

# THE EPOXY SYSTEM RESINA 2000

How to protect and repair your boat



Leaders in yacht paint systems

[www.venezianiyacht.it](http://www.venezianiyacht.it)

# THE EPOXY SYSTEM RESINA 2000

## **How to protect and repair your boat.**

If we want our boat to take us on our sea outings for as long as possible and to let us enjoy continuous contact with nature, we must give it all the attention it deserves. Seasonal protection and maintenance are essential to ensure a long and carefree life of the boat. And if the boat is made of wood, a material as noble as it is delicate, we must take special care.

Veneziani has always been a name of reference for the nautical world, has been manufacturing boat paints for over a century and has now developed a revolutionary Epoxy System consisting of Resina 2000 and its additives.

This system is very practical and versatile and provides a vast number of applications on wood, fibreglass and metal structures as well as many useful applications for repairs in other fields.

Of course this manual is not intended to provide an answer to everything, or to teach you how to build a boat. However if you leaf through it, you will find plenty of ideas on how to solve your boat problems using the Veneziani Epoxy System, even those that might arise during navigation. We have tried to describe the operations to be carried out as clearly and in as much detail as possible, taking into account both the quality of the final result, and the financial and practical aspects of the work.

Finally a recommendation. When faced with demanding and difficult tasks, do not overestimate your capabilities. If the work load is too difficult, it is certainly wiser to turn to a specialized and properly equipped boatyard. In this case the manual shall be useful for comparing our suggestions with the work carried out.

## **CENTRAL TECHNICAL SERVICE (CTS)**

Monday to Thursday from 8.30 to 12.30 and from 13.00 to 17.00,

Friday until 16.00. Out of hours, leave a message.

Phone: +39 040 3783911 - Fax: +39 040 3783906

[info@venezianiyacht.it](mailto:info@venezianiyacht.it)

[www.venezianiyacht.it](http://www.venezianiyacht.it)

EDITION 2008

## CONTENTS

### THE SYSTEM RESINA 2000 1

Resina 2000 page 2

### THE ADDITIVES 2

Microfibre page 4  
Microsfere page 5  
Microsilice page 6  
Additivo 2000 LT page 7  
Reinforcing fabrics page 8

### APPLICATIONS 3

Surface preparation page 9  
Wood protection page 10  
Laminations page 12  
Gluing page 14  
Angle joints page 15  
Filling page 16  
Fitting accessories page 17  
Small GRP repairs page 18  
High resistance system for wood with clear finish page 20

### OTHER PRODUCTS 4

To be used with Resina 2000 page 21

# 1

# THE SYSTEM RESINA 2000

This system consists of Resina 2000 and its additives: MICROFIBRE, MICROSFERE, MICROSILICE, ADDITIVO 2000 LT, TESSUTO DI VETRO and CARBONIO with different weights, which can be combined according to the required use.

## RESINA 2000

RESINA 2000 is a 2-pack, solvent-free epoxy resin, which has excellent impregnating power as well as high flexibility, hardness and adhesion, properties which confer outstanding resistance to fresh and salt water. Before using RESINA 2000, mix the base and the hardener. It is very important to use exactly a mixing ratio of 2:1, without changing it, because otherwise the properties of the epoxy resin could be affected.

Pour 2 parts of base and 1 part of hardener into graduated cylinders

in order to obtain maximum precision. When the dosage is completed transfer the content into a low and wide container in order to facilitate heat dispersion during mixing, and mix the content thoroughly. A wide container also facilitates the immersion of brushes and rollers.

Never add thinner to RESINA 2000. For the cleaning of the equipment only use DILUENTE 5610 for epoxy products.

Since the pot-life of the mixed product is only 30 minutes at 20° C, prepare limited quantities (about 750 ml). The pot-life of a two-pack product is the time, af-



ter mixing base and hardener, during which it is possible to apply the product. Once this time - which varies depending on the type of product - and diminishes with increasing temperatures - expires, the product becomes hard and cannot be used anymore. Preferably the application should be carried at a temperature range between +15 and +35° C.

Different temperatures could affect the application properties of the product. For lower temperatures please refer to the application data of ADDITIVO 2000 LT.



## RESINA 2000

### Protective barrier coat for wood

#### CHARACTERISTICS

Resina 2000 is a solvent-free structural epoxy coating designed for use in the construction, protection and restoration of wood, GRP and other boat building materials. Resina 2000 is a technologically advanced coating with offers excellent penetration power, flexibility and adhesion, properties which are essential for the maintenance and the protection of wood. Resina 2000 can also be used to create high-strength wood to wood joints, surface protection and impermeability of boat hulls. Wood protected with Resina 2000 acquires higher

strength and becomes impervious to water while maintaining its original flexibility. Together with special additives a range of filler can be produced, which are very easy to apply and extremely strong.

#### TECHNICAL DATA

Specific weight: 1.10±0.02 Kg/L  
Solids by volume: 100%  
Colour: clear  
Packaging: 0,75 L/1,50 L/15,00

#### APPLICATION DATA

Apply with: roller - brush  
Drying time before use (20°C):  
7 days  
Pot life (20°C): 0.5 hours  
Mixing ratio by volume: 2 :1  
Mixing ratio by weight: 70 : 30  
Thinner: 5610 for cleaning only  
DFT per coat: 100 µ



Theoretical coverage per coat:  
10,0 m<sup>2</sup>/L  
Recoating time (20°C):  
min 10 hours /max 36 hours  
Number of coats: 3 - 4

# 2

# THE ADDITIVES

## Doses and use

The additives shall be added to RESINA 2000 only after the preparation of the catalysed mixture. Proceed as outlined here below:

**1** Mix component A with component B in accordance with the procedures indicated in the previous pages.

**2** Carry out the dosage of the additives with the mixture in accordance with the following instructions regarding the use and the type of required compound.

