

## FACT SHEET

### ALUMINIUM BOATS

All structures have their own particular set of problems in a marine environment. This is particularly so of aluminium boats.

Surface preparation is the key to successful painting or re-coating of this material. Even the most modern protective coating will fail to give long term protection if applied to a poorly prepared surface.

Aluminium is a difficult material on which to apply surface coating finishes. Today, there are products and systems for all types of craft and it is important for the boat owner to familiarise him or herself with the most suitable product for their own requirements. There are three steps in preparing aluminium for painting. These are:

- Degreasing: newly manufactured aluminium usually has roll-forming oil deposited onto it. This must be removed by washing the surface down thoroughly. The use of a detergent and water solution to remove the oil (and other contaminants) is preferred and is best carried out using a low pressure spray system followed by fresh water rinsing. If the cleaning is carried out with a cleaning cloth it is important to ensure clean cloths are used and these are changed frequently to avoid contamination.
- The surface should then be abraded in order of effectiveness by either whip abrasive blasting, disc grinding or by hand. Abrasive blasting is recognised as the superior method, with disc grinding the next most suitable, involving surface grinding using right angle head rotary surface grinders fitted with 60 grit aluminium oxide discs. Finally, hand abrading can be used for small areas, using 80-120 wet and dry paper. It is important that the abrasives or grinding and sanding materials are metal free (especially copper) and should not have been previously used to prepare other metals.
- Acid Etching has previously been used but this requires an unusually high level of care

and post treatment. This practice is not considered sufficiently reliable to be used on aluminium vessels that will be subject to marine environments and may involve immersion.

On completion of the above surface preparation steps, initial priming should then follow immediately, to avoid oxidation and recontamination of the surface.

The coating systems used are a progressive sequence of primers, fillers/fairing compounds and finish coats that are developed by manufacturers to achieve the optimum result.

Specific advice from the manufacturer should be obtained on suitable compatible systems to achieve the required result.

For vessels that will not be immersed, it is possible to use etch primers or chemical conversion coatings. Chemical conversion should be carried out by professional applicators due to the higher level of care required in handling the materials and to achieve a suitable result. Etch primers are also suitable for difficult components such as aluminium masts and spars.

Generally speaking, three types of finish coats can be used, as follows:

- One pack or durable marine gloss;
- Two pack polyurethane, which offers excellent gloss, chemical and colour retention;
- Two pack catalysed acrylic. This coating provides a similar level of durability to the two pack polyurethane but does not involve the use of isocyanate-based materials which present special health risks to the user during mixing and application.

The correct treatment and painting of aluminium boats will ensure that maintenance remains at a minimum, in both cost and time, and people can enjoy their boating, whether on a small sailing dinghy or larger vessel.