MANUAL

MR.BOAT epoxy

Epoxy Multi Purpose

For structural applications and protective coatings

PREPARATION

Make sure the substrate is dry, clean and degreased. Epoxy adheres poorly to a dirty or greasy surface. Always clean and degrease the surface first, for example with acetone, water and ammonia or Mr.Boat Bio degreaser. Do not use turpentine, white spirit or other cleaning agents. Sand the surface with approximately P120. Always process the epoxy at room temperature. If cold, heat the container to room temperature, for example in warm water, so that the epoxy becomes somewhat thinner and easier to mix. The epoxy mixture corrodes practically nothing, if in doubt (e.g. freshly varnished tabletop) please do a test first.

SAFETY

Epoxy can cause an allergic reaction. Avoid contact between uncured epoxy and bare skin. Wear nitrile gloves for this purpose. Respiratory protection is not necessary with these epoxy resins when the area is adequately ventilated. When sanding, use an appropriate dust mask. Epoxy should be stored in a safe manner so that, especially for children, it does not come in contact with bare skin or can be swallowed. Before use, read the safety labels on the product. The safety data sheet can be requested at info@mrboat.com or found on the product page at mrboat.com.

MIXING

You always use the resin and hardener together, never separately. Do not try to shorten the curing time by adding more hardener. That does not work; quite the contrary: too much hardener causes that the epoxy does not cure at all!

Make sure that resin and hardener are mixed together very well before use, to avoid sticky spots in the end result. The mixing creates air bubbles, especially if the epoxy is cold. After mixing, let the epoxy rest for 2-5 minutes so that the air bubbles disappear and the mixture becomes clear. Mixing epoxy can be done by weight or by volume. The mixing ratio of both ways is indicated on the hardener.

ADDING FILLERS TO THE EPOXY

You can add fillers after mixing the epoxy resin and hardener. Add filler until you achieve the desired thickness. For epoxy adhesive, aim for a thickness similar to honey, and for an epoxy putty that holds its shape, target a thickness similar to wax.

ADDING COLORANTS (PIGMENTS) TO EPOXY

Add approximately 1-3% pigment paste for casting. When applying with a brush or roller, add 5-10% pigment paste and apply 2-3 layers. If you add less, the color may remain somewhat translucent. Since the pigment paste is based on epoxy resin, you can add it to the resin before mixing. This ensures that the different portions you've prepared have the same color. Dosing above 10% negatively affects the curing of the final product.

COATING WITH EPOXY

If you want to protect wood, polyester, concrete, (foam) insulation, metal and aluminum, apply 3 layers of approximately 200-250 grams per square meter per layer. Coating is simple: apply epoxy in the same way as painting, using a roller or brush. Use disposable brushes and/or special epoxy rollers. Do not use foam rollers as they can get air into the coating. You can apply multiple layers in two ways.By applying a second layer when the first layer is still curing (it is no longer tacky, but you can still see a fingerprint). After curing: if the first layer has already cured, lightly sand it (grit 80-100) and degrease it before applying the second layer.

TIP | **Instead of one thick coat, apply several thin layers of epoxy to prevent dripping of the material.**

CASTING WITH EPOXY

This epoxy is preferably applied with a roller or brush. Pouring in thin layers up to a few millimeters is possible, but avoid casting thick layers to prevent excessive heat buildup. Do not mix more than 750 grams per container.

EPOXY AS AN ADHESIVE

When bonding porous substrates such as wood, we recommend applying 1 coat of epoxy with brush or roller, before bonding the material with a mixture with filler. Then, add filler to the epoxy (such as aerosil, stewathix, or cotton) until you achieve a paste with the thickness of honey. Apply light pressure to the parts, ensuring that there is a good amount of epoxy adhesive between them.

CREATING AN EPOXY FILLET

For a strong bond, create an epoxy fillet. After applying the fillet, scrape away any remaining material with a tongue depressor for a rounded finish. If you need to work on large pieces quickly, you can use an empty caulk cartridge or pastry bag to apply the epoxy adhesive. First, coat the substrate with unthickened epoxy before applying the fillet. You can also reinforce the fillet with fiberglass tape.

EPOXY PUTTY

You can easily make epoxy putty yourself by adding microballoons to the mixed epoxy until you achieve the desired viscosity. Microballoons are hollow glass spheres. When combined with epoxy, they create a lightweight putty that is incredibly strong, waterproof, and easily sandable. Epoxy putty does not shrink when curing.

LAMINATING WITH FIBERGLASS

When laminating, you combine (glass) fabric with epoxy. You can use this technique to reinforce a structure (such as a boat hull) or create a part in a mold. First, ensure that the fiberglass cloth is cut to size. Then, coat the substrate with epoxy (after sanding and degreasing it). Position the piece of fiberglass cloth on the substrate. You will notice that the cloth absorbs the epoxy,

becoming transparent. Then, tamp the fiberglass cloth with a brush in a perpendicular motion to prevent the cloth from shifting.

Note: do not use more epoxy than necessary to wet the fiberglass cloth. The cloth should not float in the epoxy, as excess epoxy can weaken the laminate. Therefore, once the fiberglass cloth is wet, remove the excess epoxy with a squeegee (plastic spatula). You can also use a laminating roller to press out any air bubbles from the laminate.
You can apply multiple layers, when still tacky and after curing.The exact consumption of resin per fabric can be found on the product page of the fiberglass cloth.

Curing per hardener

- **Multi Purpose FAST**
Usable from **5˚C**
Processing time approx. **25 Min.** | Tack-free **6-10 hours**
Final strength **12-18 hours** at 20˚C.

- **Multi Purpose SLOW**
Usable from **10˚C**
Processing time approx. **45 Min.** | Tack-free **8-12 hours**
Final strength **20 to 32 hours** at 20˚C.

PROCESSING TIME AND CURING

The processing times apply at 20˚C. Below 20˚C it will take longer for the epoxy to cure. The curing of thick layers is faster than thin layers. After the processing time, the epoxy begins to‚gel': it becomes a cheese-like substance. You can not continue to work with the epoxy in the mixing cup at this point. If it has been applied to an object, you can apply a new layer of epoxy or remove excess resin and fiberglass without any pre-treatment. However, it will still take several hours for the epoxy to fully cure.

FINISHING AND UV PROTECTION

If desired, you can coat epoxy with a 1- or 2-component paint system in color or transparent. This prevents the epoxy from yellowing under the influence of UV light.

For most paint systems, you do not need a primer, but always follow the manufacturer's advice. If the epoxy is applied transparently, it is recommended to use a UV blocker to prevent yellowing.
For extra protection, you can also apply a transparent UV-resistant (2-component) varnish afterward. These enhance the surface's resistance to scratches and heat. Before applying varnish or paint, we recommend sanding the epoxy with a grain size of P240-320.

CLEANING

Preferably use disposable brushes and rollers. Uncured epoxy can be removed with vinegar. Tools can be cleaned with acetone. Removing cured epoxy is slightly more challenging. Heat the epoxy with a hairdryer up to a maximum of 90˚C until it softens again, and then remove as much epoxy as possible with a paint scraper or putty knife. Remove the rest with sandpaper. Ensure adequate ventilation when heating epoxy.

STORAGE

Store in a cool and dark place. The epoxy can be used for at least 1 year. After this period, the epoxy can still be used but its clarity may diminish.

CHEMICAL WASTE

Dispose uncured epoxy resin and hardener as chemical waste.