**Attention: all instructions refer to mixing by "volume".**

**3** Stir the RESINA 2000 mixed with the additive until producing a homogeneous compound.



**4** Apply the compound with brush, roller or filling knife according to the required use.



## MICROFIBRE

• **Liquid glue:** mix 2 parts of already catalysed RESINA 2000 + 1 part of MICROFIBRE, in order to produce a liquid glue suitable for the gluing of surfaces with small defects.



• **Light structural compound:** mix 1 part of already catalysed RESINA 2000 + 1 part of MICROFIBRE, in order to produce a light structural compound suitable for gluing of surfaces with larger defects.



• **Structural, high viscosity compound:** mix 1 part of already catalysed RESINA 2000 + 2 parts of MICROFIBRE, in order to produce a structural compound with high viscosity suitable to be applied on vertical surfaces without sagging.



## MICROFIBRE Synthetic microfibers

### CHARACTERISTICS

MICROFIBRE belongs to the range of additives to be mixed with RESINA 2000 in order to produce compounds with different properties. MICROFIBRE consists of microfibers with an average length of 500 microns, which, when

mixed with RESINA 2000, create a strong compound, owing to a multidirectional internal structure. Due to the low absorbency of resin, the penetration capacity of RESINA 2000 is not affected. The main purpose is the gluing of T-joints, where a filler with high viscosity and high mechanical resistance is required.



### TECHNICAL DATA

Packaging: 0,75 L/2,50 L

## MICROSFERE

• **Liquid self-levelling compound:** mix 2 parts of already catalysed RESINA 2000 + 1 part of MICROSFERE, in order to produce a liquid compound suitable for the repair of horizontal cracks and for gluing.



• **Semi-fluid compound:** mix 1 part of already catalysed RESINA 2000 + 1 part of MICROSFERE, in order to produce a semi-liquid compound suitable as a filling compound for small surface defects and as a knifing filler.



• **Filler:** mix 1 part of already catalysed RESINA 2000 + 2/3 parts of MICROSFERE, in order to produce a filler suitable to be applied at high thickness.



## MICROSFERE

### Hollow glass-microspheres

### CHARACTERISTICS

MICROSFERE belongs to the range of additives to be mixed with RESINA 2000 in order to produce compounds with different properties. MICROSFERE consists of microspheres with low absorbency of humidity, which therefore can

be used for applications above and below the waterline. Their main purpose is the production of fillers with low specific gravity, which are easy to sand and whose consistency may be varied according to the needs of the operator. These fillers are best suited for the repair of horizontal cracks, small surface defects, jointing and as knifing fillers.



### TECHNICAL DATA

Packaging: 0,75 L/2,50 L

**MICROSILICE**

• **Fluid compound:** mix 2 parts of already catalysed RESINA 2000 + 1 part of MICROSILICE, in order to produce a liquid compound suitable for gluing of small parts and laminations.



• **Paste:** mix 1 part of already catalysed RESINA 2000 + 1 part of MICROSILICE, in order to produce a paste suitable for jointing, gluing of fittings and as an all purpose filler.



• **Structural compound:** Mix 1 part of already catalysed RESINA 2000 + 2 parts of MICROSILICE, in order to produce a structural compound suitable for extensive jointing and filler application.



The recommended doses of additive to be mixed with RESINA 2000 are indicative: they can be modulated in order to produce a mixture suitable for your requirements. Do not exceed the maximum recommended dose in order to avoid loss of adhesion and fragility of the compound. Do not use the additives with the first coat, otherwise the penetrating power of the resin would be reduced.

## MICROSILICE

### Colloidal microsilica

**CHARACTERISTICS**

MICROSILICE belongs to the range of additives to be mixed with RESINA 2000 in order to produce compounds with different properties. MICROSILICE is a thickening additive used with RESINA 2000. Best suited for gluing, jointing

and the repair of defective spots. It may be mixed together with other additives of the range in order to improve knife application and appearance of the product and is suitable for both above and below waterline applications.

**TECHNICAL DATA**

Packaging: 0,75 L



### ADDITIVO 2000 LT

Accelerator for RESINA 2000 at low temperatures. If added with a maximum percentage of 5% to the hardener (by volume or weight) of the epoxy system RESINA 2000, the product accelerates drying and curing of the coating system at low temperatures.

Add the accelerator with a maximum percentage of 5% to the hardener of RESINA 2000. Stir thoroughly and then mix the base with the hardener at a ratio 2:1 by volume or 70:30 by weight.

The following table summarizes different pot-lives of 200 g of catalysed product at various temperatures.



Exhibition panel showing all uses of Resina 2000.

Temperature	pot-life of Resina 2000	Pot-life of Resina 2000 + Additivo 2000 LT
5°C	2,30 hours	2 hours
10°C	2 hours	1 hour
15°C	1 hour	40 minutes
20°C	30 minutes	20 minutes
25°C	20 minutes	15 minutes

### ADDITIVO 2000 LT Accelerating agent for Resina 2000 at low temperatures

#### CHARACTERISTICS

This product, when added with a maximum percentage of 5% (by weight or volume) to the hardener of RESINA 2000, reduces the drying and curing time at low temperatures. Never exceed the maximum recommended percen-

tage, since otherwise the performance of the epoxy coating could be affected. Do not apply at temperatures below 5°C or above 25°C.

