

## POND KITS

### PERSONAL PROTECTION

Please familiarise yourself with the Material Safety Data Sheets before starting. Personal protection should be worn at all times, safety goggles, gloves, apron and overalls. If you have any queries please contact us on 028 41753738.

### MATERIALS

GRP Kits are supplied with the following materials

1. Fibreglass Matt
2. Fibreglass Tissue
3. Polyester Resin
4. G4 Sealer - **Optional**
5. Topcoat
6. Catalyst / Hardener
7. Tools

### OVERVIEW

Ponds are generally constructed with a reinforced concrete base and with reinforced concrete block walls, and is rendered / plastered to provide a flat surface for the fibreglass to be laminated onto. The vertical and horizontal corners in the pond require a slight radius so that the fibreglass sits properly, and the surfaces should be free from sharp points as this will make it more difficult to lay the fibreglass matting onto the walls and base.

When all the structural work is completed, the render must be left to dry out completely.

It is important to plan your work before you start. If you are working on a deep pond, leave a dry section for access in and out of the pond, finish this area last.

Lay-up outer walls first coming down approximately 100mm onto floor space, when walls are cured finish with the floor.

## G4 SEALER

We strongly recommend the use of G4 Sealer. The G4 both seals the cement render and provides a bonding primer for the polyester resin.

Its use as a sealer is to prevent any residual moisture and alkali present in the cement render from affecting the polyester resin. Polyester resins are not adhesives, and whilst they do bond to many surfaces G4 increases the adhesion.

However whilst applying G4 is by far the better system, many ponds have been constructed successfully without, simply using catalysed resin.

G4 is painted on at, a coverage of 250g per m<sup>2</sup>. Once the G4 sealer starts to cure, within 30-60 minutes of applying (tacky to touch), the layers of 450g mat can be applied. It is best to cut into manageable sizes, approximately meter square pieces. This should be done before you start applying the resin, don't mix more resin than you need.

## WORKING AREA

Laminating should be done at warm temperatures ideally around 20°C, as this ensures the resin will cure correctly. Resin will not cure adequately below 15°C, and at temperatures above 30°C, it will cure too quickly.

## MIXING CATALYST

All resins / topcoats require the addition of catalyst (hardener) to initiate the curing process. Use a safety dispenser to add 20ml of catalyst per kilo of resin. Stir thoroughly. The hardening process begins immediately, so only add catalyst to a working quantity.

Once catalysed the resin gradually cures, taking on a jelly-like consistency in about 10-20 minutes before becoming hard in about 30-40 minutes at room temperature (about 20°C). The curing process generates heat within the resin. Too much catalyst or large volumes of resin increases this heat, so a thick laminate or a large casting should preferably be built up in stages. Over catalysing the resin can cause the resin to overheat and sometimes cause a fire.

Thorough mixing of catalyst into resins and topcoat is very important. Also the correct quantities should be used for the best results. Dispensers are advised for accuracy. 1% catalyst is considered a slow mix, 2% is ideal, 3% is a fast mix.

The higher the temperature the faster the cure. As a general guide 2% addition at 20°C gives 15-20 minutes pot life.

## **APPLYING THE LAMINATE**

- Mix a maximum of 2kg of resin at a time, enough for 2m<sup>2</sup> of fiberglass mat.
- Paint on a coat of catalyzed resin to the surface and then lay on the first section of fibreglass, apply more resin to “wet out” (saturate) the fibreglass. Then apply the next layer, which should overlap the previous layer by approximately 75mm and again apply more resin. Stagger the joints so that they do not overlap. Once the fibreglass has been ‘wetted out’ it is necessary to consolidate the two layers of fibreglass and this is done using a metal roller. The roller when used forces the two layers of fibreglass together and removes any trapped air, this appears in a laminate as a white blister, and care must be taken to ensure that this is done.
- The best method is applying wet-on-wet, if you do leave laminate for more than 24 hours make sure you sand the surface to assist adhesion.
- When the 2 layers of 450g matting and resin have cured, sand down any rough or sharp protrusions and check for dry mat or gaps, once any defects are removed or repaired then apply a layer of surface tissue, this gives a smooth even finish onto the course chopped strand matting and creates a good surface for applying the topcoat. Wet out the tissue with the resin similar to the mat.

## **TOP COATING**

Topcoat is also known as painting resin. Topcoat forms a very hard wearing surface. When fully cured it can be sanded with wet & dry paper. Once the tissue and resin have cured, check for any dry patches (lack of resin) within the laminate, if you are satisfied with your work sand lightly prior to applying the topcoat finish.

## **CATALYST / HARDENER**

Catalyst is added and stirred to activate the topcoat. Add catalyst at the rate of 2%-3% but never less than 1.5%. Mix enough topcoat for no more than 2m<sup>2</sup> to 3m<sup>2</sup> to avoid wasting material. The top coat can be painted on.

## COVERAGE

Approx. 500g of topcoat is required per m<sup>2</sup> of the surface area.

## CURING

When activated with catalyst at 2% in temperatures of 20°C pot life is approx. 20 minutes. Higher temperatures and higher catalyst additions will reduce pot life.

The resins and topcoat, although may seem dry at touch, are still going through the curing process so leave for 2 weeks minimum before filling with water, as polyester resins contains styrene monomer which can, unless the laminate is properly cured have a toxic effect on fish. It is advisable to fill and empty the pond with water several times to bring out any toxins present. Introduce plant life first, a few weeks later if all looks well introduce the fish.