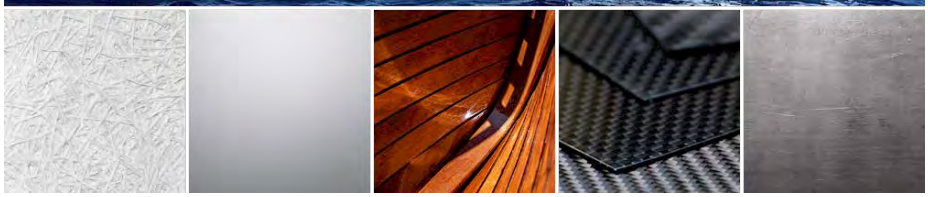


NAUTICAL GUIDE

APPLICATION AND REFINISHING

glass shield HIGH PERFORMANCE COATINGS

glass shield HIGH PERFORMANCE COATINGS

SUMMARY

GENERAL GUIDELINES

This guide is designed to provide the professional applicator with the following information necessary for the application of our products; it is intended as a practical guide for the handyman. We encourage you to read the entire guide, especially the safety sections before applying any product. Material Safety Data Sheets (SMDS) must be read by the applicator before applying a Glass Shield product. These documents contain detailed information for the safe handling of our products.

In addition to information on application systems, you can consult the technical data sheets for these products at www.glass-shield.com. They contain the basic data of the mixing ratios and the application specifications for each product.

Remember that the recommended Glass Shield coating systems are designed specifically for the pleasure craft industry and provide a finish that is resistant to UVs, abrasion, chalking, corrosion and chemical attack. Only a complete Glass Shield coating system will provide these features. Do not incorporate thinner, additive, modifier, converter, or primer that is not specifically recommended by Glass Shield. Such substitution may jeopardize the characteristics of the Glass Shield coating system and may result in poor cosmetic quality, premature coating failure and will automatically void any liability on our part.

SAFETY PRACTICES

Glass Shield is committed to providing you with state-of-the-art products and coating systems. This commitment comes with a much heavier responsibility of consequences, it is therefore for this reason that we provide you with the necessary safety information concerning the application and handling of our products.
Please read the warnings and warnings on our labels carefully. They are there for your benefit, your safety and your health. The recommended safety equipment guarantees the safe use of
our products.

If you have any questions, please do not hesitate to contact us.
PHONE: 1.800.361.6652

In addition, you can consult our technical sheets on our website at www.glass-shield.com

SURFACE CLEANING

A clean, dry surface is essential to the success of any coating. Our systems include products and procedures that will allow you to achieve appropriate surface conditions. Remember:clean before sanding. Sanding often melts grease, wax and oils in the surface, making it impossible to get a clean surface.
Many applicators rub the surface they are going to paint with a cleaner with a powder for household chores and a scouring pad before performing any other preparatory work. This is an excellent practice because careful observation of the behavior of the water during rinsing will give you a good indication of the cleanliness of your surface. Ruptures, holes or even the beading of the rinsing water indicate the areas which require additional attention.

Two-cloth cleaning technique.

The surface should be thoroughly cleaned of any dust using a vacuum cleaner or dry, clean air blown while wiping with a clean, oil-free cotton cloth. Dip a cloth in Glass Shield GS 9020S surface cleaning solvent and use this cloth to wet the surface.

Use a second dry cloth to wipe the surface to remove any surface contamination. Work small areas of 4 square feet or less at a time to eliminate evaporation and drying of the solvent before your second cloth wipes it off. You will get perfect cleanliness. Change your cloths frequently, until the entire surface is free of residue. After this operation, you will be able to proceed to the next step: sanding.

WARNING!

Wiping the surface with a single damp cloth only spreads the contaminants. Make sure that the cloths used are free of dirt or contaminants. A clean cotton cloth is best.

ADHESIVE TAPE AND MASKING

Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings. Common problems with tapes not designed for use with these types of coatings is that they have poor resistance to creep solvents and leave adhesive residue on the surface.

For the creation of decorative strips, a thin plastic tape such as 3M Fine Line® #218 is recommended. To ensure a uniform adhesion, push the edges of the paint tape with a sheet of paper.This will facilitate the sliding in order to obtain well sealed edges, a fine, uniform line and without creep.

Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® maskingpaperishighlyrecommended.

WARNING!

Do not use film or light plastic film to hide your surfaces, they have the tendency to stick to the surface. This can leave marks or marks on the paint that cannot be removed. Do not use plastic sheeting on a surface for more than two days. Condensation can form under the plastic and cause blistering, bubbles or loss of gloss in the paint finish. Do not use newsprint or newspapers; these can stain the paint finish.

COMPRESSOR AND COMPRESSED AIR

Clean, oil-free and dry air is essential for the operation of the spray equipment for applying the primer or topcoat.

The air supply ducts must be fitted with a separating filter for oil and water. To be effective, the air coming from the compressor must have time to cool before reaching the separator filter. Usually a minimum of 30 feet is required between the compressor and the separator filters. Additional separator filters may be required.

SANDING AND SANDING PAPER

When sanding or grinding, work in well ventilated areas and maintain a continuous flow of fresh air.

- Do not breathe sanding or grinding dust.
- Keep sanding dust out of contact with skin and eyes.
- Wear a properly fitted chemical cartridge or mechanical filter respirator, such as a 3M 6000 series or equivalent, when sanding.
- Keep your unprotected partners and workers away from the sanding and grinding area.

Proper sanding promotes adhesion of the next layer. Excessive sanding or using too coarse grit can open pores in the surface or create a scratch profile. This can cause porosity holes in the gelcoat and sanding scratches that will be visible in your finish and will need to be corrected before applying your primer.

There are four basic types of sanding in our guide, references are made to each type. The four types can be made by hand with a flexible 3M type nautical sanding block (part number 83978), or with an electric sander. The shape of the surface, size and quality requirements will determine the tools or combination of tools required.

First type.

Light surface sanding: tarnish the gloss of a finish or smooth surface or to create a profile to promote the adhesion of another coating. The advantage with our 1500 series primer is that you will have no sanding to do if you apply your topcoat before 30 days. If you exceed this deadline, we recommend the use of a 3M Scotch-Brite® pad in order to frost the surface and promote adhesion of your topcoat. If your 1500 series primer shows signs of orange peel or a lack of straightness in your primer, sanding will be necessary to correct the straightness of your primer layer to optimize the quality of your finish.

Second type

Soft sanding: this type of sanding is used to correct signs of orange peel or fine texture following brushstrokes or rollers. This is usually done with a small pad sander or manual sanding using a small sanding block and sanding paper with a relatively fine grain. Never use your fingers for sanding as the straightness of your primer will be affected by a lack of uniformity.

Third type

Block type sanding: block type sanding is used for fairing. This type of sanding is done by hand, it uses a flexible 3M type nautical sanding board (part number 83978) or an electric sander to level the straightness of your surface. The deep areaswill be darker, and the upper areas will become paler after sanding. The aim of this sanding operation is to standardize the straightness of your surface.

Fourth type

Grinding: for removing material. The grains are coarse, 24-36-60, with the primary purpose of removing unwanted material and creating a surface profile. Grinding would be used to shine corroded metal, remove old coatings and remove heavily oxidized or damaged gelcoat.

ATOMISATION EQUIPMENT

Ten steps to success.
Key points on equipment for Glass Shield applications.

Step 1
You need good quality and well-maintained equipment. If you use the best paint, you will limit your chances of success by not using the right material in the best conditions. This includes ensuring that the flexible air hoses are of the correct type and capacity.

Step 2
Standardize your equipment. When more than one spray gun is used during a job, it is advantageous to use the same brands and models of guns, pressure pots, etc. It also includes having the same air caps, the same tips and the same nozzles, those recommended by the gun manufacturer.

Step 3
Make sure the gun, ducts and air are clean. If the air ducts are dirty, please replace them. Check the interior cleanliness of the ducts by running air through for 10-15 minutes in a clean cloth. Replace filters and service parts regularly.

Step 4
Check the environmental conditions. Temperature (air and substrate), humidity and air flow may all require adjustment to optimize the quality of your finish.

Step 5
Once the environmental situation is known, choose the right reducing agent and dilute to the recommended viscosity.

Step 6
Determine the optimal gun configuration. In order to correctly adjust the atomization of the paint, check the product flow and the air pressure with the spray gun. Do your tests on cardboard.

ATOMISATION EQUIPMENT

Step 7
Synchronize the settings of your pistols. Check that all spray guns have the same air flow and pressure, and that these are not changed during application.

Step 8
Save the settings for future reference.

Step 9
Spray a test area at the beginning of the work and before the application of each layer. Spray a decent sized surface on a separate panel and check the appearance and thickness of the wet film using a wet film micrometer.

Step 10
Work during the pot-life time window. As the paint continues to induce, the rheology and viscosity may change, affecting the result.

IMPORTANT!

Use only with adequate ventilation. Maintain a continuous flow of fresh air. Do not breathe the vapors. Wear suitable air respirator snugly, during and after application, unless air quality demonstrates the presence of steam and that the levels of particles are below applicable limits. Follow the manufacturer's instructions for the respirator. Provide enough general and/or local mechanical ventilation to keep exposure below threshold limit values.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. An approved respirator should be used with our products.