#### TECHNICAL DATA

Specific weight:  
0.97 ± 0.02 Kg/L  
Solids by volume: 100%  
Colour: amber yellow  
Packaging: 0,125 L



#### APPLICATION DATA

Thinner: 5610 for cleaning only

## REINFORCING FABRICS

Wet the surface to be treated with RESINA 2000 by means of a short-hair roller or a brush. Cut a piece of fabric slightly larger than the area to be treated and spread it uniformly. Impregnate the fabric with an additional coat of RESINA 2000, removing possible air bubbles with a short-hair roller or a filler knife.

Wait at least 10 hours before cutting off the excess edge with a cutter.



### Tessuto di vetro 86 g/m<sup>2</sup>

Unidirectional reinforcing glass fiber fabric (Plain) which improves the tensile and compression strength of the surface to which it is applied. Impregnated with RESINA 2000, this fabric eliminates small surface defects and prevents infiltrations as well as small movements. Barely visible if used with clear coating systems on marine plywood and GRP.

### Tessuto di vetro 160 g/m<sup>2</sup>

Biaxial reinforcing glass fiber fabric (Twill 2x2) which improves the tensile and compression strength of the surface to which it is applied. Impregnated with RESINA 2000, this fabric is suitable for reconstructions with a single layer, structural reinforcing and laminations on boats made of wood or GRP. Applied to veneer-wood this fabric improves the transverse strength to the graining up to 50% maximal. Barely visible if used with clear coating systems on marine plywood and GRP.

### Tessuto di vetro 300 g/m<sup>2</sup>

Biaxial reinforcing glass fiber fabric (Twill 2x2) which improves the tensile and compression strength of the surface to which it

is applied. Impregnated with RESINA 2000, this fabric is suitable for reconstructions with a single layer, structural reinforcing and laminations on boats made of wood or GRP.

Applied to veneer-wood this fabric improves the transverse strength to the graining up to 50% maximal.

### Tessuto di carbonio 200 g/m<sup>2</sup>

Unidirectional reinforcing carbon fiber fabric (Plain) which improves the tensile and compression strength of the surface to which it is applied. This fabric is stiff and has the double strength if compared to glass fiber fabrics of the same weight. Impregnated with Resina 2000, this fabric eliminates small surface defects and prevents infiltrations as well as small movements. Barely visible if used with clear coating systems on marine plywood and GRP and recommendable for its high strength and pleasant appearance.

## TESSUTI

### Reinforcing fabrics for Resina 2000

### CHARACTERISTICS

Combined with Resina 2000 these fabrics are suitable for structural reinforcing and small repairs on wood and GRP with clear finishes. Very useful to eliminate small surface defects and to pre-

vent infiltrations as well as small movements of the substrate.

### TECHNICAL DATA

Tipo:

Tessuto vetro 86 g/m<sup>2</sup>

Tessuto vetro 160 g/m<sup>2</sup>

Tessuto vetro 300 g/m<sup>2</sup>

Tessuto carbonio 196 g/m<sup>2</sup>

Packaging: 0,50 m<sup>2</sup>



## SURFACE PREPARATION

Satisfactory results depend not only on the characteristics of RESINA 2000 but above all on proper surface preparation and application. Do not try to save time during surface preparation: it is always time well spent. Unless specifically indicated otherwise, the operations described on this page must be performed prior to all tasks indicated in the subsequent pages.

On any type of substrate, old existing coatings must be eliminated in order to ensure perfect adhesion of RESINA 2000.

### WOOD SURFACES

**1** Make sure that the wood is completely dry in order to avoid that humidity entrapped under the coating shall cause rotting and in order to ensure the best possible adhesion of the coating system.

**2** Clean the surface thoroughly removing all traces of oil, grease or wax.

**3** Sand with an abrasive paper of a grade suitable for the subsequent finish. Parts to be glued should be sanded in different direction in order to obtain a surface as rough as possible.

### GRP AND METAL SURFACES

**1** Degrease with DETERSIL and rinse thoroughly with fresh water. Do not use thinners or solvents, which - instead of cleaning - would spread the contamination over the surface.

**2** Paper-sand, disc-sand or sand-blast the area to be treated in order to obtain a clean surface with a rough profile.

**3** Remove the dust and proceed with the application.



A humidity gauge, suitable for measuring the humidity content in GRP and wood.



Disc-sanding is one of the most effective procedures of preparing a surface for the application of Resina 2000.

An effective procedure to detect contaminations with grease or oil, consists in spraying a small quantity of water on the surface: if the water spreads out or is adsorbed, the surface is clean. If drops are formed the surface needs additional degreasing.

### **ATTENTION!**

By resin we mean RESINA 2000 carefully mixed with the hardener.

## WOOD PROTECTION

Wooden boats are exposed to humidity, UV-rays and marine fouling, agents which may cause the deterioration of wood, especially in the case of poor maintenance, and can affect the original mechanical resistance of the planking, impairing the reliability of the boat.

The application of a protective coating with Resina 2000 offers several advantages:

- It forms an barrier impervious to moisture and oxygen, the agents which cause the deterioration of wood.
- It creates a suitable base for the subsequent coating system.
- It does not affect the flexibility and the natural movements of the wood.

**1** After surface preparation proceed as follows:

**2** If the wood is new apply, immediately after surface preparation, 1 coat of FIBRODUR, a sealer which penetrates deeply into the wood fibers and enhances the adhesion of RESINA 2000. Sand with 180 grade paper and remove the dust.

**3** Apply RESINA 2000; the application can be carried out with brush or roller owing to the fluidity and the good levelling capacity of the product.

