



## Guidance Notes FOR PAINTING BOATS



### ALUMINIUM

Aluminium is widely used for marine structures - it is light as well as strong but it suffers from oxidation as does iron and steel. It must be coated to protect it from air and water and to provide the desired decorative finish

#### UNPAINTED NEW SURFACES

##### Below the waterline

Use Teamac Metaclor Underwater Primer. Stir the paint well. Apply by brush or spray to 90-100 microns wet film thickness at 20°C with good ventilation. The paint should be touch dry after two hours and can be re-coated after 8 hours. Two coats are recommended followed by two coats of a suitable antifouling.

NB. The Metaclor acts as a barrier between the aluminium and the antifouling. Any coating damage in use must be repaired and a cuprous oxide free, antifouling is then recommended.

##### Above the waterline

Thoroughly clean the surface and then lightly abrade to assist adhesion [or use Teamac Etch Primer (black only)]. Then prime with either Teamac Zinc Phosphate Primer or Teamac Metaclor Primer.



After this you can apply Teamac Marine Undercoat and Gloss as appropriate. For a higher performance system use either Metaclor Primer followed by Chlorvar Topcoat or Epidox 2 pack Zinc Phosphate Primer followed by P101 Topcoat.

#### PREVIOUSLY PAINTED SURFACES

Over existing paint ensure the paint is stable. Remove all loose and flaking areas back to clean aluminium then spot prime with either Metaclor or Zinc Phosphate Primer. Inspect the whole surface again to ensure no areas have been missed, thoroughly degrease and clean. Sand down all existing paint then apply the selected top coat.

Apply the selected undercoat and top coat as in "UNPAINTED NEW SURFACES".



### GLASS FIBRE, GRP

Glass fibre was originally designed to be relatively cheap, easy to use and a low maintenance substrate. Whilst having distinct advantages over some materials GRP does require maintenance, both for protective and decorative purposes. Ultra violet light from the sun, saltwater, abrasion, wear, tear and the dreaded "osmosis" all mean that protective coatings are required.

#### UNPAINTED NEW SURFACE

##### Preparation

Lightly abrade the surface with 200-300 grade sandpaper to assist adhesion of the coating. (Wear suitable dust mask). Dust off and ensure the prepared surface is free from any grease, oil, dirt or moisture and especially any mould release wax and grease. Thoroughly degrease the surface. Inspect the whole area for damaged and any blisters which show that osmosis may well have affected the substrate. Make repairs as required.

**IF IN ANY DOUBT CONSULT A PROFESSIONAL ESPECIALLY IN THE CASE WHERE OSMOSIS IS SUSPECTED.**

##### Painting

##### Below the waterline; Antifouling

Apply one or preferably two full coats of Teamac Antifouling of your choice, two coats should ensure that no area is missed. For advice on selection for your water, sea conditions and boat speed telephone +44 (0) or advice (Technical Services)

or

Check no areas have been missed and note the recommended launch times shown on the tin and in the antifouling brochure. Health and Safety as well as waste disposal information should be adhered to at all times.

##### Above the waterline

Proceed as in "Below the waterline" then apply the selected colour of Teamac Marine

Gloss directly to the prepared surface or P101 two pack Polyurethane if a higher performance is required.

Two coats should be applied, lightly sanding down between coats and ensuring the last coat is dry before applying the next. If changing colour from a blue to a yellow for example, ensure an even application for each coat and an extra coat may be required. (The use of Teamac Marine undercoat is not necessary for GRP substrates).

#### PREVIOUSLY PAINTED SURFACES

##### Preparation

On all substrates ensure the surface is clean, dry and free from wax, oil and dirt. Flaking paint work should be removed and old paint surfaces sanded. On GRP and glass fibre it is important to ensure that the exposed substrate has been adequately abraded, this could be why the previous coating has come away from the surface in this area (use 200-300 grade paper wet or dry).