APPLICATION EQUIPEMENT

BRUSHES AND ROLLERS

Use brushes and rollers that are specified for use with polyurethanes and epoxies. Household products "melt" due to their lack of resistance to solvents. The listed products from Corona Brushes and Redtree Industries have proven to perform satisfactorily with our products. Equivalent products from other manufacturers may also be satisfactory.

BRUSHES:

Corona: Heritage® or Urethaner® brushes are recommended for most jobs; a Europa® works if a finer brush is required for detailed work.

Redtree: Badger®, Onyx® and Chinese Ox® are recommended for fine finishing work. Fooler® is recommended for epoxy coatings and maintenance work.

It is sometimes useful to use at least two brushes. Keep one of them in the Glass Shield T9800S while using the other. Change the brush periodically to avoid build-up of paint in the brush. Carefully remove excess solvent from the soaked brush before using it again. For best results, rotate the brushes using a brush and roller wringer.

ROLLERS:

Corona: Glasskoter® R101F (1/8 "bristles) and R201F (3/8" bristles) are conventional roller coatings of the mohair type. The Foam Slicker® F780-012F is a foam cover.

Redtree: Mohair® Deluxe R-11PH (3/16 "bristles) is recommended for surface varnishes. Foam Roller® (1/8" bristles) is designed for all polyurethanes and epoxies. Dynex® R-22PH (3/8 "bristles) is recommended for Glass Shield epoxy primers

You must use a brush to pour the paint to remove bubbles or dots left by the rollers. Use fresh Glass Shield T9800S to clean or soak equipment. Always keep additional equipment on hand at the job site.

EXECUTION DIAGRAM AND PROCEDURES
NEW ALUMINUM SUBSTRATE

ABOVE THE WATERLINE

NEW ALUMINUM WITHOUT COATING

TREAT ALUMINUM SURFACES WITH A.G.A. 2000

VINYL-SHIELD 7342 VINYL PRIMER FULL APPLICATION

1500 SERIES EP-GUARD EPOXY APPLICATION 1553 WHITE OR 1552 GRAY ON ALL SURFACES

CAREFUL INSPECTION OF EPOXY COATING

RESULT : UNIFORM AND PERFECT APPLICATION

GS-9020S TO REMOVE ALL SURFACE RESIDUES

MASKING

APPLY GLASS-GUARD 2800 TOPCOAT ABOVE THE WATERLINE

RESULT : APPARENT FAILURE OR DEFECTS

CORRECTION OF SURFACE DEFECTS

UNDER THE WATERLINE

1500 SERIES EP-GUARD EPOXY APPLICATION 1503 RED OR 1559 BLACK ON ALL SURFACES

CAREFUL INSPECTION OF EPOXY COATING

RESULT : UNIFORM AND PERFECT APPLICATION

GS-9020S TO REMOVE ALL SURFACE RESIDUES

MASKING

APPLICATION OF ANTI-FOULING LAYER MONOGLASS MC - 4250*

APPLICATION OF ANTI-FOULING LAYER AMBER-SHIELD MC - 4509**

APPLICATION OF COPPER OXIDE BASED ANTI-FOULING LAYER***

* Where isocyanates are permitted.
** Where isocyanates are prohibited.
*** Where biocides are allowed.

TREAT ALLALUMINUM SURFACES WITH A.G.A. 2000

EXECUTION DIAGRAM AND PROCEDURES
NEW ALUMINUM SUBSTRATE

Aluminum conditioner.

AGA-2000™is a one-compound product that does not require any prior mixing. The conditioner contains phosphoric acid as well as a biodegradable surfacer allowing the emulsification of organic contaminants and the conditioning of metallic surfaces, thus allocating the promotion of adhesion and resistance to corrosion.

AGA-2000™can be applied using a sprayer (garden type) or manually using a brush or a clean cloth. Apply the solution for a period of 5 to 10 minutes, always keep the surface wet during this period, then rinse the surface with water and wipe with a clean, dry and oil-free cotton cloth to remove any whitish residue. Wait at least half an hour before applying the primer.

IMPORTANT!

Do not use a spray gun specific to the application of paint, because the seals will be badly damaged, reducing the level of performance of this one as well as the quality of your finish.

WARNING!

Do not get in eyes, on skin or on clothing. Use acid-resistant safety glasses with splash protection. We recommend that you wear a coveralls, solvent proof gloves and boots to avoid contact with the skin. An approved respirator is optional but highly recommended with this product.

VINYL-SHIELD 7342
VINYL PRIMER
APPLICATION

EXECUTION DIAGRAM AND PROCEDURES
NEW ALUMINUM SUBSTRATE

Vinyl primer VINYL-SHIELD™ 7342 for aluminum.

STEP 1

Masking: different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and yourtechnique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings. Masking papers are produced in different qualities. The solvents in the polyurethane and epoxy coatings require a paper having excellent resistance to penetration of solvents. 3M's Scotchblok® masking paper is highly recommended.

STEP2

VINYL-SHIELD™ 7342 (part A) is a two-component vinyl primer with a ratio of 1:1 per volume. Slowly add its catalyst to part B 7343C in order to obtain a homogeneous mixture, it is recommended tomechanically mix part A and B for between 5 and 10 minutes. Diluting the product with a thinner is not necessary.

STEP3

VINYL-SHIELD™ 7342 vinyl primer must be applied with an air gun. Pour your mixture into the suitable for your gun and make the necessary adjustments by consulting and following the instructions from the manufacturer of your spray equipment. Test and adjust the spray on a FOAM CORE type board available in format 50x76 cm (20x30 in.) to become familiar with the application of the vinyl primer and obtain a uniform application.

STEP 4

Your tests are conclusive, your adjustments are perfect, your test application is uniform and without orange peel, apply a first coat to obtain a dry film with a thickness varying between 7.5 and 17 microns (0.3 to 0.7 mils). Allow the film toevaporate between 20 to 30 minutes after application. Using a digital micrometer, check the thickness of your dry film. The pot life of the mixed vinyl primer is approximately 4 to 5 hours at an ambient temperature of 25ºC (77ºF), if your dry film does not have the minimum thickness required (7.5 microns or 0.3 mils), repeat step 3.

STEP5

When your application is uniform, with no orange peel and your dry film thickness is ranging between 7.5 and 17 microns (0.3 to 0.7 mils). You have 60 minutes to clean your equipment using our GS T9800S cleaning solvent and begin the preparation and application of your EP-GUARD 1500 series epoxy primer. In a controlled environment, free of contamination, the time maximum recovery could be 4 hours.

TIPS AND TRICKS!

- ✓ When applying your vinyl primer, keep your spray gun at a distance varying from 8 to 10 in. and always perpendicular to your surface in order to obtain a uniform application.

- ✓ In order to measure the thickness of your dry film, a range of digital micrometers are available on the market offering a degree of precision with a price range of less than CAD $100. A very interesting model is the BSIDE CCT02 offering three units of measurement with an accuracy of ± 2% + 0.02 mm, suitable for ferrous and non-ferrous substrates such as aluminum at a price of approximately CAD $70.

IMPORTANT!

Use only with adequate ventilation. Maintain a continuous flow of fresh air. Do not breathe the vapors. Wear suitable air respirator snugly, during and after application, unless air quality demonstrates the presence of steam and that the levels of particles are below applicable limits. Follow the manufacturer's instructions for the respirator. Provide enough general and/or local mechanical ventilation to keep exposure below threshold limit values.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. An approved respirator should be used with our products.

1500 SERIES EP-GUARD
EPOXY APPLICATION
1553 WHITE OR 1552 GRAY
ON ALL SURFACES

EXECUTION DIAGRAM AND PROCEDURES

NEW ALUMINUM SUBSTRATE

ABOVE THE WATERLINE

EP-GUARD™ 1500 SERIES epoxy primer.

STEP1

When your surface is free of impurities, you can proceed with the preparation and mixing of the epoxy primer EP-GUARD™ Series 1500. This is a two-component system, so you must add the catalyst.

Two catalysts are available. To determine the catalyst that will suit your application, please refer to our technical data sheets, or contact our technical service. You can opt either for the normal catalyst, the 161-49C comprising an induction time of 30 minutes and a pot life of 6 hours, or the faster 161-80C, comprising no induction time and a 3-hour pot life.

Mix part A and part B of the 1500 series in a 3:1 ratio using a ratio rule provided by Glass Shield. With the Glass Shield GS 162-11S thinner, dilute in order to adjust the viscosity of your epoxy from 22 to 38 seconds on an EZ-ZAHN no.2 viscosity cup. You can also dilute by volume varying from 10 to 35% depending on the application technique and the type of spraying equipment selected.

STEP 2

Pour your mixture into the suitable recipient for your air gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your spray equipment. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) format in order to familiarize yourself with the application of the epoxy primer and to obtain uniform application.

STEP 3

Your tests are conclusive, your adjustments are perfect, your test application is uniform and without orange peel, apply two layers to obtain a dry film with a thickness varying between 76 and 127 microns (3.0 to 5.0 mils). Allow the film to evaporate between 10 to 15 minutes after the application of the first layer and proceed to the application of the second layer and allow to dry for 8 to 12 hours.

STEP 4

You can now move on to cleaning your equipment using GS T9800S™ cleaning solvent.

