



## GRP CRAFT HAND APPLICATION AND MAINTENANCE INSTRUCTIONS

**COPPERPLUS** provides long term protection against fouling and can be applied to vessels constructed of all materials except aluminium. In order to obtain the maximum efficiency and life from the system it is essential to thoroughly prepare the surface before application. We recommend that all of the old antifouling should be removed because its adhesion to the hull is often inadequate.

**PREPARATION OF GRP HULLS** All old antifouling must be removed and the hull thoroughly cleaned before abrading the surface to provide a key. De-grease if necessary. The prepared surface must be smooth without 'orange peel' or other defects that may spoil the finished job. At this stage examine the hull for any signs of osmosis, which should first be treated using SAFEGUARD epoxy osmosis repair system. Information regarding osmosis prevention and repair materials can be found in our Osmosis Guide. Unless existing coatings on iron or steel fittings are in good condition they should preferably be shot-blasted or thoroughly cleaned by hand and given 3 coats of ARMOURGUARD anti-corrosion coating. Please refer to the ARMOURGUARD literature for full details of this product.

**PRIMING** Bare GRP and old protective coatings that are in good condition should be given one coat of SAFEGUARD PS. It is a two pack low viscosity epoxy primer-sealer which must be over-coated within 24 hours. It has a pot life of ½ to 1½, hours depending on the ambient temperature. Mix only the amount that can be used in this time. If a smaller amount than is in the tin is required, weight out resin and hardener in the proportions shown on the label, into a separate container and mix thoroughly. Proportioning by volume or by eye is not sufficiently accurate and failure may occur. In cold weather a small amount of SYNTAC solvent may be required to ease application.

Check the finished surface of the SAFEGUARD and remove any pimples caused by dirt with sandpaper. This is important because the COPPERPLUS on high spots will be worn away during burnishing and the coating damaged. If the SAFEGUARD PS has been allowed to cure for more than the time shown on the over-coating table, abrade with wet & dry paper to provide a key and re-apply.



First add all of the hardener to the resin and stir.

**MIXING** Small packs of COPPERPLUS are easy to mix using a flat stick about 20 mm wide, but larger packs are easier to mix with a small mixer used in a cordless drill. Add all of the hardener to the resin and stir thoroughly. Add all of the copper powder slowly while stirring, continue stirring until a smooth lump free paint with a creamy consistency is obtained. A small amount of SYNTAC solvent may be required in cold weather to enable the COPPERPLUS to flow to a smooth finish. Excessive amounts of solvent should not be used because it will cause the copper powder to settle out.



Then add all of the copper and continue mixing until smooth.

**COPPERPLUS** has a pot life of 8 to 10 hours, but if left unstirred for any length of time it will require re-mixing to re-disperse the copper powder. Unused COPPERPLUS can be stored in a refrigerator overnight for use the next day.

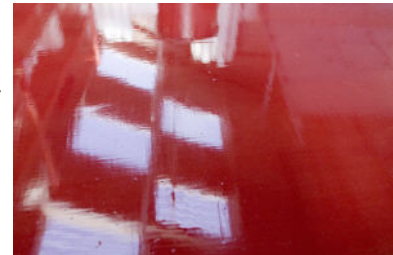
## REACTIVE RESINS

**ROLLER APPLICATION** We recommend the use of 6in or 7in (150 mm or 175 mm) short pile simulated mohair rollers of 1½” or 1¾” diameter. Two coats of COPPERPLUS should be applied to ensure even coverage. Ensure that the sufficient solvent has been added to provide a smooth finish. The use of too little solvent will produce a rough textured finish. **A smooth finish is essential to ensure that the coating is self-cleaning.**



Copperplus is easy to apply with a short pile roller.

**BRUSH APPLICATION** A very smooth finish can be obtained with a good quality 4” or 5” (100 - 150 mm) natural bristle paint brush. For craft up to 30’ in length it can be worthwhile as application does not take much longer than by using a roller. Stir the COPPERPLUS regularly to ensure the copper powder is kept in suspension.



A very smooth finish can be achieved with a good quality brush.

**COMMISSIONING** To achieve best results the epoxy film which forms over the copper during application must be lightly burnished before the vessel is launched. This is easily done using coarse Scotchbright abrasive pads while the coating is still soft. (12 to 36 hours after application, depending on temperature. Pay particular attention to the area just below the waterline.

**MAINTENANCE** In order to maintain efficient antifouling action COPPERPLUS must be occasionally cleaned with high pressure water or scouring pads to remove corrosion products. The frequency of cleaning will depend on local conditions, the speed of the vessel and its amount of use. In the UK high pressure water washing once a year is all that is required to clean the surface. In high fouling areas light abrading with scouring pads before launching will improve performance.

**COPPERPLUS** will provide effective protection against fouling until it has corroded or been worn away. The corrosion rate of COPPERPLUS is very low at between 3 and 10 microns per year. A major loss of coating thickness can be caused by over enthusiastic cleaning, so be careful only to remove the film on the COPPERPLUS and not the COPPERPLUS itself.

**HEALTH & SAFETY** The resin component is an irritant and is flammable. The hardener component is corrosive and will cause blisters if allowed to remain in contact with skin for any length of time. Wear rubber gloves and goggles and apply in a well ventilated area. Do not breath copper dust. Do not smoke and keep product away from naked flames. Keep out of reach of children.

OVER-COATING TIMES						
TEMPERATURE °C	5 TO 15		15 to 25		25 +	
HARDENER	SYNTAC 1045		SYNTAC 1043		SYNTAC 1045	
	Min	Max	Min	Max	Min	Max
<b>ARMOURGUARD</b>	18 hours	5 days	14 hours	3 days	8 hours	2 days
<b>SAFEGUARD PS PRIMER SEALER</b>	8 hours	36 hours	6 hours	24 hours	6 hours	24 hours
<b>COPPERPLUS</b>	6 hours	5 days	3 hours	3 days	2 hours	2 days
CAUTION! Hot sun can increase surface temperatures and drastically reduce the over-coating times shown above.						