**4** Apply at least 2 additional coats of RESINA 2000 in order to ensure proper protection. The theoretical coverage is about 10 m<sup>2</sup>/l and the thickness per coat about 100 micron. With 3 coats one can apply 300 micron, which is the minimum indispensable thickness for underwater areas. Usually for the first coat more paint is required than for the subsequent coats.



Wet film thickness gauge.

**5** If necessary, carry out the filling between the 1st and the 2nd coat, using a mixture of RESINA 2000 and MICROSFERE.

## WORK BETTER AND FASTER

- For better results apply more thin coats rather than fewer thick coats.
- For large areas use foam rollers, which allow a quick and clean job, without sagging or air entrapment. Use light, "criss-cross" strokes to ensure an even coating without sagging and wastage.



Cross the roller passes to produce an even coating.

- To remove any air bubbles which could form, use light strokes with a dry brush.
- To avoid sanding between coats, comply with the recoat time: minimum 10, maximum 36 hours (at 20°C). Full curing to reach the maximum resistance requires 7 days (at 20°C).
- Sometimes, at high humidity or low temperature a sticky layer may form on the surface of the coating. To remove it, simply wash the surface with fresh water. This phenomenon (amine blushing), which could cause problems for sanding and the adhesion of subsequent coats, is caused by floating of water soluble amines, contained in the hardener, to the coating surface. After washing and drying continue with the application as normal.



Application of one coat of Fibrodur.



Application of Resina 2000 with a roller.



Final smoothing of Resina 2000.



Areas below waterline: prior to the antifouling apply one coat of Adherglass.  
Areas above waterline: prior to Gel Gloss Pro apply one coat of Plastolite Pro.

## **RESINA 2000** **IS NOT A FINISH**

Since the surface painted with RESINA 2000 is very smooth and glossy, it may be thought that it could serve as a finish. However, epoxy resins exposed to atmospheric agents for longer periods suffer discoloration and chalking. Therefore, in order to preserve long-lasting gloss and colour, a clear polyurethane UV-resistant finish, such as WOOD GLOSS or an enamel should be applied.

For a detailed description of painting systems both below and above the waterline please refer to our brochure "Maintaining your Boat", which can be requested from: phone +39 040 3783911 fax +39 040 3783906.

# 3

# APPLICATIONS

## LAMINATIONS

Laminations consist in building a new part or in covering an existing part with reinforcing fabrics made of fiberglass, carbon or Kevlar mats impregnated with RESINA 2000.

Proceed as follows:

**1** Wet the surface to be treated evenly with catalysed Resina 2000 by means of a short-hair roller or a brush.



**2** Cut a piece of fabric slightly larger than the area to be treated and spread it uniformly. On large areas there should be an overlap of a few centimetres at the joints.



**3** Impregnate the fabric with an additional coat of Resina 2000. For removing air bubbles and wrinkles often special foam-breaking rollers are used. The adhesion may be defective on sharp edges, which should be rounded previously. Remove excess resin with a spatula or a small roller.

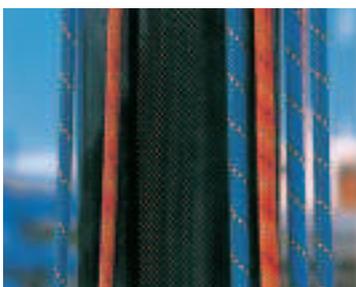
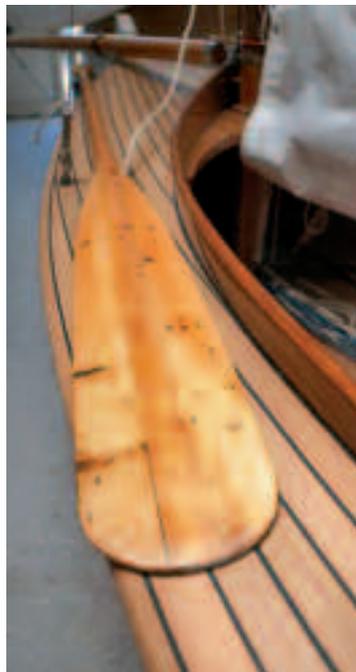


**4** Wait at least 10 hours before cutting off the protruding edges with a cutter.



*An example of a laminated part after completion.*

## A few examples of RESINA 2000 applications for wood protection and clear finishes.



*Resina 2000 can be also used for repairs and laminations with carbon fabrics.*



*For superstructures with a clear finish, in order to maintain the natural appearance of wood, use a single layer of light fabric such as the fiberglass mat 86 g/m<sup>2</sup>, which remains almost colourless after application.*



*More infrequent, but very interesting is the application of Kevlar fabrics which combine high mechanical strength with low weight. This application is often used in the construction of ultra-light racing boats.*



*Resina 2000 can be also used for the gluing of wooden and composite parts.*

## GLUING

The Veneziani Epoxy System provides easy and fast gluing between different boat building materials.

***ATTENTION!***

*In order to ensure perfect adhesion between the parts to be glued, to avoid porosities and for a clean job, excess resin should be pressed out and removed. It is not necessary to apply high pressure to the parts; clamps or vices will be sufficient and also prevent sliding.*



For gluing, RESINA 2000 must be thickened with:

- MICROFIBRE for applications where higher strength is required;
- MICROSILICE for applications where good resistance and easy sanding is required.

For gluing follow the procedures outlined here below:

**1** Clean and sand the parts to be glued.

**2** Impregnate with RESINA 2000 before gluing. This step is particularly important for wood, in order to ensure deep penetration of the resin into the fibers. Otherwise the wood could absorb resin from the gluing paste, resulting in a more fragile bonding.