1500 SERIES EP-GUARD
EPOXY APPLICATION
1503 RED OR 1559 BLACK
ON ALL SURFACES

EXECUTION DIAGRAM AND PROCEDURES

NEW ALUMINUM SUBSTRATE

UNDER THE WATERLINE

EP-GUARD™ 1500 SERIES epoxy primer.

STEP 1

When your surface is free of impurities, you can proceed with the preparation and mixing of the epoxy primer EP-GUARD™ Series 1500. This is a two-component system, so you must add the catalyst.

Two catalysts are available. To determine the catalyst that will suit your application, please refer to our technical data sheets, or contact our technical service. You can opt either for the normal catalyst, the 161-49C comprising an induction time of 30 minutes and a pot life of 6 hours, or the faster 161-80C, comprising no induction time and a 3-hour pot life.

Mix part A and part B of the 1500 series in a 3:1 ratio using a ratio rule provided by Glass Shield. With the Glass Shield GS 162-11S thinner, dilute in order to adjust the viscosity of your epoxy from 22 to 38 seconds on an EZ-ZAHN no.2 viscosity cup. You can also dilute by volume varying from 10 to 35% depending on the application technique and the type of spraying equipment selected.

STEP 2

Pour your mixture into the suitable recipient for your air gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your spray equipment. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) format in order to familiarize yourself with the application of the epoxy primer and to obtain uniform application.

STEP 3

Your tests are conclusive, your adjustments are perfect, your test application is uniform and without orange peel, apply two layers to obtain a dry film with a thickness varying between 76 and 127 microns (3.0 to 5.0 mils). Allow the film to evaporate between 10 to 15 minutes after the application of the first layer and proceed to the application of the second layer and allow to dry for 8 to 12 hours.

STEP 4

You can now move on to cleaning your equipment using GS T9800S™ cleaning solvent.

EP-GUARD™ 1500 series epoxy primer inspection.

STEP 1

Using cotton gloves, carry out a complete inspection of your primer to check if it has any anomalies such as: dust, lint, drips, micro cracks or orange peel texture

STEP 2

Using a digital micrometer, check the thickness of your dry film in several places to make sure that your dry film meets the application standards. Your dry film should have a thickness varying between 76 and 127 microns (3.0 to 5.0 mils). To make sure that your epoxy film corresponds to the recommended thickness, don't forget to deduct the thickness of your vinyl primer varying between 7.5 and 17 microns (0.3 to 0.7 mils).

You have completed your inspection, go to the corresponding step in relation to your results.

TIPS AND TRICKS!

- ✓ During your inspection, you must not touch your epoxy film with your bare hands, as your fingers will leave traces of oils on the epoxy film and will affect the adhesion of your topcoat. Wear cotton gloves.

Congratulations!

The application of your EP-GUARD™ 1500 series epoxy film is impeccable! With our EP-GUARD™ 1500 series epoxy, you now have a 30-day overlay window without having to sand the surface before applying your topcoat. This advantage allows you to save time while eliminating a tedious operation.

In addition, our 1500 series EP-GUARD™ epoxy not only gives you a waterproof film, but a film with high resistance to abrasion, impact and common chemicals.

You can now proceed to the next step.

GS-9020S TO REMOVE ALL SURFACE RESIDUES

EXECUTION DIAGRAM AND PROCEDURES

DECKS

ABOVE THE WATERLINE

Two-cloth cleaning technique.

Before proceeding to the application of your topcoat, your epoxy film must be cleaned in order to remove all traces of contaminant, dust or body oils in order to optimize and ensure the quality of your finish.

Dip a cloth in Glass Shield GS 9020S™ surface cleaning solvent which is a final washing solvent and use this cloth to wet the surface.

Use a second dry cloth to wipe the surface to remove any surface contamination. Work small areas of 4 square feet or less at a time to eliminate evaporation and drying of the solvent before your second cloth wipes it off. Your will get perfect cleanliness. Change your cloths frequently, until the entire surface is free of residue.

IMPORTANT!

Wiping the surface with a single damp cloth only spreads the contaminants. Make sure that the rags used are free of impurities or contaminants. A clean cotton cloth is best.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. An approved respirator should be used with our products.

Masking under the waterline.

STEP 1

In order to protect your topcoat, mask all surfaces above the waterline. Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique.

A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings.

Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

Common problems with tapes not designed for use with these types of coatings is that they have poor resistance to creep solvents and leave adhesive residue on the surface.

WARNING!

Do not use film or light plastic film in order to hide your surfaces, they have the tendency to stick to the surface. This can leave marks on the paint which cannot be removed.

Do not use plastic sheeting on a surface. Condensation can form under the plastic and cause blistering, bubbles or loss of gloss in the paint finish.

Do not use newsprint or newspapers; these can stain the paint finish.

APPLY GLASS-GUARD 2800 TOPCOAT ABOVE THE WATERLINE

EXECUTION DIAGRAM AND PROCEDURES

DECKS

ABOVE THE WATERLINE

GLASS-GUARD™ 2800 series. High gloss polyurethane

STEP 1

Mask all surfaces under the waterline. Different qualities of masking tape are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings, masking tapes are manufactured in different qualities. The solvents in polyurethane and epoxy coatings require a paper with excellent resistance to solvent penetration. 3M's Scotchblok® Masking Paper is highly recommended.

STEP 2

Your surface is free of all impurities, your masking operation under the waterline is finished, so you can proceed to the preparation and mixing of your GLASS-GUARD™ des 2800 series topcoat, a two-component system with a high gloss level. A semi-gloss system is available GLASS-GUARD™ 2850 series is perfect for hunting and fishing boats, so you need to mix a catalyst.

Three catalysts are available. In order to determine the catalyst that will suit your application in relation to the application and atomization equipment used, we invite you to consult our technical data sheets, or to contact our technical service center. You can choose either the slow catalyst, the 275-59C with a pot life of 6 hours, the regular catalyst, the 275-50C with a pot life of 6 hours and our fast catalyst, the 275-80C with a pot life of 3 hours.

STEP3

Mix 2800 Series Part A and Part B in a 2:1 ratio using a ratio ruler provided by Glass Shield. Using Glass Shield UC-500S™ Thinner, dilute to adjust the viscosity of your polyurethane for 22 to 60 seconds on an EZ-ZAHN viscosity cup no.2. You can also make a volume dilution ranging from 10 to 35% depending on the application technique and type of atomizing equipment selected. Unlike the primer, the GLASS-GUARD™ polyurethane 2800 series system has no induction time, so once your mixture is homogeneous you will be able to test it.

STEP4

Pour your mixture into the appropriate pot for your gun and make the necessary adjustments by consulting and following the instructions of your gun manufacturer. Test and adjust the application on FOAM CORE type panels available in 50 x 76 cm (20 x 30 in.) format to familiarize yourself with the application of polyurethane to obtain a uniform application. If your finish has a texture similar to an orange peel, several factors must be corrected in the spraying process. We therefore invite you to contact our service and technical assistance centre by calling 1 800 361-6652.

STEP5

Apply two coats of GLASS-GUARD™ 2800 series polyurethane to achieve a dry film thickness of 50 to 76 microns (2 to 3 mils). The time required between coats to allow adequate solvent evaporation is 10 to 20 minutes at an ambient temperature of 20˚à 24˚C (68˚à 75˚F). The resulting finish should be perfectly smooth and uniform with a gloss level in relation to the (ASTM D523) standard of 94°+ UV, abrasion and impact resistant for the next 10 to 15 years.

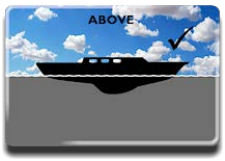
TIPS AND TRICKS!

- ✓ If your topcoat has more than one colour, such as to add decorative stripes. Please note that you will need to take into account covering windows ranging from 10 to 24 hours in relation to the catalyst chosen. For more information, we invite you to contact our service and technical assistance centre at 1 800 361-6652.

- ✓ For the creation of decorative strips, a thin plastic tape such as 3M Fine Line® #218 is recommended. In order to ensure uniform adhesion, push the edges of the tape with a plastic blade and insert a sheet of paper between the blade and the tape. This will facilitate the gliding to obtain well sealed edges, a thin, uniform and crease-free line.

IMPORTANT!

Use only with adequate ventilation with a capacity of 4 to 5 air changes/hour. Maintain a continuous flow of fresh air. Do not breathe vapors, spray mists. Wear a suitable, properly fitting air respirator during and after application unless air quality indicates the presence of vapor and particle levels are below applicable limits. Follow manufacturer's directions for use of respirators. Provide sufficient general and/or local mechanical ventilation to keep exposure below threshold limit values.



Masking above the waterline.

STEP 1

In order to protect your topcoat, mask all surfaces above the waterline. Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique.

A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings.

Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

Common problems with tapes not designed for use with these types of coatings is that they have poor resistance to creep solvents and leave adhesive residue on the surface.

WARNING!

Do not use film or light plastic film in order to hide your surfaces, they have the tendency to stick to the surface. This can leave marks on the paint which cannot be removed.

Do not use plastic sheeting on a surface. Condensation can form under the plastic and cause blistering, bubbles or loss of gloss in the paint finish.

Do not use newsprint or newspapers; these can stain the paint finish.

GS-9020S TO REMOVE ALL SURFACE RESIDUES

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

Two-cloth cleaning technique.