##### Below the waterline

Self polishing type Antifouling should be checked for stability and compatibility before applying Teamac Antifouling. In practice incompatibility is not often a problem (see compatibility chart in the Teamac Antifouling Brochure or contact Technical Services on or email

Two coats are usually better than one providing better protection.

##### Above the waterline

Thoroughly inspect the entire surface. If there are any signs of physical damage, holes etc to the surface or "osmosis" blisters then more substantial repairs than painting are required and you should contact a professional boat yard. If an inspection reveals no such problems apply as in "NEW UNPAINTED SURFACES" The use of P101 two pack polyurethane top coat is not recommended over existing single pack finishes. For advice using P101 two pack contact us if in any doubt.



# GUIDANCE NOTES FOR PAINTING BOATS

## FERRO CONCRETE

It may sound strange to think of yourself floating on a “slab of concrete” however this is pretty much what a ferro concrete boat is, except the concrete is low density and reinforced with an iron structure. The hull is formed in metal mesh and then filled and “plastered” with concrete. This process makes the vessel both cheap and relatively easy to make. Repairs are also fairly straight forward.

### UNPAINTED NEW SURFACE

#### Preparation

Ferro concrete is porous and often has an uneven surface profile. If you are painting for the first time onto new work the surface should be sealed first with a suitable primer sealer which is compatible with the finish coat system. This will block up the open “pores” or small holes in the concrete. Firstly any “salts” or efflorescence formed from the drying process (often seen as white powder) must be removed. This can be done by “washing” the surface with a dilute Acid Etch solution which dissolves any alkaline salts. Thoroughly check over the entire surface to ensure there are no cracks or evidence of structural problems. If there is, then speak to a professional. Whilst you may be able to make the repair, the extent of any problem needs to be assessed.

#### Priming Below the waterline

Teamac Chlorvar thinned 10% with Teamac Thinners 15. Two coats will be required

#### Above the waterline

Teamac Chlorvar thinned 10% with Teamac Thinners 15. Two coats may be needed to provide a non-porous and sealed surface.

#### Finishing Below the waterline

Use the selected Teamac Antifouling. Two coats are recommended. Above the waterline Use the selected Teamac top coat system.

### PREVIOUSLY PAINTED SURFACE.

If the surface has been previously painted thoroughly check all areas. Ensure the surface is free from any efflorescence or salts. Remove any loose, fractious or “flaking” paint and spot prime with Chlorvar thinned 10% or a selected compatible primer. Sand down any good surfaces to help the new coating to adhere. Then check the selected coating. Check for compatibility. Generally Teamac Antifouling and Marine Gloss coatings have a good degree of compatibility. Care should be taken if using Teamac Chlorvar Chlorinated Rubber Paints or two pack systems.



## DECKS

Decks are critical areas. They are exposed to all elements (wind, sun, salt water) and also to the wear and tear of foot traffic. In addition, they want to be safe to walk, stand and even run on! The best way to achieve this is to use an anti-slip deck paint which both protects the surface and helps grip. Shoes are a part of this equation. Using good footwear makes a difference. Teamac Suregrip is a ready mixed paint system which contains aggregates to provide slip resistance.

Steel and Aluminium decks should be primed first after a thorough cleaning. All rust should be removed from steel (an etch primer can be helpful on aluminium) prior to the application of Teamac one pack or two pack Zinc Phosphate Primer.

One or two coats of Teamac Suregrip can then be applied. Brush well out to avoid applying a thick film which will be slow to dry. Two well brushed out coats are superior.

GRP and Glass fibre should be cleaned and sanded to provide adhesion for Suregrip to be applied directly to the surface; again two well brushed out coats.

Wood decks must be checked, cleaned and then sanded before priming with Teamac Exterior Wood Primer. Two well brushed out coats can then be applied.

Teamac Deck Paint can be used in areas where slip resistance is not critical. The same preparation applies.