**3** Mix the resin with the additive of choice and apply the mixture to the surfaces to be glued, taking care to level any uneven spots.



**4** After gluing, apply one additional coat to the joint and the surrounding area for waterproofing and complete the coating system with the recommended finish (please refer to the brochure "Maintaining your Boat").

**Remark!**

*The viscosity of the mixture should be adapted to the conditions of the surfaces to be glued together. Rougher surface require a mixture with higher viscosity.*

## ANGLE JOINTS

Angle joints are often called “T-joints” or beads and are often made to strengthen the bond between frames and planking, between topside and deck or simply to install a shelf or a fitting. This procedure consists in gluing two perpendicular parts and ensures both pleasant appearance and a strong joint by increasing the contact surface.

For producing an angle joint proceed as follows:

**1** Sand the parts to be glued.

**2** Impregnate with RESINA 2000.

**3** Wait for the resin to penetrate and become sticky, then apply more RESINA 2000 mixed with MICROSILICE to the contact areas (mixing ratio resin/additive 1:2 by volume).



**4** Fasten the parts to be glued and apply additional mixture along the joint. During this step it may be useful to use a large syringe, similar to silicone tubes, especially for arched joints.

**5** If necessary, shape the joint with a round tip spatula or a wooden stick with a tip adapted to the radius of the desired joint.



**6** Remove the surplus mixture with a spatula in order to facilitate sanding.



**7** Apply one coat of a mixture with MICROSFERE which is easier to sand and provides a better finish.



**8** If necessary, apply a suitable coating system.

## FILLING

Filling is necessary for levelling uneven spots and for repairing damages caused by aging or accidents. The use of the Veneziani Epoxy System make the work easier. Fillers produced with RESINA 2000 and its additives are solvent-free and therefore do not shrink during curing. Using MICROSFERE for the profiling of large areas provides also a sound-proofing and heat-insulating barrier.

For filling proceed as follows:

- Sand and clean the surface to be treated, removing, if necessary, rough spots.
- Impregnate the surface with RESINA 2000, using rollers for larger areas and brushes smaller areas.
- Prepare the filler by adding the desired quantity of MICROSFERE to the catalysed resin. Apply the filler with a spatula of suitable size or with a bar, preferably crossing the passes. The maximum recommended thickness is 10 mm. If a higher thickness is needed, apply several layers.

**1** Mix 2 parts of base with 1 part of hardener. Stir thoroughly for a few minutes.



**3** Prepare the filler by adding the desired quantity of MICROSFERE to the RESINA 2000. Mix and stir thoroughly.



**4** Apply the filler with a spatula of suitable size.



**5** Cross the strokes by 90°.



*Profiling is the filling of large areas, common in the building of new boats and the repair of severe damages. Profiling is carried out with special rods or bars which make it possible to spread the filler evenly over very large areas, resulting in a continuous layer with very low specific weight. This procedure is usually carried out by boatyards, however if you decide to perform it by yourself, keep in mind to prepare limited quantities of product at a time, which ensure a longer pot-life and avoid discarding of unused catalysed resin. Profiling is very common on keels and rudders, often carried out to improve the boat's performance.*

**2** Impregnate the surface to be treated with RESINA 2000 using a short hair roller or a brush.



### Remember

- When repairing wood with spots damaged by rot, first of all remove the deteriorated parts with a chisel and then apply the product.
- When filling wooden surfaces with a clear finish, it is possible to produce a filler of the same colour by mixing the resin with sawdust from the same wood.

## FITTING ACCESSORIES

Mixtures of RESINA 2000 with its additives are well suited for fitting deck accessories, by gluing them directly to the deck or by gluing of the fastening screws.

In the latter case, just impregnate the screw holes with resin prior to inserting the screws. Upon curing, the screw thread in the wood or GRP will be reinforced by the hardened RESINA 2000.



With the thickened resin it is also possible to reconstruct outworn threads. In order to facilitate the dismantling of fittings, the screws should be lubricated with wax, penetrating spray or grease, which, if applied to the screws before installation will avoid the screws to be locked. This procedure is often used for the reconstruction of damaged stanchion seats and for the fitting of boat equipment. Moreover, this procedure will make the screw holes watertight and avoid infiltrations.



*If you have forgotten to lubricate the screws, it may be useful to heat the screw head with a welding device in order to soften the resin.*

## SMALL GRP REPAIRS

The Veneziani Epoxy system is also suitable for GRP repairs. Actually the applications of this product on fiberglass provide better adhesion than those with polyester resin.

The main uses are the following:

Repairs of delaminations.

Repairs of cracks.

Repairs of broken spots.

Repairs of crevices.

Structural reinforcements

Gluing of teak staves on decks.

For these repairs proceed as follows:

- Prepare the surface to be treated.
- Degrease the surface by washing with DETERSIL, a degreasing and emulsifying detergent.

### REPAIRING A GRP CRACK

- 1 Prepare the surface by disc-sanding.



- 2 Apply by brush a quantity of catalysed RESINA 2000 sufficient to impregnate the damaged area.



- 3 Fit a piece of fiberglass mat, previously cut to the desired shape. Impregnate the fiberglass with more catalysed RESINA 2000.



- 4 Repeat the above procedure until the required thickness has been obtained.



- 5 Once the resin has hardened, remove any residues by polishing.



- 6 Fill the repaired area with a mixture made of RESINA 2000 and MICROSFERE.



- 7 For this procedure a square spatula is recommended.



- 8 Once the filler has hardened, carry out the final polishing and apply a suitable painting system.