Before proceeding with the application of your anti-fouling layer, your epoxy film must be cleaned in order to remove contaminants, dust or body oils in order to optimize and ensure the quality of your anti-fouling layer.

Dip a cloth in Glass Shield GS 9020S ™ surface cleaning solvent which is a final washing solvent and use this cloth to wet the surface.

Use a second dry cloth to wipe the surface to remove any surface contamination. Work small areas of 4 square feet or less at a time to eliminate evaporation and drying of the solvent before your second cloth wipes it off. Your will get perfect cleanliness. Change your cloths frequently, until the entire surface is free of residue.

IMPORTANT!

Wiping the surface with a single damp cloth only spreads the contaminants. Make sure that the rags used are free of impurities or contaminants. A clean cotton cloth is best.

WARNING!

Do not get in eyes, on skin or on clothing. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent-resistant gloves and boots to avoid contact with the skin. An approved respirator should be used with our products.

APPLICATION OF ANTI-FOULING LAYER MONOGLASS MC - 4250*

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

MONOGLASS™ MC 4250 high gloss. Hygro-reactive polyurethane.

In order to protect our water bodies as required by environmental regulations, MONOGLASS™ is a hard matrix anti-fouling layer containing no biocides or copper. MONOGLASS™ MC 4250 contains resin with a high content of water-insoluble components which confer hardness and high resistance properties. MONOGLASS™ MC 4250 is ideal for fast motorboats, tugs, boats stored in dry ports and those that are stranded during tides as well as for regatta boats looking for more speed. The advantage with MONOGLASS™ MC 4250 is that you will not have to reapply your anti-fouling or antifouling coat every year. A simple sanding with water and you will be ready for the release.

MONOGLASS ™ MC 4250 is well resistant to external agents, abrasion, sand, stranding or transport on a trailer. It is strongly recommended in tidal areas and for large crossings. Strong and durable for several seasons, it is super resistant to sanding and impacts. Advice: avoid dripping during application. The minimum temperature for the application is 10°C or 50°F. You can therefore prepare your boat in the fall for your next season because MONOGLASS™ MC 4250 does not need a subsequent launch and can be applied by brush, roller, air gun, airless and electrostatic.

STEP 1

Hide all the surfaces above the waterline and protect all the parts which should not be painted (probes, anodes, etc.). Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings. Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

STEP 2

MONOGLASS™ MC 4250 is a single component polyurethane requiring no dilution, you can pour your mixture into a suitable jar for your gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your gun. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) Format in order to familiarize yourself with the application of polyurethane and obtain uniform application. If your finish has a similar texture to an orange peel, several factors must be corrected in terms of atomization before application. We therefore invite you to contact our service and technical assistance center by calling 1 800-361-6652.

STEP 3

Apply three to four thin coats to avoid drips until you obtain a dry film with a thickness of 50 to 75 microns (2 to 3 mils). The time required between coats is 20 minutes but as it is a hygro-reactive product, the time between coats varies in relation to the humidity. The higher the humidity, the faster it will dry. Its pot life is 4 to 6 hours.

TIPS AND TRICKS!

- ✓ MONOGLASS™ MC 4250 is a single component product ready for application, further dilution with thinner is not recommended.

IMPORTANT!

Use only with adequate ventilation. Maintain a continuous flow of fresh air. Do not breathe the vapors. Wear suitable air respirator snugly, during and after application, unless air quality demonstrates the presence of steam and that the levels of particles are below applicable limits. Follow the manufacturer's instructions for proper use of a NIOSH/MSHA approved respirator. Provide enough general and/or local mechanical ventilation to keep exposure below threshold limit values.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. A NIOSH/MSHA approved respirator should be used with our products.

APPLICATION OF ANTI-FOULING LAYER AMBER-SHIELD MC - 4509**

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

AMBER-SHIELD™ MC 4509. Hygro-reactive polyurethane.

In order to protect our water bodies as required by environmental regulations, AMBER-SHIELD™ is a hard matrix anti-fouling layer containing no biocides or copper. AMBER-SHIELD™ MC 4509 with a slightly amber hue contains resin with a high content of water-insoluble components which confer hardness and high resistance properties. AMBER-SHIELD™ MC 4590 is ideal for fast motorboats, tugs, boats stored in dry harbors and those stranded during tides as well as for regatta boats looking for more speed. The advantage with AMBER-SHIELD™ MC 4509 is that you will not have to reapply your anti-fouling or antifouling coat every year. A simple sanding with water and you will be ready for the release.

AMBER-SHIELD ™ MC 4509 is well resistant to external agents, abrasion, sand, stranding or transport on a trailer. It is strongly recommended in tidal areas and for large crossings. Strong and durable for several seasons, it is super resistant to sanding and impacts. Advice: avoid dripping during application. The minimum temperature for the application 10 ° C / 50 ° F. You can therefore prepare your boat in the fall for your next season because AMBER-SHIELD ™ MC 4509 does not need a subsequent launch and can be applied by brush, roller, spray gun air, airless and electrostatics.

STEP 1

Hide all the surfaces above the waterline and protect all the parts which should not be painted (probes, anodes, etc.). Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings. Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

STEP 2

AMBER-SHIELD MC 4509is a single component polyurethane requiring no dilution, you can pour your mixture into a suitable jar for your gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your gun. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) Format in order to familiarize yourself with the application of polyurethane and obtain uniform application. If your finish has a similar texture to an orange peel, several factors must be corrected in terms of atomization before application. We therefore invite you to contact our service and technical assistance center by calling 1 800-361-6652.

STEP 3

Apply three to four thin coats to avoid drips until you obtain a dry film with a thickness of 50 to 75 microns (2 to 3 mils). The time required between coats is 20 minutes but as it is a hygro-reactive product, the time between coats varies in relation to the humidity. The higher the humidity, the faster it will dry. Its pot life is 4 to 6 hours.

TIPS AND TRICKS!

- ✓ AMBER-SHIELD™ MC 4509is a single component product ready for application, further dilution with thinner is not recommended.

IMPORTANT!

Use only with adequate ventilation. Maintain a continuous flow of fresh air. Do not breathe the vapors. Wear suitable air respirator snugly, during and after application, unless air quality demonstrates the presence of steam and that the levels of particles are below applicable limits. Follow the manufacturer's instructions for proper use of a NIOSH/MSHA approved respirator. Provide enough general and/or local mechanical ventilation to keep exposure below threshold limit values.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. A NIOSH/MSHA approved respirator should be used with our products.

APPLICATION OF COPPER OXIDE BASED ANTI-FOULING LAYER***

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

Anti-fouling paints are intended to protect the hull of boats against soiling. Having an impact on the environment, they capture the attention of boaters and nautical clubs and associations.

Between the need to protect the hull and the environmental impact, these active products must be viewed according to a risk/benefit analysis linked to the uses of boaters.

After a few minutes in the water all the hulls undergo a bacteriological attack. These bacteria will accumulate, after about a week, this bacteriological attack will form a substrate favorable to the appearance and development of the first shells and algae.

A clean hull is therefore first and foremost a safety story. Algae and shells generate a drag coefficient destabilizing the maneuverability of the boat. On merchant ships, it has been measured that the coefficient of drag generated by a dirty hull can increase by 30% to 80%. Antifouling paints are also imperative to improve sliding and therefore reduce fuel consumption. They also help prevent early engine wear. Finally, it is an environmental obligation to avoid the dispersion of invasive species in the different ecosystems crossed by boats.

A variety of anti-fouling paints are available on the market. Before making your choice, we recommend that you first take note of the environmental regulationsin relation to inland waterways.

To find out if your possible selection is compatible with our products and to know the application method, refer to our support and technical assistance center at 1-800-361-6652

Assessment of the necessary corrective measures.

Unfortunately, this kind of situation is more common than we think, even if you have taken all the precautions, this kind of situation is inevitable, especially if you work in an uncontrolled environment.

As your epoxy coating is characterized by a gloss level of approximately 60°, it is much easier for you to detect certain anomalies immediately, than after having applied your finishing coat.

Have you noticed certain anomalies in your epoxy layer, such as a straightness problem, cotton foam, cracks or a similar texture to an orange peel? It will be easy for you to correct the problem according to the rules of the art.

Take photos and list the fixes to be made.

Surface correction, an easy task.

You have noted certain anomalies, correct the anomalies according to the rules of the art. Use a nautical grade sealant such as 3M part number 051131-46004. Refer to the guidelines for drying times before proceeding to sanding.

Block sanding: block type sanding is used for fairing. This type of sanding is done by hand using a flexible 3M type nautical sanding board, part number 83978.

or with an electric orbital sander PORTER-CABLE 7346, to level the straightness of your surface.

The deep areas will be darker, and the upper areas will become lighter after sanding. The aim of this sanding operation is to standardize the straightness of your surface and is carried out on a horizontal plane, therefore from left to right. Never vertical from top to bottom.

We recommend using a 320 or 400 grade sanding paper so that the primer is uniform.

Using a workshop vacuum cleaner, remove any dust or sanding residue. The surface should be thoroughly cleaned of any dust before the primer is applied with the Glass Shield GS 9020S final surface cleaning solvent.

Once the corrections have been made and your surface is cleaned and free of any sanding residue, you will reapply a layer of EP-GUARD 1500 series epoxy primer to obtain a dry film of 25 to 40 microns (1 to 1, 5 mils.) To seal your primer and allow to dry for 8 to 12 hours.

