

Yacht Surfacing Technology



Today's yachts require tough and durable materials that provide a mirror finish on their hulls, decks and superstructures.

RESOLTECH has formulated an integrated range of effective solutions for steel, aluminium, fibreglass, composite and wooden yachts.

The surface finishing solutions range from surface preparation to lightweight fillers and highbuild surfacers. They combine labour saving, proven durability and a perfect interface for all modern yacht coatings.



All custom yachts require surface finishing, from the largest megayacht to a sailing dinghy. The Resoltech solutions provide a durable quality finish on all materials.

SURFACE FINISHING

Surface finishing usually includes the treatment of the outer surface, the fairing of the hull and deck with a lightweight yet tough epoxy fairing compound and the coating with a highbuild surfacer. The integrated RESOLTECH solutions guarantee a high quality result and a long lasting protection for a yacht meant to handle the worst conditions. They were thoroughly tested in all latitudes from the Equatorial heat to Antarctic conditions.

SOLUTIONS FOR DIFFERENT TYPES OF VESSELS

MEGAYACHTS & CUSTOM YACHTS

Probably the most demanding application in the marine world. These vessels require the best possible cosmetic finish as well as extreme durability in any seas and temperature range. The three critical parameters are weight (due to the large areas), application (labour is the main part of the cost of fairing) and durability (high adhesion on the structure, integrity of the filler layer and interface with the high gloss surface coating).

RACING YACHTS

Racing yachts also require a high quality surface finish but weight is absolutely critical and the 8020EX produces a lightweight fairing solution.

TOOLING

Fibreglass and composite boats often start with tooling manufacture. RESOLTECH provides effective solutions for plugs and moulds, including a fairing compound that sands extremely easily.

REFITS & REPAIRS

The Resolcoat fillers bond onto older fillers and are extremely cost effective for refitting older yachts. Different hardeners allow the user to adjust for temperature differences (winter-summer) making them ideally suited to all regions of the world. The Resolcoat 8020EX is even available with a "5 minutes" hardener for small repairs requiring immediate sanding.

YACHT QUALITY SURFACE FINISH

A range of materials that combine ease of use, economy, perfect cosmetic finish, durability and toughness. Suitable for all construction materials.

The R 8020EX is an advanced epoxy fairing compound that is lightweight, easy to sand either with longboards or machine, resistant to moisture, strong and durable. Can be applied by trowel.

The R 3010 is an epoxy hightbuild surfacer to be applied over the R 8020 EX. It can be sprayed or rolled in thin coats. Each coat should be sanded and two coats will be required for an excellent finish. Acts as an excellent support for all marine polyurethane topcoats.

R 3010P is a primer for metal hulls (steel and aluminium). Metal boats require specific surface treatments prior to fairing.



Pacific 50, a Murray designed IMS cruiser/racer. Australia. A perfect RESOLTECH finish.

ALU-HETCH	CS 500	Aluminium surface treatment
PRIMER	R 3010P	Epoxy primer for metal hulls
FAIRING COMPOUND	R 8020 EX	Lightweight epoxy fairing compound
HIGHTBUILD SURFACER	R 3010	Epoxy hightbuild surfacer
WOOD RESIN SYSTEM	R 1020	For coating/priming wood surfaces
POWDER ADDITIVE	HP 510	To convert R1020 or R3010 into fillers
FILLET JOINTS	R 3020	To cover welds and smooth sharp angles

TOOLING

Most fiberglass and composite boats start their life as a plug and then a mould. RESOLTECH has developed a specific fairing compound for plugs and moulds: R 8020TR. This compound can be applied by trowel and is VERY easy to sand. It provides a very high adhesion onto all tooling materials. RESOLTECH also provides all resin systems and reinforcements for the manufacture of one off and production moulds, high and low temperature.

SURFACE PREPARATION

Different materials require different surface preparation. It is an essential step to ensure a strong and durable finish.

• FIBREGLASS AND COMPOSITES

There is a high compatibility between composite structures and the Resolcoat fillers. The surface must be deglazed, degreased and clean of dust to optimise the adhesion of the surface finishing systems. There is no need to apply a primer and the Resolcoat 8020EX should be ap-

plied directly onto the composite. For polyester and vinylester laminates, it is important to ensure that all the solvent has been released. If coating over a surface released from a mould, it is critical to ensure all wax or release agent has been removed.

• STEEL

Steel hulls must be prepared with care to ensure a high strength bond. The surface should be sandblasted or alternatively rough sanded and degreased. A coat of Resolcoat 3010P primer should be applied immediately after.