## SPECIAL POINTS

Avoid painting in strong direct sunlight where possible. This increases the risk of the paint coating surface drying too fast; skinning with the subsequent formation of blisters. In addition, the “wet edge” is rapidly lost resulting in brush or roller marks.

Do not paint in dusty conditions; for example immediately after you have sanded off a surface. This will result in a rough finish.

Sounds obvious but paint in a systematic manner; start at one end and work to the other. Avoid breaks when in the middle of a large area and try to be consistent in brushing or rolling.

Do not apply the paint too thickly; stick to the coverage guide. Failure to do this can result in “solvent entrapment” in the paint film followed by blisters. Don't be tempted to get full coverage in one thick coat.

Always observe the recommended overcoat times when using two pack products. Ensure the previous coat is dry before overcoating. Single pack air drying paints must be given time to dry. Failure to do this will cause blisters and a “cheesy” paint film.

Most conventional coatings cover 8-10m2 (This is a general guide).

The most obvious one - make sure the surface is clean and dry; that includes during and after application. Don't paint before dew forms or the sea mist arrives! The finish will “bloom” i.e. go cloudy in appearance as moisture becomes trapped in the paint. You'll have to let it dry, sand it down and reapply (watch out for rain when using any two pack products).

Try to avoid contaminating your paint by using a separate container or 'kettle'.

Wood is a natural material and whilst care should be taken with every surface, moisture can be a problem in the timber. Ensure the surface is dry this can take a long time (i.e. weeks in some cases). Good ventilation and conditions are essential.

### A GENERAL GUIDE TO THE PERFORMANCE ORDER OF SURFACE COATINGS

| <i><b>BEST</b></i> | <i><b>PRODUCT TYPE</b></i>    | <i><b>NOTES</b></i>  |
|--------------------|-------------------------------|--|
|                    | Two Pack Polyurethane Systems | Very hard wearing. UV resistant but needs careful application and watch for compatibility. |
|                    | Two Pack Epoxy Systems        | Still an excellent coating but watch the pot life. Limited UV resistance                   |
|                    | Chlorinated Rubber Paints     | Excellent water and chemical resistance. Good gloss and colour retention                   |
|                    | Acrylated Rubber Paints       | A modern version of Chlorinated Rubber. Good UV resistant                                  |
|                    | Long Oil Alkyd Gloss          | Excellent gloss with a traditional finish. Easy to use.                                    |

## ADDITIONAL SPECIAL POINTS

Planning and preparation are critical to ensure your boat gets the best protection and looks great. Cleaning and sanding-down prior to painting should take at least 50% of the time.

Use the correct primer - this is vital to ‘tie’ the top coats to the surface and to seal any porous substrate such as timber or ferro concrete.

Select the complete paint system you require at the start - you can have compatibility problems if you mix a premium top coat with a cheap primer.

## WOOD

Wood is a natural material and as such is more susceptible to attack by plants, small animals and microbes than any other substrates. To prevent this it must be treated and protected with a durable effective paint system. Existing growth and infestation must be removed. Watch the moisture content; failure to ensure the timber is dry (this will depend on the type of timber but typically below 12-15%) will often result in microblistering of the paint system and consequent coating failure.

### UNPAINTED NEW SURFACE

#### Preparation

Before priming the wood should be dry, clean and free from grease. It is recommended that wood should be “sanded” to achieve an even surface. Check for damage, knots, rot etc. Treat as necessary, with knotting marine filler or replace if required. Thoroughly inspect the surface to double check its condition. Check all joints are sound and repair as required.

#### Painting Below the waterline

Teamac Metaclor Underwater Primer must be used. Stir the paint well. Apply by brush or roller to wet film thickness of approximately 90-100 microns at 20°C. With good ventilation the paint should be touch dry after 3 hours and re-coatable after 8 hours. One or two coats may be required depending on the porosity of the wood. Spray can be used but the best penetration for the initial coat is achieved by brush application. After application check the primed surface to ensure there are no untreated/uncoated areas then apply two coats of the selected antifouling.