## GLUING OF GRP

**1** Separate the parts to be glued with shims or wedges and degrease with DILUENTE 5780.



**2** Disc-sand the areas to be glued.



**3** Mix RESINA 2000 with MICRO-FIBRE until the required viscosity is obtained.



**4** Apply the mixture to the area to be glued with a spatula.



**5** Remove the wedges and shims.



**6** Join the parts and apply light pressure.



**7** Hold the glued parts in position with a clamp without squeezing and remove the surplus mixture with a spatula.



**8** After gluing, fill the damaged area with RESINA 2000 and MICROSFERE in order to produce a smooth surface.



**9** After sanding, apply 1 or 2 coats of PLASTOLITE PRO and 2 coats of GEL GLOSS PRO.



## HIGH RESISTANCE SYSTEM WITH CLEAR FINISH FOR WOOD

**Wood impregnated with FIBRODUR**

Clear



Teak



Mahogany



Walnut

**HIGH RESISTANCE SYSTEM FOR WOOD WITH CLEAR FINISH**

**1** For high resistance painting systems, first of all impregnate the wood with FIBRODUR, a two-pack polyurethane sealer, which is available with the following colours: **clear, teak, mahogany, walnut.**

**2** After a drying time of at least 12 hours, sand with 180 grade paper and remove any residues. Apply 2 coats of RESINA 2000 with brush or short hair roller and a recoat time of 8/10 hours.



**3** Apply 6 to 12 coats with brush or spray-gun of WOOD GLOSS, a high gloss clear finish for interior and exterior surfaces. The recoat time is 8 hours minimum. For best results sand with 300 - 600 grade paper between coats.



WOOD GLOSS x 6/12

RESINA 2000 x 2

FIBRODUR

**FIBRODUR**

Sealer for wood

**CHARACTERISTICS**

A two-pack primer for wood with excellent sealing properties. Fibrodur penetrates deeply into the wood fibers producing a highly impermeable and hard surface. This product is recommended for new and stripped wood. When applied properly in a single coat, it does not form a film but penetrates into the surface. The clear Fibrodur does not alter the original colour of the wood and does not yellow when aging. Fibrodur can be over-coated with a wide range of products such as Plastolite pro, Ticoprene Yachting, Eurogel, Timber Gloss, Wood Gloss, Wood Mat and Resina 2000.

**TECHNICAL DATA**

Specific weight:  
0.98 ± 0.02 Kg/L  
Solids by volume: 25%  
Colour: clear, mahogany,  
walnut, teak  
Packaging: 0,75 L

**APPLICATION DATA**

Apply with: brush - swab  
Drying time before use (20°C):  
3 days  
Pot life (20°C): 4 hours  
Mixing ratio by volume: 2:1  
Mixing ratio by weight: 62:38  
Thinner: 5780 for cleaning only  
DFT per coat: 20 µ  
Theoretical coverage per coat:  
12,5 m<sup>2</sup>/L  
Recoating time (20°C):  
min 12 hours  
Number of coats: 1 - 2

**WOOD GLOSS**

High-gloss wood finish

**CHARACTERISTICS**

A clear, two-pack glossy varnish. Exceptionally resistant against atmospheric agents and the marine environment. Excellent levelling properties and high abrasion resistance. Wood Gloss enhances the beauty of wood without shrinking problems after application.

Particularly recommended for clear finishes on exterior and interior surfaces. Not suitable for areas below the waterline. Apply several coats to obtain a perfect finish with high durability in aggressive environment.

**TECHNICAL DATA**

Specific weight:  
1.02 ± 0.02 Kg/L  
Solids by volume: 38%  
Colour: clear  
Packaging: 0,75 L

**DATI APPLICATIVI**

Apply with: brush - spray  
Drying time before use (20°C):  
3 days  
Pot life (20°C): 3 hours  
Mixing ratio by volume: 4:1  
Mixing ratio by weight: 80:20  
Thinner: 5780  
DFT per coat: 20 µ  
Theoretical coverage per coat:  
19 m<sup>2</sup>/L  
Recoating time (20°C):  
min 8 hours/max 48 hours  
Number of coats: 6 - 12

# VENEZIANI PUBLICATIONS

If you would like to receive further information about specific subjects, here below are additional brochures by Veneziani. You may request them by using the form below or connecting to the internet site [www.venezianiyacht.it](http://www.venezianiyacht.it).

## MAINTAINING YOUR BOAT

How to prepare, protect and paint any type of boat. All you should know about painting and maintenance, about products and equipment.

A manual, written by the Veneziani technical team, indispensable to keep your boat in top shape.

## AQUASTOP BY VENEZIANI

An effective cure against osmosis.

Aquastop provides protection for boat hulls, both as preventive treatment on new boats and as restoration treatment of boats already damaged by osmosis.

## LISTINO NAUTICA

All Veneziani products, divided into categories, with indication of colours, codes, packaging and prices.

**Please photocopy, complete and fax to 0039-0403783906  
or send by mail to Veneziani Yachting - Piazza Tommaseo 4 - 34121 Trieste - Italy**

Please send the following Veneziani brochures

(mark the requested brochures):

- MAINTAINING YOUR BOAT**
- AQUASTOP BY VENEZIANI**
- LISTINO NAUTICA**

Name \_\_\_\_\_

Surname \_\_\_\_\_

Address \_\_\_\_\_

Post Code \_\_\_\_\_ Town/City \_\_\_\_\_ Country \_\_\_\_\_

Phone \_\_\_\_\_ e-mail \_\_\_\_\_

Herewith I authorize the treatment of my personal data and the their use according to the decree n.196/2003 for commercial, promotional and marketing purposes regarding Veneziani Yachting products.