GS-9020S TO REMOVE ALL SURFACE RESIDUES

EXECUTION DIAGRAM AND PROCEDURES
DECKS

Two-cloth cleaning technique.

Before proceeding to the application of your topcoat, your epoxy film must be cleaned in order to remove all traces of contaminant, dust or body oils in order to optimize and ensure the quality of your finish.

Dip a cloth in Glass Shield GS 9020S™ surface cleaning solvent which is a final washing solvent and use this cloth to wet the surface.

Use a second dry cloth to wipe the surface to remove any surface contamination. Work small areas of 4 square feet or less at a time to eliminate evaporation and drying of the solvent before your second cloth wipes it off. Your will get perfect cleanliness. Change your cloths frequently, until the entire surface is free of residue.

IMPORTANT!

Wiping the surface with a single damp cloth only spreads the contaminants. Make sure that the rags used are free of impurities or contaminants. A clean cotton cloth is best.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. An approved respirator should be used with our products.

EXECUTION DIAGRAM AND PROCEDURES
COATED ALUMINUM SUBSTRATE

REFINITION OF ALUMINUM WITH COATING

SANDING OF OLD COATING ON ALL SURFACES

TREAT ALUMINUM SURFACES WITH A.G.A. 2000

VINYL-SHIELD 7342 PRIMER APPLICATION ON EXPOSED ALUMINUM PARTS

1500 SERIES EP-GUARD EPOXY APPLICATION 1553 WHITE OR 1552 GRAY ON ALL SURFACES

CAREFUL INSPECTION OF EPOXY COATING

RESULT : UNIFORM AND PERFECT APPLICATION

GS-9020S TO REMOVE ALL SURFACE RESIDUES

MASKING

APPLY GLASS-GUARD 2800 TOPCOAT ABOVE THE WATERLINE

ABOVE THE WATERLINE

RESULT : APPARENT FAILURE OR DEFECTS

CORRECTION OF SURFACE DEFECTS

1500 SERIES EP-GUARD EPOXY APPLICATION 1503 RED OR 1559 BLACK ON ALL SURFACES

CAREFUL INSPECTION OF EPOXY COATING

RESULT : UNIFORM AND PERFECT APPLICATION

GS-9020S TO REMOVE ALL SURFACE RESIDUES

MASKING

APPLICATION OF ANTI-FOULING LAYER MONOGLASS MC - 4250*

APPLICATION OF ANTI-FOULING LAYER AMBER-SHIELD MC - 4509**

APPLICATION OF COPPER OXIDE BASED ANTI-FOULING LAYER***

* Where isocyanates are permitted.
** Where isocyanates are prohibited.
*** Where biocides are allowed.

UNDER THE WATERLINE

EXECUTION DIAGRAM AND PROCEDURES
COATED ALUMINUM SUBSTRATE

MANUAL SANDING

In order to remove the old coating, we recommend using a grade 120 sanding paper a block type sanding: Block type sanding is used for fairing. This type of sanding is done by hand using a flexible 3M type nautical sanding board part number 83978 or even with an electric sander to level the straightness of your surface. The deep areas will be darker and the upper areas will become lighter after sanding. The aim of this sanding operation is to standardize the straightness of your surface.

SANDBLAST

Ideally, if your budget permits, have a professional remove the old coating or, if you prefer, sandblast the old paint to SSPC-SP6 standards to get a surface profile of 25 to 40 microns (1.0 to 1.5 mils).

TREAT ALUMINUM SURFACES WITH A.G.A. 2000

EXECUTION DIAGRAM AND PROCEDURES
COATED ALUMINUM SUBSTRATE

Aluminum conditioner.

AGA-2000™is a one-compound product that does not require any prior mixing. The conditioner contains phosphoric acid as well as a biodegradable surfacer allowing the emulsification of organic contaminants and the conditioning of metallic surfaces, thus allocating the promotion of adhesion and resistance to corrosion.

AGA-2000™can be applied using a sprayer (garden type) or manually using a brush or a clean cloth. Apply the solution for a period of 5 to 10 minutes, always keep the surface wet during this period, then rinse the surface with water and wipe with a clean, dry and oil-free cotton cloth to remove any whitish residue. Wait at least half an hour before applying the primer.

IMPORTANT!

Do not use a spray gun specific to the application of paint, because the seals will be badly damaged, reducing the level of performance of this one as well as the quality of your finish.

WARNING!

Do not get in eyes, on skin or on clothing. Use acid-resistant safety glasses with splash protection. We recommend that you wear a coveralls, solvent proof gloves and boots to avoid contact with the skin. An approved respirator is optional but highly recommended with this product.

VINYL-SHIELD 7342
VINYL PRIMER
APPLICATION

EXECUTION DIAGRAM AND PROCEDURES
COATED ALUMINUM SUBSTRATE

Vinyl primer VINYL-SHIELD™ 7342 for aluminum.

STEP 1

Masking: different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings. Masking papers are produced in different qualities. The solvents in the polyurethane and epoxy coatings require a paper having excellent resistance to penetration of solvents. 3M's Scotchblok® masking paper is highly recommended.

STEP2

VINYL-SHIELD™ 7342 (part A) is a two-component vinyl primer with a ratio of 1:1 per volume. Slowly add its catalyst to part B 7343C in order to obtain a homogeneous mixture, it is recommended tomechanically mix part A and B for between 5 and 10 minutes. Diluting the product with a thinner is not necessary.

STEP3

VINYL-SHIELD™ 7342 vinyl primer must be applied with an air gun. Pour your mixture into the suitable for your gun and make the necessary adjustments by consulting and following the instructions from the manufacturer of your spray equipment. Test and adjust the spray on a FOAM CORE type board available in format 50x76 cm (20x30 in.) to become familiar with the application of the vinyl primer and obtain a uniform application.

STEP 4

Your tests are conclusive, your adjustments are perfect, your test application is uniform and without orange peel, apply a first coat to obtain a dry film with a thickness varying between 7.5 and 17 microns (0.3 to 0.7 mils). Allow the film toevaporate between 20 to 30 minutes after application. Using a digital micrometer, check the thickness of your dry film. The pot life of the mixed vinyl primer is approximately 4 to 5 hours at an ambient temperature of 25ºC (77ºF), if your dry film does not have the minimum thickness required (7.5 microns or 0.3 mils), repeat step 3.

STEP5

When your application is uniform, with no orange peel and your dry film thickness is ranging between 7.5 and 17 microns (0.3 to 0.7 mils). You have 60 minutes to clean your equipment using our GS T9800S cleaning solvent and begin the preparation and application of your EP-GUARD 1500 series epoxy primer. In a controlled environment, free of contamination, the time maximum recovery could be 4 hours.

TIPS AND TRICKS!

- ✓ When applying your vinyl primer, keep your spray gun at a distance varying from 8 to 10 in. and always perpendicular to your surface in order to obtain a uniform application.

- ✓ In order to measure the thickness of your dry film, a range of digital micrometers are available on the market offering a degree of precision with a price range of less than CAD $100. A very interesting model is the BSIDE CCT02 offering three units of measurement with an accuracy of ± 2% + 0.02 mm, suitable for ferrous and non-ferrous substrates such as aluminum at a price of approximately CAD $70.

IMPORTANT!

Use only with adequate ventilation. Maintain a continuous flow of fresh air. Do not breathe the vapors. Wear suitable air respirator snugly, during and after application, unless air quality demonstrates the presence of steam and that the levels of particles are below applicable limits. Follow the manufacturer's instructions for the respirator. Provide enough general and/or local mechanical ventilation to keep exposure below threshold limit values.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. An approved respirator should be used with our products.

EXECUTION DIAGRAM AND PROCEDURES

COATED ALUMINUM SUBSTRATE

ABOVE THE WATERLINE

EP-GUARD™ 1500 SERIES epoxy primer.

STEP1

When your surface is free of impurities, you can proceed with the preparation and mixing of the epoxy primer EP-GUARD™ Series 1500. This is a two-component system, so you must add the catalyst.

Two catalysts are available. To determine the catalyst that will suit your application, please refer to our technical data sheets, or contact our technical service. You can opt either for the normal catalyst, the 161-49C comprising an induction time of 30 minutes and a pot life of 6 hours, or the faster 161-80C, comprising no induction time and a 3-hour pot life.

Mix part A and part B of the 1500 series in a 3:1 ratio using a ratio rule provided by Glass Shield. With the Glass Shield GS 162-11S thinner, dilute in order to adjust the viscosity of your epoxy from 22 to 38 seconds on an EZ-ZAHN no.2 viscosity cup. You can also dilute by volume varying from 10 to 35% depending on the application technique and the type of spraying equipment selected.

STEP 2

Pour your mixture into the suitable recipient for your air gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your spray equipment. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) format in order to familiarize yourself with the application of the epoxy primer and to obtain uniform application.

STEP 3

Your tests are conclusive, your adjustments are perfect, your test application is uniform and without orange peel, apply two layers to obtain a dry film with a thickness varying between 76 and 127 microns (3.0 to 5.0 mils). Allow the film to evaporate between 10 to 15 minutes after the application of the first layer and proceed to the application of the second layer and allow to dry for 8 to 12 hours.