A **British Steel Challenge** 67' yacht built at Devonport Royal Dockard in 1991. Steel structure faired with the Resoltech epoxy compounds. The yacht sailed around the world against the wind 3 times. Full scale testing from the tropics to Cape Horn.

• ALUMINIUM

Aluminium requires a thorough surface preparation prior to fairing. The main problem with aluminium alloys is that it corrodes extremely fast on the surface. It is therefore necessary to prepare the surface either by sandblasting or by using the ALU-HETCH surface treatment. Once this is done, the surface should be thoroughly cleaned and degreased. It is very important to coat the surface with the Resolcoat 3010P primer immediately.

• WOOD

Modern wooden boats are usually sheathed with glass and epoxy. The procedure is therefore similar to composite boats. In case of fairing a raw wood surface, it is necessary to seal the wood with the Resolcoat 1020 or 1010 epoxy systems.

APPLICATION TIPS

Application conditions should be between 15°C (59 °F) and 25°C (77°F) and less than 70% humidity. The systems have however been used successfully outside these parameters in tropical conditions for example.

The **primer** Resolcoat 3010P should be applied with rollers or sprayed in a thin film over the metal surface.

The Resolcoat 8020EX **lightweight filler** should be applied with a trowel or spreader over the prepared surface or the primer. The R3010P primer can be overcoated without sanding the surface within a week. It is also important to ensure that the primer has released its solvent, especially in cold conditions.

On a rough surface, we advise using a notched spreader in order to coat only a third or a quarter of the surface in lines. The advantage of this technique is a dramatic labor saving during the sanding process as less surface needs to be sanded. There is no better solution for fairing a surface than long sanding boards by hand. It ensures that high areas are reduced while low areas are untouched. It is customary to start with 40 grit sandpaper and carry on with 80 grit.

The surface should be checked with straight battens and both highs and lows should be marked between each layer of filler. The surface must be thoroughly cleaned prior to applying more filler since dust would reduce the adhesion.

Once the surface is faired, the Resolcoat 3010 **highbuild surfa-**



An infused or vacuum bagged composite surface will usually be quite fair. The filler will compensate the fabrics overlaps and its texture. A peel ply finish will not require prior sanding.

small gaps and particularly sanding marks. Pin holes should be filled with the R 3010 thickened with glassbubbles and not a hard filler. Two coats of R 3010 with sanding with an orbital machine each time is usually sufficient to provide a perfect surface for the painting scheme.

Painting should be carried out after cleaning the surface of any dust. The Resoltech surfacing systems provide a perfect base for all marine coatings and quality paints. Epoxy and polyurethane systems are chemically close. An undercoat should be applied followed by the topcoat system according to the paint manufacturers instructions.

The mixing ratio of all the surfacing systems should be accurate. A wrong mixing ratio will nearly always result in poor properties after curing.

Thick substrates (usually the resin part) should be stirred prior to adding the hardener to ensure homogeneity.

Every system should be used according to the instructions stated on the products data sheets.



Once mixed, the 8020EX filler should be kept in open containers and used fairly quickly to avoid exothermic reactions in the pot. Epoxy systems tend to cure much faster in mass than once applied as a film. The R3010P and R3010 systems contain solvents and have a long pot life. They do not exotherm.

Safety instructions should be followed. Sanding generates dust and dustmasks should be worn by all crew. Skin contact with uncured products should be avoided by wearing gloves and appropriate clothing. Solventated products should be applied in a well ventilated environments.

Curing each layer prior to the next operation is important. This is important in cold conditions as the solventated system will take longer to release all their solvent and the R 8020EX will be slower to become hard and sandable. A simple polythene tent structure with a space heater will be very effective in extreme conditions.

OTHER SYSTEMS

Resoltech also provides solutions for:

- **Brightwork:** Deep gloss clear coating systems for carbon fiber laminates (R1070S) and veneer surfaces.
- **Structural:** Complete solutions for yachts custom pools and whirlpool baths, composite materials for lightweight composite deck parts, etc.
- **Teak decks:** Adhesives and sealing solutions for laying teak planks over decks.
- **Osmosis** protection and cure solutions.

Please do not hesitate to contact our technical department for any further query or a visit to your premises.

More information is available from www.resoltech.com. Technical data sheets can be downloaded from the web site.

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NOTICE

The above information is given in good faith and believed to be accurate. Please check with the our sales department should you be unable to find the product or service you need. Resoltech reserves the right to amend this list without prior notice.

TECHNOTES
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