# 4

# OTHER PRODUCTS

## TO BE USED WHEN WORKING WITH RESINA 2000

### DETERSIL

Emulsifying detergent for silicones

#### CHARACTERISTICS

Detersil is an emulsifying detergent for silicones. To obtain maximum adhesion of paint to GRP surfaces without the need of sanding, it is necessary to remove first all mould-release agents. Since these agents contain wax, paraffin or silicone, a

special detergent must be used. Detersil has a dissolving and emulsifying action and can be used whenever a surface has to be cleaned thoroughly before painting.

#### TECHNICAL DATA

Specific weight:  $0.93 \pm 0.02$  Kg/L  
Solids by volume: 44%  
Colour: clear  
Packaging: 1,00 L

#### APPLICATION DATA

Apply with: brush - swab  
Thinner: water for cleaning only  
Theoretical coverage:  $30,0 \text{ m}^2/\text{L}$



### ADHERGLASS

Adhesion primer for GRP

#### CHARACTERISTICS

Adherglass is a primer based on synthetic polymers. It is a one-pack primer providing excellent adhesion and suitable for use on gel coats, GRP, and epoxies such as Plastolite Pro and Aquastop. Adherglass is quick drying and used mainly as a primer

for antifoulings on GRP and on new or stripped gel coats. The surface does not require sanding to provide proper adhesion but must be degreased thoroughly.

#### TECHNICAL DATA

Specific weight:  $1.21 \pm 0.02$  Kg/L  
Solids by volume: 20%  
Colour: pink  
Packaging: 0,75 L / 5,00 L

#### APPLICATION DATA

Apply with: brush - roller  
Drying time before use (20°C): 6 hours  
Thinner: 5780 for cleaning only  
DFT per coat: 15  $\mu$   
Theoretical coverage:  $13,3 \text{ m}^2/\text{L}$   
Recoat time (20°C): minimum 6 hours  
Number of coats: 1



### PLASTOLITE PRO

High-build epoxy primer

#### CHARACTERISTICS

A two-pack primer acting as barrier coat, suitable for the anticorrosion protection of all boat building materials (wood, steel, aluminium and GRP) exposed to the marine environment. Plastolite pro may be used both as primer for underwater areas and as undercoat for topsides and deckhouses. If the recommended recoat time is exceeded or if over-coated with an epoxy undercoat (Polyrex pro) sanding between coats is re-

commended. If over-coated with Adherglass or with polyurethane finishes such as Gel Gloss pro or Superverex Antiskid, no sanding is required.

#### TECHNICAL DATA

Specific weight:  $1.36 \pm 0.02$  Kg/L  
Solids by volume: 50%  
Colour: light ivory  
Packaging: 0,75 L/5 L

#### APPLICATION DATA

Apply with: roller - brush - air spray - airless spray  
Drying time before use (20°C): 7 days  
Pot life (20°C): 6 hours  
Mixing ratio by volume: 3:1  
Mixing ratio by weight: 82:18  
Thinner: 5610  
DFT per coat: 100  $\mu$   
Theoretical coverage per coat:  $5 \text{ m}^2/\text{L}$   
Recoating time (20°C): min 16 hours / max 48 hours  
Number of coats: 2 - 4



### GEL GLOSS PRO

Two-pack polyurethane finish

#### CHARACTERISTICHE

A high quality enamel with excellent resistance against the marine and industrial environment. Non-yellowing, very flexible and gloss-retaining. The excellent levelling properties provide a perfect finish for topsides, decks, deckhouses, etc. Gel gloss Pro can be applied directly to gel coats as well as to epoxy or polyurethane primers (Plastolite pro, Polyrex pro).

Not suitable for areas below the waterline.

#### TECHNICAL DATA

Specific weight:  $1.29 \pm 0.02$  Kg/L  
Solids by volume: 54%  
Colour: refer to colour chart  
Packaging: 0,75 L/2,50 L

#### APPLICATION DATA

Apply with: roller - brush - conventional/airless spray  
Drying time before use (20°C): 7 days

Pot life (20°C): 3 - 4 hours  
Mixing ratio by volume: 3:1  
Mixing ratio by weight: 80:20  
Thinner: 5780 (brush - roller) 6700 (conventional/airless spray)  
DFT per coat: 35/40  $\mu$   
Theoretical coverage per coat:  $15,4 - 13,5 \text{ m}^2/\text{L}$   
Recoating time (20°C): min 3 - 4 hours / max 48 hours  
Number of coats: 2 - 3



### EVEN EXTREME 2

Two-pack Biomatrix Technology antifouling

#### CHARACTERISTICS

Biomatrix technology based antifouling of second generation. Even Extreme 2 is the development of a new antifouling formulation based on the synergy between polymers and biocides, which provides progressive solubility, high quality and longest durability even against micro-fouling. The two-pack system provides an unparalleled antifouling protection. It is quick drying, so that 2 coats can be applied during the

same day. Suitable for sailboats and powerboats made of GRP, wood or steel (on suitable primers). The white type only can be applied on light alloy boats (on suitable primers). There is the possibility to launch the boat already after 4 hours drying time from the last coat application (at 20°C), but there is no maximum time limit for launching.