#### Above the waterline

Teamac Penetrating Wood Primer can be used or Teamac Metaclor for a stronger performance. One coat may be enough but two coats

would be beneficial. This can then be overcoated with Teamac Marine Undercoat and Marine Gloss.

P101 two pack Polyurethane can be used for enhanced performance as a topcoat on top of Teamac 2 pack Epoxy Primer.

### PREVIOUSLY PAINTED SURFACES

Thoroughly clean and check the integrity of the existing paint and the hull. Spot prime and treat any exposed areas. Then proceed as in “UNPAINTED NEW SURFACE”. Ensure any loose and flaking material has been removed prior to the application of any new paint. Check the moisture content of the timber if it has been exposed or soaked in water - moisture can take a long time to leave the timber and will cause small blisters in the finished paint film if trapped in the wood.

### VARNISHES & OILS

Varnishes are clear coatings generally used to protect timber. A marine varnish is of exterior U.V. resistant quality. The surface must be clean, dry and sanded smooth. Start with 80-120 grade then finish with 200-300 grade paper. The surface can be wiped with a rag dampened with Thinners 15 to help ensure all dust is removed or use a tack rag. Check for any damage and make the necessary repairs as required. Apply a first coat of Teamalak Yacht Varnish slightly thinned with White Spirit. This will help the varnish penetrate into the wood. More coats can then be applied lightly sanding down between each coat (with 280-300 grade sandpaper) and ensuring the previous coat is dry before applying the next. The gloss and colour will deepen with each coat.

P101 two pack Polyurethane varnish will provide a high performance finish on stable timber but cannot be applied over existing single pack yacht varnishes. Teak oils can be used inside on hard woods which have a high “oil” content and are not suitable for traditional varnishes.

## IRON AND STEEL

Iron and steel must be prevented from breaking down into their “salts” or “oxides” (i.e. rust). To do this water and air must be prevented from coming into contact with the surface - the oxidisation process must be stopped.

### UNPAINTED NEW SURFACE

#### Preparation

Ensure that the surface is clean, dry and free from rust, mill scale and any loose or flaking material. It must also be thoroughly degreased. Mechanical abrasion, wire brushing, or preferably shot blasting is the recommended method. A suitable primer should be applied to the bare steel as soon as possible to prevent the new exposed metal from “flash rusting”.

The performance of the paint system will depend on the quality of the preparation; short cuts here will result in premature paint failure.

#### Painting Below the waterline

Apply at least two coats of Teamac Metaclor Primer and two coats of the chosen grade of Teamac Antifouling Paint. Thoroughly stir the products and apply two good coats to achieve a film thickness of at least 70-80 microns of primer + 100-120 microns of antifouling.

Alternatively two coats of Teamac Epidox two pack Zinc Phosphate Primer will provide a high performance barrier followed by the selected antifouling (two coats).

#### Above the waterline

Apply at least two coats of Teamac Metaclor Primer and two coats of Teamac Chlorinated Rubber Paint of the selected colour for excellent protection. The traditional system involves applying two coats of Teamac Zinc Phosphate Metal Primer, one coat of Teamac Marine Undercoat, and two coats of Teamac Marine Gloss, which will provide excellent protection and value for money. For the highest specification use Epidox 2 pack Zinc

Phosphate Primer followed by P101 two pack Polyurethane of the selected colour.

### PREVIOUSLY PAINTED SURFACE

#### Preparation

Thoroughly inspect the substrate. Remove any loose or flaking material and remove or treat all rust. Spot prime in accordance with the materials used in “UNPAINTED NEW SURFACES” but if you are uncertain about the compatibility of the new paint check first with Technical Services Teamac Rust Convertor can be used to stabilise rust areas but there is no substitute for complete removal and re-priming.

Abrade the entire surface and check the spot priming for adhesion before applying the appropriate selected undercoat and top coat.

P101 two pack Polyurethane should not be applied over existing single pack paint systems or if there is any doubt about the type of existing coating.