STEP 4

You can now move on to cleaning your equipment using GS T9800S™ cleaning solvent.

1500 SERIES EP-GUARD
EPOXY APPLICATION
1503 RED OR 1559 BLACK
ON ALL SURFACES

EXECUTION DIAGRAM AND PROCEDURES

COATED ALUMINUM SUBSTRATE

UNDER THE WATERLINE

EP-GUARD™ 1500 SERIES epoxy primer.

STEP 1

When your surface is free of impurities, you can proceed with the preparation and mixing of the epoxy primer EP-GUARD™ Series 1500. This is a two-component system, so you must add the catalyst.

Two catalysts are available. To determine the catalyst that will suit your application, please refer to our technical data sheets, or contact our technical service. You can opt either for the normal catalyst, the 161-49C comprising an induction time of 30 minutes and a pot life of 6 hours, or the faster 161-80C, comprising no induction time and a 3-hour pot life.

Mix part A and part B of the 1500 series in a 3:1 ratio using a ratio rule provided by Glass Shield. With the Glass Shield GS 162-11S thinner, dilute in order to adjust the viscosity of your epoxy from 22 to 38 seconds on an EZ-ZAHN no.2 viscosity cup. You can also dilute by volume varying from 10 to 35% depending on the application technique and the type of spraying equipment selected.

STEP 2

Pour your mixture into the suitable recipient for your air gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your spray equipment. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) format in order to familiarize yourself with the application of the epoxy primer and to obtain uniform application.

STEP 3

Your tests are conclusive, your adjustments are perfect, your test application is uniform and without orange peel, apply two layers to obtain a dry film with a thickness varying between 76 and 127 microns (3.0 to 5.0 mils). Allow the film to evaporate between 10 to 15 minutes after the application of the first layer and proceed to the application of the second layer and allow to dry for 8 to 12 hours.

STEP 4

You can now move on to cleaning your equipment using GS T9800S™ cleaning solvent.

CAREFUL INSPECTION OF EPOXY COATING

EXECUTION DIAGRAM AND PROCEDURES
COATED ALUMINUM SUBSTRATE

EP-GUARD™ 1500 series epoxy primer inspection.

STEP 1

Using cotton gloves, carry out a complete inspection of your primer to check if it has any anomalies such as: dust, lint, drips, micro cracks or orange peel texture

STEP 2

Using a digital micrometer, check the thickness of your dry film in several places to make sure that your dry film meets the application standards. Your dry film should have a thickness varying between 76 and 127 microns (3.0 to 5.0 mils). To make sure that your epoxy film corresponds to the recommended thickness, don't forget to deduct the thickness of your vinyl primer varying between 7.5 and 17 microns (0.3 to 0.7 mils).

You have completed your inspection, go to the corresponding step in relation to your results.

TIPS AND TRICKS!

- ✓ During your inspection, you must not touch your epoxy film with your bare hands, as your fingers will leave traces of oils on the epoxy film and will affect the adhesion of your topcoat. Wear cotton gloves.

RESULT :
UNIFORM AND PERFECT APPLICATION

Congratulations!

The application of your EP-GUARD™ 1500 series epoxy film is impeccable! With our EP-GUARD™ 1500 series epoxy, you now have a 30-day overlay window without having to sand the surface before applying your topcoat. This advantage allows you to save time while eliminating a tedious operation.

In addition, our 1500 series EP-GUARD™ epoxy not only gives you a waterproof film, but a film with high resistance to abrasion, impact and common chemicals.

You can now proceed to the next step.

GS-9020S TO REMOVE ALL SURFACE RESIDUES

EXECUTION DIAGRAM AND PROCEDURES

DECKS

ABOVE THE WATERLINE

Two-cloth cleaning technique.

Before proceeding to the application of your topcoat, your epoxy film must be cleaned in order to remove all traces of contaminant, dust or body oils in order to optimize and ensure the quality of your finish.

Dip a cloth in Glass Shield GS 9020S™ surface cleaning solvent which is a final washing solvent and use this cloth to wet the surface.

Use a second dry cloth to wipe the surface to remove any surface contamination. Work small areas of 4 square feet or less at a time to eliminate evaporation and drying of the solvent before your second cloth wipes it off. Your will get perfect cleanliness. Change your cloths frequently, until the entire surface is free of residue.

IMPORTANT!

Wiping the surface with a single damp cloth only spreads the contaminants. Make sure that the rags used are free of impurities or contaminants. A clean cotton cloth is best.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. An approved respirator should be used with our products.

Masking under the waterline.

STEP 1

In order to protect your topcoat, mask all surfaces above the waterline. Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique.

A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings.

Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

Common problems with tapes not designed for use with these types of coatings is that they have poor resistance to creep solvents and leave adhesive residue on the surface.

WARNING!

Do not use film or light plastic film in order to hide your surfaces, they have the tendency to stick to the surface. This can leave marks on the paint which cannot be removed.

Do not use plastic sheeting on a surface. Condensation can form under the plastic and cause blistering, bubbles or loss of gloss in the paint finish.

Do not use newsprint or newspapers; these can stain the paint finish.

APPLY GLASS-GUARD 2800 TOPCOAT ABOVE THE WATERLINE

EXECUTION DIAGRAM AND PROCEDURES

DECKS

ABOVE THE WATERLINE

GLASS-GUARD™ 2800 series. High gloss polyurethane

STEP 1

Mask all surfaces under the waterline. Different qualities of masking tape are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings, masking tapes are manufactured in different qualities. The solvents in polyurethane and epoxy coatings require a paper with excellent resistance to solvent penetration. 3M's Scotchblok® Masking Paper is highly recommended.

STEP 2

Your surface is free of all impurities, your masking operation under the waterline is finished, so you can proceed to the preparation and mixing of your GLASS-GUARD™ des 2800 series topcoat, a two-component system with a high gloss level. A semi-gloss system is available GLASS-GUARD™ 2850 series is perfect for hunting and fishing boats, so you need to mix a catalyst.

Three catalysts are available. In order to determine the catalyst that will suit your application in relation to the application and atomization equipment used, we invite you to consult our technical data sheets, or to contact our technical service center. You can choose either the slow catalyst, the 275-59C with a pot life of 6 hours, the regular catalyst, the 275-50C with a pot life of 6 hours and our fast catalyst, the 275-80C with a pot life of 3 hours.

STEP3

Mix 2800 Series Part A and Part B in a 2:1 ratio using a ratio ruler provided by Glass Shield. Using Glass Shield UC-500S™ Thinner, dilute to adjust the viscosity of your polyurethane for 22 to 60 seconds on an EZ-ZAHN viscosity cup no.2. You can also make a volume dilution ranging from 10 to 35% depending on the application technique and type of atomizing equipment selected. Unlike the primer, the GLASS-GUARD™ polyurethane 2800 series system has no induction time, so once your mixture is homogeneous you will be able to test it.

STEP4

Pour your mixture into the appropriate pot for your gun and make the necessary adjustments by consulting and following the instructions of your gun manufacturer. Test and adjust the application on FOAM CORE type panels available in 50 x 76 cm (20 x 30 in.) format to familiarize yourself with the application of polyurethane to obtain a uniform application. If your finish has a texture similar to an orange peel, several factors must be corrected in the spraying process. We therefore invite you to contact our service and technical assistance centre by calling 1 800 361-6652.

STEP5

Apply two coats of GLASS-GUARD™ 2800 series polyurethane to achieve a dry film thickness of 50 to 76 microns (2 to 3 mils). The time required between coats to allow adequate solvent evaporation is 10 to 20 minutes at an ambient temperature of 20˚à 24˚C (68˚à 75˚F). The resulting finish should be perfectly smooth and uniform with a gloss level in relation to the (ASTM D523) standard of 94°+ UV, abrasion and impact resistant for the next 10 to 15 years.

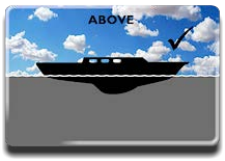
TIPS AND TRICKS!

- ✓ If your topcoat has more than one colour, such as to add decorative stripes. Please note that you will need to take into account covering windows ranging from 10 to 24 hours in relation to the catalyst chosen. For more information, we invite you to contact our service and technical assistance centre at 1 800 361-6652.

- ✓ For the creation of decorative strips, a thin plastic tape such as 3M Fine Line® #218 is recommended. In order to ensure uniform adhesion, push the edges of the tape with a plastic blade and insert a sheet of paper between the blade and the tape. This will facilitate the gliding to obtain well sealed edges, a thin, uniform and crease-free line.

IMPORTANT!

Use only with adequate ventilation with a capacity of 4 to 5 air changes/hour. Maintain a continuous flow of fresh air. Do not breathe vapors, spray mists. Wear a suitable, properly fitting air respirator during and after application unless air quality indicates the presence of vapor and particle levels are below applicable limits. Follow manufacturer's directions for use of respirators. Provide sufficient general and/or local mechanical ventilation to keep exposure below threshold limit values.



Masking above the waterline.

STEP 1

In order to protect your topcoat, mask all surfaces above the waterline. Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique.

A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings.

Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

Common problems with tapes not designed for use with these types of coatings is that they have poor resistance to creep solvents and leave adhesive residue on the surface.

WARNING!