#### TECHNICAL DATA

Specific weight:  $1.85 \pm 0.02$  Kg/L  
Solids by volume: 53%  
Colour: white, blue, black, red  
Packaging: 0,75 L / 2,50 L

#### APPLICATION DATA

Apply with: roller - brush - spray  
Drying time before use (20°C): min 4 hours  
Pot life (20°C): 7 hours  
Mixing ratio by volume: 3:2  
Mixing ratio by weight: 72:28  
Thinner: 6470  
DFT per coat: 50  $\mu$   
Theoretical coverage per coat:  $10,6 \text{ m}^2/\text{L}$   
Recoating time (20°C): min 4 hours  
Number of coats: 2



**RAFFAELLO**

**Self-polishing hydrophilic antifouling with carbon**

**CHARACTERISTICS**

A superior grade, high performance antifouling with a hydrophilic matrix, with a high content of copper compounds as well as an addition of pure carbon particles, which provide both excellent antifouling protection and drag reduction in all conditions. Effective in warm and temperate seawater, brackish and fresh water. Raf-

faello is self-polishing with a progressive solubility and therefore suitable for medium-speed power boats as well as for sailboats. Not suitable for boats made of aluminium. The thickness of this antifouling is reduced progressively during service, avoiding an excessive increase of the antifouling layer also after the application of several coats.

**TECHNICAL DATA**

Specific weight: 1.67 ± 0.02 Kg/L  
Solids by volume: 50%

Colour: light blue, blue, light grey, black, red, green  
Packaging: 0,75 L/2,50 L/5,00 L

**APPLICATION DATA**

Apply with: roller - brush - spray  
Drying time before use (20°C): min 12 hours  
Thinner: 6470  
DFT per coat: 40 - 50 µ  
Theoretical coverage: 12,5 - 10,0 m<sup>2</sup>/L  
Recoat time at 20°C: min 8 hours  
Number of coats: 2

**RAFFAELLO BIANCA RACING**

**White self-polishing hydrophilic antifouling**

**CHARACTERISTICS**

Superior grade, durable antifouling which is both hydrophilic and self-polishing. Because of its high content of organic biocides, this antifouling maintains a stable white colour above and below the waterline and ensures an excellent antifouling performance. The resin is hydrophilic, which means lower surface tension

and reduced drag. Effective in warm and temperate seawater as well as in brackish water. Raffaello Bianca Racing has a progressive solubility and therefore can be used on medium-speed powerboats as well as on sailboats. Particularly recommended for regatta sailboats.

**TECHNICAL DATA**

Specific weight: 1.67 ± 0.02 Kg/L  
Solids by volume: 50%  
Colour: white  
Packaging: 0,75 L/2,50 L/5,00 L

**APPLICATION DATA**

Apply with: roller - brush - spray  
Drying time before use (20°C): min 12 hours  
Thinner: 6470  
DFT per coat: 40 - 50 µ  
Theoretical coverage: 12,5 - 10,0 m<sup>2</sup>/L  
Recoat time at 20°C: min 8 hours  
Number of coats: 2

**BLANC SPRINT over 35 knots**

**Antifouling for high speed boats**

**CHARACTERISTICS**

Hard antifouling for high-speed boats. This product has been formulated for the antifouling protection of hulls made of GRP, wood or light alloy, previously primed with Adherglass. The white colour of this antifouling remains stable both above and below the waterline. Suitable for

any type of water. Excellent abrasion resistance also during towing on the slipway.

**TECHNICAL DATA**

Specific weight: 1.62 ± 0.02 Kg/L  
Solids by volume: 50%  
Colour: white  
Packaging: 0,75 L / 2,50 L / 5,00 L

**APPLICATION DATA**

Apply with: roller - brush - spray  
Drying time before use (20°C): min 6 hours  
Thinner: 6470  
DFT per coat: 40 - 50 µ  
Theoretical coverage: 12,5 - 10,0 m<sup>2</sup>/L  
Recoat time at 20°C: min 6 hours  
Number of coats: 2

**EUROSPRINT**

**Long life antifouling**

**CHARACTERISTICS**

Eurosprint is an antifouling with a high copper content. Suitable for any type of seawater, brackish and lake water. This hard antifouling has good abrasion resistance and is suitable for sailboats and powerboats (also for speeds over 35 knots) made of GRP, steel and wood but not suitable for light alloy hulls.

**TECHNICAL DATA**

Specific weight: 1.62 ± 0.02 Kg/L  
Solids by volume: 45%  
Colour: red, blue, black  
Packaging: 0,75 L / 2,50 L / 5,00 L

**APPLICATION DATA**

Apply with: roller - brush - spray  
Drying time before use (20°C): min 24 hours  
Thinner: 6470  
DFT per coat: 40 - 50 µ  
Theoretical coverage: 11,3 - 9,0 m<sup>2</sup>/L  
Recoat time at 20° C: min 8 hours  
Number of coats: 2 - 3

**SPEEDY CARBONIUM**

**Two-pack antifouling for regatta boats**

**CHARACTERISTICS**

Two-pack medium hard antifouling which uses carbon particles as an active component for better performance of fast sailboats. Suitable for fast boats made of GRP, wood, steel and aluminium (on suitable primers). The application must be carried out by spraying. After the application it is possible to wet sand the film in order to improve the smoothness of the

surface.

**TECHNICAL DATA**

Specific weight: 1.79 ± 0.02 Kg/L  
Solids by volume: 53%  
Colour: grey  
Packaging: 0,75 L / 2,50 L

**APPLICATION DATA**

Apply with: roller - spray  
Drying time before use (20°C): min 8 hours  
Pot life (20°C): 48 hours  
Mixing ratio by volume: 2:1  
Mixing ratio by weight: 67:33  
Thinner: 6470  
DFT per coat: 50 µ  
Theoretical coverage per coat: 10,6 m<sup>2</sup>/L  
Recoating time (20°C): min 4 hours  
Number of coats: 2



