

Bote Cote Instructions

Timber is an excellent boat building material. On a strength and stiffness-to-weight basis, it outperforms other common boat building materials. It is ideal for the amateur to work, being readily available, and at reasonable cost.

Timber has suffered disadvantages due to its swelling and shrinking as humidity changes, and also due to its liability to rot. Bote-Cote epoxy overcomes these problems, simplifies building, and allows anyone with the most basic skills to create beautiful, seaworthy craft.

Bote-Cote is an epoxy system specially formulated to match the physical properties of timber. As a coating it is highly resistant to water, and completely encapsulates the timber to provide an impervious moisture barrier. It adheres tenaciously to most surfaces, so is used as a strong structural adhesive to permanently bond all parts of the boat, replacing nails and screws.

Finally, Bote-Cote is made to an easy to use 2:1 ratio, and is formulated to be one of the safest epoxy products.

WORKING SAFELY

Epoxy chemicals may act as irritants to sensitised people, resulting in skin rashes and breathing congestion. Avoid skin contact. Apply barrier cream, wear disposable rubber gloves, and full covering clothing.

To remove epoxy from your skin, NEVER USE SOLVENTS. Wash with a waterless hand cleaner or soap and water.

Protect your eyes. Always wear safety spectacles when using epoxies, paints, or any tools.

Avoid breathing sanding dust by using a dust mask when sanding. Incompletely cured epoxy, as well as many timbers, can be hazardous. Avoid build up of vapours, keep the work area well ventilated.

MEASURING AND MIXING

The ratio of resin to hardener is 2:1. Do not vary from this ratio. More hardener does not speed the cure, it stops the epoxy from setting properly to its full properties.

Three ways to measure Bote-Cote properly are:

- (i) Use finger pumps, two squirts to one.
- (ii) Pour resin into a measuring cup, then pour half as much hardener in on top of it.

- (iii) Use a cylindrical can, and a stick pre-marked for resin and hardener at 2 and 3 units. Pour in resin, then hardener, to the appropriate marks.

Never use Coke cans or ice cream containers for measuring. Never pre-measure each component in separate containers then pour them into a mixing vessel, the ratio will be wrong.

Viscous liquids must be mixed carefully, not just stirred. Always scrape the sides and bottom of the container while stirring the contents, to ensure there is no viscous material left on the sides. This could leave soft sticky patches on the work.

WORKING LIFE

The pot life of Bote-Cote is affected by the temperature, and the quantity mixed. Higher temperatures and larger mixes both accelerate the setting reaction.

Three different hardeners are available to cope with different reactivity needs, particularly climatic conditions: Fast, Standard, and Tropical. Each is designed to offer a pot life around 45 minutes at the relevant temperature.

TIMBER COATING

All timber should be coated with at least two coats of Bote-Cote. For maximum water resistance, e.g. below the water line, apply three coats.

To the first coat add 15 – 20% of TPRDA, a low viscosity additive, which helps carry the epoxy deeply into the timber surface to seal and strengthen it. Sand the surface lightly after this coat has cured.

Subsequent coats of Bote-Cote are applied full strength, preferably 'wet on tacky'. If the surface has cured hard, always sand it to provide a good key for the next coat.

GLUEING

Bote-Cote can be thickened with powder fillers to convert it into a structural gap filling glue, suitable for high strength joints and installing fittings.

Use High Strength Filler where outstanding compressive strength is needed. For most applications, Glue Filler is appropriate. Sanding Filler or Micro balloons are not used for structural gluing, as they lack sufficient strength.

Pre-coat all uncoated timber with Bote-Cote to ensure the porosity is sealed. End grain requires special attention to ensure that it is filled with epoxy before gluing.

Blend filler into mixed epoxy to the required thickness. For larger areas this will be quite thin ('tomato sauce'), for other jobs the mix may be thicker ('mayonnaise'). Apply the glue to both surfaces and hold firmly together until the glue sets. Do not clamp tightly, an epoxy joint relies on some epoxy being retained within the joint.

FILLETING

A fillet is a radiused reinforcement at an internal corner which makes it much stronger than a sharp corner.

First brush a thin layer of Bote-Cote onto the surfaces, then thicken the Bote-Cote to a putty consistency with Glue Filler and press it along the corner with the mixing stick. Cove it with a round ended filleting blade, made from scrap plywood, plastic, or metal, by running the blade along the fillet until it comes down to a fairly smooth uniform shape. Press down hard against the adjacent timber to leave a clean line each side of the fillet, then remove excess beyond that line with a chisel.

Allow the fillet to start to cure, then polish it by rubbing with your fingers dipped in solvent or detergent and water (always wear gloves).

LAMINATING

Fibreglass, Kevlar, and Carbon fabrics can all be laminated using Bote-Cote.

Ensure the timber is smooth, clean, and dust free, then apply a first coat of Bote-Cote (with added TPRDA) all over it. Immediately spread the fabric over this tacky surface and smooth it to remove all wrinkles, working from the centre to the edges. Apply more Bote-Cote with a roller or brush to the entire fabric, then go back and work it to eliminate all air bubbles. The final laminate should be clear and have a fabric texture. Allow this to partly set, then apply further coats of Bote-Cote to fill the weave of the fabric.

FAIRING

As a final coat, apply a fairing epoxy mixture to the surface, made from Easy Sanding filler mixed into Bote-Cote to any desired consistency. This can be sanded to a very smooth even surface ready for finish painting.