Do not use film or light plastic film in order to hide your surfaces, they have the tendency to stick to the surface. This can leave marks on the paint which cannot be removed.

Do not use plastic sheeting on a surface. Condensation can form under the plastic and cause blistering, bubbles or loss of gloss in the paint finish.

Do not use newsprint or newspapers; these can stain the paint finish.

GS-9020S TO REMOVE ALL SURFACE RESIDUES

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

Two-cloth cleaning technique.

Before proceeding with the application of your anti-fouling layer, your epoxy film must be cleaned in order to remove contaminants, dust or body oils in order to optimize and ensure the quality of your anti-fouling layer.

Dip a cloth in Glass Shield GS 9020S ™ surface cleaning solvent which is a final washing solvent and use this cloth to wet the surface.

Use a second dry cloth to wipe the surface to remove any surface contamination. Work small areas of 4 square feet or less at a time to eliminate evaporation and drying of the solvent before your second cloth wipes it off. Your will get perfect cleanliness. Change your cloths frequently, until the entire surface is free of residue.

IMPORTANT!

Wiping the surface with a single damp cloth only spreads the contaminants. Make sure that the rags used are free of impurities or contaminants. A clean cotton cloth is best.

WARNING!

Do not get in eyes, on skin or on clothing. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent-resistant gloves and boots to avoid contact with the skin. An approved respirator should be used with our products.

APPLICATION OF ANTI-FOULING LAYER MONOGLASS MC - 4250*

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

MONOGLASS™ MC 4250 high gloss Hygro-reactive polyurethane.

In order to protect our water bodies as required by environmental regulations, MONOGLASS™ is a hard matrix anti-fouling layer containing no biocides or copper. MONOGLASS™ MC 4250 contains resin with a high content of water-insoluble components which confer hardness and high resistance properties. MONOGLASS™ MC 4250 is ideal for fast motorboats, tugs, boats stored in dry ports and those that are stranded during tides as well as for regatta boats looking for more speed. The advantage with MONOGLASS™ MC 4250 is that you will not have to reapply your anti-fouling or antifouling coat every year. A simple sanding with water and you will be ready for the release.

MONOGLASS ™ MC 4250 is well resistant to external agents, abrasion, sand, stranding or transport on a trailer. It is strongly recommended in tidal areas and for large crossings. Strong and durable for several seasons, it is super resistant to sanding and impacts. Advice: avoid dripping during application. The minimum temperature for the application is 10°C or 50°F. You can therefore prepare your boat in the fall for your next season because MONOGLASS™ MC 4250 does not need a subsequent launch and can be applied by brush, roller, air gun, airless and electrostatic.

STEP 1

Hide all the surfaces above the waterline and protect all the parts which should not be painted (probes, anodes, etc.). Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings. Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

STEP 2

MONOGLASS™ MC 4250 is a single component polyurethane requiring no dilution, you can pour your mixture into a suitable jar for your gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your gun. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) Format in order to familiarize yourself with the application of polyurethane and obtain uniform application. If your finish has a similar texture to an orange peel, several factors must be corrected in terms of atomization before application. We therefore invite you to contact our service and technical assistance center by calling 1 800-361-6652.

STEP 3

Apply three to four thin coats to avoid drips until you obtain a dry film with a thickness of 50 to 75 microns (2 to 3 mils). The time required between coats is 20 minutes but as it is a hygro-reactive product, the time between coats varies in relation to the humidity. The higher the humidity, the faster it will dry. Its pot life is 4 to 6 hours.

TIPS AND TRICKS!

- ✓ MONOGLASS™ MC 4250 is a single component product ready for application, further dilution with thinner is not recommended.

IMPORTANT!

Use only with adequate ventilation. Maintain a continuous flow of fresh air. Do not breathe the vapors. Wear suitable air respirator snugly, during and after application, unless air quality demonstrates the presence of steam and that the levels of particles are below applicable limits. Follow the manufacturer's instructions for proper use of a NIOSH/MSHA approved respirator. Provide enough general and/or local mechanical ventilation to keep exposure below threshold limit values.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. A NIOSH/MSHA approved respirator should be used with our products.

APPLICATION OF ANTI-FOULING LAYER AMBER-SHIELD MC - 4509**

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

AMBER-SHIELD™ MC 4509.
Hygro-reactive polyurethane.

In order to protect our water bodies as required by environmental regulations, AMBER-SHIELD™ is a hard matrix anti-fouling layer containing no biocides or copper. AMBER-SHIELD™ MC 4509 with a slightly amber hue contains resin with a high content of water-insoluble components which confer hardness and high resistance properties. AMBER-SHIELD™ MC 4590 is ideal for fast motorboats, tugs, boats stored in dry harbors and those stranded during tides as well as for regatta boats looking for more speed. The advantage with AMBER-SHIELD™ MC 4509 is that you will not have to reapply your anti-fouling or antifouling coat every year. A simple sanding with water and you will be ready for the release.

AMBER-SHIELD ™ MC 4509 is well resistant to external agents, abrasion, sand, stranding or transport on a trailer. It is strongly recommended in tidal areas and for large crossings. Strong and durable for several seasons, it is super resistant to sanding and impacts. Advice: avoid dripping during application. The minimum temperature for the application 10 ° C / 50 ° F. You can therefore prepare your boat in the fall for your next season because AMBER-SHIELD ™ MC 4509 does not need a subsequent launch and can be applied by brush, roller, spray gun air, airless and electrostatics.

STEP 1

Hide all the surfaces above the waterline and protect all the parts which should not be painted (probes, anodes, etc.). Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings. Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

STEP 2

AMBER-SHIELD MC 4509 is a single component polyurethane requiring no dilution, you can pour your mixture into a suitable jar for your gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your gun. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) Format in order to familiarize yourself with the application of polyurethane and obtain uniform application. If your finish has a similar texture to an orange peel, several factors must be corrected in terms of atomization before application. We therefore invite you to contact our service and technical assistance center by calling 1 800-361-6652.

STEP 3

Apply three to four thin coats to avoid drips until you obtain a dry film with a thickness of 50 to 75 microns (2 to 3 mils). The time required between coats is 20 minutes but as it is a hygro-reactive product, the time between coats varies in relation to the humidity. The higher the humidity, the faster it will dry. Its pot life is 4 to 6 hours.

TIPS AND TRICKS!

- ✓ AMBER-SHIELD™ MC 4509is a single component product ready for application, further dilution with thinner is not recommended.

IMPORTANT!

Use only with adequate ventilation. Maintain a continuous flow of fresh air. Do not breathe the vapors. Wear suitable air respirator snugly, during and after application, unless air quality demonstrates the presence of steam and that the levels of particles are below applicable limits. Follow the manufacturer's instructions for proper use of a NIOSH/MSHA approved respirator. Provide enough general and/or local mechanical ventilation to keep exposure below threshold limit values.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. A NIOSH/MSHA approved respirator should be used with our products.

APPLICATION OF COPPER OXIDE BASED ANTI-FOULING LAYER***

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

Anti-fouling paints are intended to protect the hull of boats against soiling. Having an impact on the environment, they capture the attention of boaters and nautical clubs and associations.

Between the need to protect the hull and the environmental impact, these active products must be viewed according to a risk/benefit analysis linked to the uses of boaters.

After a few minutes in the water all the hulls undergo a bacteriological attack. These bacteria will accumulate, after about a week, this bacteriological attack will form a substrate favorable to the appearance and development of the first shells and algae.

A clean hull is therefore first and foremost a safety story. Algae and shells generate a drag coefficient destabilizing the maneuverability of the boat. On merchant ships, it has been measured that the coefficient of drag generated by a dirty hull can increase by 30% to 80%. Antifouling paints are also imperative to improve sliding and therefore reduce fuel consumption. They also help prevent early engine wear. Finally, it is an environmental obligation to avoid the dispersion of invasive species in the different ecosystems crossed by boats.

A variety of anti-fouling paints are available on the market. Before making your choice, we recommend that you first take note of the environmental regulationsin relation to inland waterways.

To find out if your possible selection is compatible with our products and to know the application method, refer to our support and technical assistance center at 1-800-361-6652

Assessment of the necessary corrective measures.

Unfortunately, this kind of situation is more common than we think, even if you have taken all the precautions, this kind of situation is inevitable, especially if you work in an uncontrolled environment.

As your epoxy coating is characterized by a gloss level of approximately 60°, it is much easier for you to detect certain anomalies immediately, than after having applied your finishing coat.

Have you noticed certain anomalies in your epoxy layer, such as a straightness problem, cotton foam, cracks or a similar texture to an orange peel? It will be easy for you to correct the problem according to the rules of the art.

Take photos and list the fixes to be made.

Surface correction, an easy task.

You have noted certain anomalies, correct the anomalies according to the rules of the art. Use a nautical grade sealant such as 3M part number 051131-46004. Refer to the guidelines for drying times before proceeding to sanding.

Block sanding: block type sanding is used for fairing. This type of sanding is done by hand using a flexible 3M type nautical sanding board, part number 83978.

or with an electric orbital sander PORTER-CABLE 7346, to level the straightness of your surface.

The deep areas will be darker, and the upper areas will become lighter after sanding. The aim of this sanding operation is to standardize the straightness of your surface and is carried out on a horizontal plane, therefore from left to right. Never vertical from top to bottom.

