

This section covers three important areas you need to consider, whatever job you are undertaking; Substrate Information, Equipment Guidelines and Health & Safety.



Top Tip everything else you need to know

Throughout this guide we have been stressing the importance of good and thorough preparation and priming. Taking the time to understand your substrate and its characteristics can often provide you with basic information to help identify possible problems you may encounter.

WORKING WITH FIBREGLASS

Fibreglass, or GRP as it is often known, is made from polyester resin reinforced with chopped or woven glass fibres. Once the resin sets to a hard matrix the resulting laminate is strong and rigid. The smooth exterior is a protective gelcoat, made from polyester resin.

Despite its obvious advantages, experience has shown that glass fibre is susceptible to the effects of sunlight and the marine environment.

There are 2 problems to be aware of:

Glass Fibre is prone to osmosis!
For detailed information see pages 36–40.

Gelcoats fade!
Eventually the gelcoat will begin to fade. This is the result of the attack of UV (Ultra Violet) light in sunlight. Polishing with wax may delay this, but eventually a coat of paint will be needed to protect the surface.

WORKING WITH ALUMINIUM

Aluminium is an excellent material for boats, but care needs to be taken in its use to ensure a good result. Aluminium alloys are prone to corrosion if untreated or damaged. When new alloys are exposed, an oxide layer forms on their surface.

The oxide layer does not protect the alloy in the long term when exposed to damp marine environments. Attention to the preparation of a new hull and the maintenance of an existing hull can save you considerable difficulties and costly repairs in the future.

Aluminium Inspection: Periodically the paint system will need to be removed in areas of stress and the corrosion treated. Careful inspection on an annual basis of all weld seams will allow for early identification of the occurrence of this problem.

Aluminium Compatibility: Aluminium reacts with some copper-based antifouling paints causing serious corrosion. Therefore antifouling containing metallic copper or cuprous oxide should never be used on aluminium, whilst copper thiocyanate based antifouling can be used if the aluminium is primed properly.

WORKING WITH WOOD

Wood is the only natural boat building material used today, and although it generally requires more maintenance than the more common glass fibre vessels, a well cared for boat built of wood will always attract admiring glances when she slips into view.

The fibrous nature of timber means that it has a tendency to absorb moisture from the atmosphere, and swell and contract to varying degrees depending on the type of construction. For a varnish or paint coating to stay intact it will need to be quite flexible in nature. Moisture contents in wood can allow the growth of fungal spores, which leads to rotting and decay. Wood can also be subject to attack by marine borers, which eat the wood fibres. Wood therefore needs to be protected by good quality preservatives and coatings. Many different woods can be used, which can differ immensely.

HARDWOODS

Hardwood comes from slow growing deciduous trees. They have a tighter grain when compared to soft woods. This tight grain has good strength characteristics across the timber as well as along its length, making it particularly suitable for decorative application, as well as boat building.

Mahogany – will last for many years in a marine environment with little protection as the seawater has an antiseptic quality. The same is not true with regard to fresh water, which will lead to rot and decay if allowed to permeate the wood fibres. Mahogany should, therefore, be protected from freshwater at all times and wherever possible washed down with seawater.

Teak and Iroko – are particularly oily timbers with a natural resistance to rot and decay. Additionally they contain silica, which gives them hardwearing characteristics.

Oak – Ferrous metals, such as steel and iron, react badly with oak due to the tannin in the fibres. This will cause dark staining and even chemical attack on the metal by the tannic acid, which is formed.

SOFTWOODS

The grain in these woods is long, straight and generally wider spaced than hardwoods as these trees grow faster. This means that their strength is mostly along their length so they are used in such applications as masts and spars, tillers, rubbing strakes, oars and planked hulls.

WORKING WITH STEEL

Steel is a heat-treated alloy based on iron with a lower carbon content and small quantities of other elements. The high strength of steel in relation to the plate thickness and the ability to cut and bend it into many different shapes makes it a suitable material for building hulls and superstructures. Fastenings such as bolts and rivets are often a different alloy for added strength, while fittings contain added chromium, which makes it stainless and resistant to rust. Having stated that steel is a good material for building boats, it is

important to be aware of some of the characteristics of the material in order to ensure good results.

Steel corrodes! The most common form of corrosion in steel is rust. For the reaction to take place, water must also be present. The marine environment is therefore an ideal place for rust to occur.

Steel stretches! Due to the high flexibility and strength of steel it is hard to break, but impact damage may well result in a dent owing to the metal stretching and deforming locally. This can present problems for a protective coating, which may not be so flexible.



IMPORTANT: TO FIND MORE INFORMATION ON SUBSTRATES AND PREPARATION & PRIMING, VISIT OUR WEBSITE yachtpaint.com