

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



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 FIBERGLASS

Fiberglass is made from polyester resin reinforced with chopped or woven fibers. The resin and fibers set tighter to form a hard matrix resulting in a laminate that is strong and rigid. The smooth exterior is a protective gelcoat, made from polyester or vinylester resin.

Despite its advantages, experience shows that it is susceptible to the effects of sunlight and the marine environment.

There are 2 problems to be aware of:

Fiberglass can blister!

For detailed information see pages 24-28.

Gelcoats fade!

As a result of exposure to sunlight the gelcoat will begin to fade. Polishing with wax may delay this, but eventually a coat of paint will be needed to protect the surface.

WORKING WITH ALUMINUM

Aluminum is an excellent material for boats, but care needs to be taken in its use to ensure a good result. Aluminum alloys are prone to corrosion if untreated or damaged. 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.

Aluminum Inspection: Periodically the paint system will need to be removed and the corrosion treated. Inspection on an annual basis of all weld seams and rivets will allow for early identification and treatment of this problem.

Aluminum Compatibility: Antifouling paints that contain cuprous oxide or metallic copper should never be used on aluminum. Antifouling paints that contain cuprous thiocyanate can be used if the aluminum is primed properly.

WORKING WITH WOOD

Wood is the only natural boat building material used today, and generally requires more maintenance than the more common fiberglass vessels. Wood absorbs moisture from the atmosphere, and swells and contracts 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. Wood is subject to attack by fungal spores, which lead to rotting and decay and by marine borers, which eat the wood fibers. Wood therefore needs to be protected by good quality preservatives and coatings. Many different woods can be used, which can differ immensely.

HARDWOODS

Hardwoods have a tighter grain than soft woods. This tight grain has good strength characteristics across the timber as well as along its length, making it particularly suitable for use in boat building.

Mahogany – Saltwater has an antiseptic quality on mahogany that freshwater does not have. So, little protection will be needed in a marine environment whereas mahogany kept in fresh water will need to be carefully protected.

Teak and Iroko – The oil in these woods provide a natural resistance to rot and decay. They also contain silica, which gives them hardwearing characteristics.

Oak – reacts with steel and iron due to the tannin in the fibers. This will cause staining of the wood and chemical attack on the metal by the tannic acid.

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. The high strength of steel in relation to the thickness and the ability to cut and bend it into different shapes makes it suitable material for building hulls and superstructures. 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 steel it is hard to break, and impact damage will result in a dent. This presents problems for a protective coating that may not be flexible.

