlexEpox epoxy is an exothermic (heat-producing) reaction. The peak exotherm will vary according to ambient temperature.
4. Porous surfaces should be precoated with unthickened resin/hardener.
5. Assemble and clamp parts in position before the adhesive begins to gel. Keep parts clamped until the adhesive is cured, about 3-4 hours at 72°F. Cure time is faster at warmer temperatures and slower at cooler temperatures.

APPLICATION DATA:	
Hardener Viscosity:	22,800 cP @ 72°F
Resin Viscosity:	9,500 cP @ 72°F
Initial Mixed Viscosity:	14,100 cP @ 72°F
Mixed Ratio By Volume:	1:1 (Resin:Hardener)
Mix Ratio By Weight:	1.2:1 (Resin:Hardener)
Working Time:	75 minutes @ 72°F (Thin Film)
Gel Time:	40 minutes @ 72°F (100g mass)
Initial Cure Time:	3-4 Hours @ 72°F
Workable Cure Time:	7-10 Hours @ 72°F (24 hour minimum for high loads)
Application Temperature:	40-125°F

PHYSICAL PROPERTIES:	
Color:	Amber
Tensile Strength:	5,610 psi
Tensile Elongation:	25.10%
Tensile Modulus:	178,000 psi
HDT, Room Temperature Cure:	134°F
HDT, Post Cure:	189°F
Compressive Strength:	6,800 psi
Flexural Strength:	9,050 psi
Flexural Modulus:	193,000 psi
Density (Cured):	.040 lbs/in^3 (1.11 g/cm^3)
Volumetric Yield:	24.9 in^3/lb
Volumetric Shrinkage:	3.50%
Hardness:	77 (Shore D)

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