We recommend using a 320 or 400 grade sanding paper so that the primer is uniform.

Using a workshop vacuum cleaner, remove any dust or sanding residue. The surface should be thoroughly cleaned of any dust before the primer is applied with the Glass Shield GS 9020S final surface cleaning solvent.

Once the corrections have been made and your surface is cleaned and free of any sanding residue, you will reapply a layer of EP-GUARD 1500 series epoxy primer to obtain a dry film of 25 to 40 microns (1 to 1, 5 mils.) To seal your primer and allow to dry for 8 to 12 hours.

GS-9020S TO REMOVE ALL SURFACE RESIDUES

Two-cloth cleaning technique.

Before proceeding to the application of your topcoat, your epoxy film must be cleaned in order to remove all traces of contaminant, dust or body oils in order to optimize and ensure the quality of your finish.

Dip a cloth in Glass Shield GS 9020S™ surface cleaning solvent which is a final washing solvent and use this cloth to wet the surface.

Use a second dry cloth to wipe the surface to remove any surface contamination. Work small areas of 4 square feet or less at a time to eliminate evaporation and drying of the solvent before your second cloth wipes it off. Your will get perfect cleanliness. Change your cloths frequently, until the entire surface is free of residue.

IMPORTANT!

Wiping the surface with a single damp cloth only spreads the contaminants. Make sure that the rags used are free of impurities or contaminants. A clean cotton cloth is best.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. An approved respirator should be used with our products.

EXECUTION DIAGRAM AND PROCEDURES
FIBERGLASS SUBSTRATE

FIBERGLASS

FIBERGLASS INSPECTION
- DELAMINATION
- EFFICIENCY
- CRACKS
- OSMOTIC BLISTERING

TEST OF COMPATIBILITY AND SURFACE SANDING

SURFACE SANDING AND CLEANING

1500 SERIES EP-GUARD EPOXY APPLICATION 1553 WHITE OR 1552 GRAY ON ALL SURFACES

CAREFUL INSPECTION OF EPOXY COATING

RESULT : UNIFORM AND PERFECT APPLICATION

GS-9020S TO REMOVE ALL SURFACE RESIDUES

MASKING

APPLY GLASS-GUARD 2800 TOPCOAT ABOVE THE WATERLINE

ABOVE THE WATERLINE

RESULT APPARENT FAILURE OR DEFECTS

CORRECTION OF SURFACE DEFECTS

1500 SERIES EP-GUARD EPOXY APPLICATION 1503 RED OR 1559 BLACK ON ALL SURFACES

CAREFUL INSPECTION OF EPOXY COATING

RESULT : UNIFORM AND PERFECT APPLICATION

GS-9020S TO REMOVE ALL SURFACE RESIDUES

MASKING

APPLICATION OF ANTI-FOULING LAYER MONOGLASS MC - 4250*

APPLICATION OF ANTI-FOULING LAYER AMBER-SHIELD MC - 4509**

APPLICATION OF COPPER OXIDE BASED ANTI-FOULING LAYER***

* Where isocyanates are permitted.
** Where isocyanates are prohibited.
*** Where biocides are allowed.

UNDER THE WATERLINE

FIBERGLASS INSPECTION

EXECUTION DIAGRAM AND PROCEDURES
FIBERGLASS SUBSTRATE

Fiberglass substrates may indicate the presence of cavities in the fiberglass or osmotic blisters. These conditions must be repaired before applying new coatings.

There are many situations where repainting is required but it is not advantageous to remove all the old paint. However, the cost of labor and materials for sand and paint is significant and there is no gain in repainting a finish that is severely deteriorated or chemically incompatible with Glass Shield systems.

When considering such a project, carefully evaluate the surface and condition of the current topcoat and coatings down to the substrate. Old paint that flakes a lot, is heavily chalky, blistered or cracked must be completely removed.

During the inspection, take pictures of any areas where the integrity of the fiberglass requires major repairs such as delamination, osmotic blisters, cracks and others. Make a list of the work that needs to be done to correct the problem according to the rules of the trade.

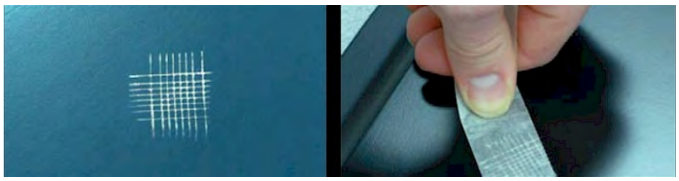
After the initial evaluation, perform the following three tests, in the order indicated, to determine the adhesion of the old system and its chemical compatibility with Glass Shield systems.

Performing these tests in more than one location will add validity to the results. Take notes, collect any paint chips that are crumbling, and take photos for the working file. If any of the following compatibility tests fail, the old coatings should be removed to a good coating layer or to the substrate.

Please take these tests and trials seriously as new epoxy-polyurethane systems may fail due to the instability of the underlying coatings and sealants. Although the tests are not infallible, if strictly followed, they can be very accurate. Diligence in performing the tests can save costly man-hours and wasted materials.

Assuming that the existing paint system passes the adhesion and compatibility tests, the paint refurbishment would include the following :

- Surface inspection
- Removal of coatings that fail adhesion and compatibility tests and trials
- Repair of surface or substrate defects
- Full-surface primer application
- Application of a 2800 series Glass Shield topcoat (above the waterline).



COMPATIBILITY AND ADHESION TESTING OF COATINGS

Test 1: Adhesion of cross-hatching (see diagram above) Select the test area(s) on the surface to be painted. Clean and degrease this area thoroughly.

With a sharp blade, cut 6 lines vertically and 6 lines horizontally to obtain a box of 25 squares. The cuts must be deep enough to reach the substrate. On thick fairing systems, this test may need to be performed on several different layers. Apply 3M Scotch Brand Filament Tape #610, #895 or #898 to the plotted area, making sure the tape is well adhered to the test surface. Do not use masking tape.

Pull the ribbon parallel to the surface with a sharp stroke. Pulling the ribbon straight up will not produce any results. Examine the test surface. If a square of the old coating in the plotted area is removed, the adhesion has failed. All failed coatings must be removed.

Test 2: Resistance to solvents. Saturate a cotton ball or small cloth pad with the GS T9800S from Glass Shield.

Attach the solvent-saturated ball to the surface of the plotted area with adhesive tape for 30 minutes. After 30 minutes, remove the cotton wool. If the solvent has dissolved or strongly softened the old coating, it is incompatible and must be removed. If the marked area has remained intact, allow a recovery period of 15 minutes and repeat all steps of the test and test 1 again. If square areas are removed, all defective layers must be removed.

Test 3: Coating Compatibility If the old coating is still intact after test one and test two, perform test three. Lightly sand a small test area with 320 grit paper. Thoroughly clean the sanded areas with Glass Shield GS 9020S Final Wash Solvent using clean cloths.

Paint a small portion of the surface with our 2800 series finish paint. Do not use masking tape on the edges of the test application as the paint edges created by the tape will print and be visible in the finish. Allow the repainted area to dry and cure for 24 hours at temperatures above 77˚F (25˚C).

After allowing the area to dry and cure, check the adhesion of the interlayer with test 1 - Cross-Hatch Adhesion Test. If there is no lifting, wrinkling or loss of adhesion caused by this cross-hatching test, the Glass Shield systems are compatible and surface preparation can begin.

SURFACE PREPARATION AND APPLICATION.

STEP 1

In order to remove all soluble materials, start by doing a high pressure wash.

STEP 2

Remember! Clean before sanding. Sanding often melts grease, wax and oil into the surface, making it impossible to achieve a clean surface.

Soak a cloth in Glass Shield GS 9020S surface cleaning solvent and use this cloth to wet the surface. Use a second dry cloth to wipe the surface to remove any surface contamination. Work small areas of 4 square feet or less at a time to eliminate evaporation and drying of the solvent before your second cloth wipes it. Your will get a perfect clean. Change your cloths frequently until the entire surface is free of residue. After this operation you will be able to move on to the next step, sanding.

STEP 3

After cleaning, if your Gelcoat or Fiberglass is sound and free of any defects such as delamination, flaking, cracking or osmotic blistering you can proceed with sanding to roughen the surface. Block sanding: Block sanding is used for fairing. This type of sanding is done by hand using a flexible 3M nautical type sanding board, part number 83978, or with an electric sander to level the straightness of your surface. Deep areas will be darker and high areas will become lighter after sanding. The purpose of this sanding operation is to level the straightness of your surface. We recommend the use of a 320 or 400 grade sanding paper to ensure a uniform primer.

MANUAL SANDING

In order to remove the old coating, we recommend using a grade 120 sanding paper a block type sanding: Block type sanding is used for fairing. This type of sanding is done by hand using a flexible 3M type nautical sanding board part number 83978 or even with an electric sander to level the straightness of your surface. The deep areas will be darker and the upper areas will become lighter after sanding. The aim of this sanding operation is to standardize the straightness of your surface.

1500 SERIES EP-GUARD
EPOXY APPLICATION
1553 WHITE OR 1552 GRAY
ON ALL SURFACES

EXECUTION DIAGRAM AND PROCEDURES FIBERGLASS SUBSTRATE

ABOVE THE WATERLINE

EP-GUARD™ 1500 SERIES epoxy primer.

STEP1

When your surface is free of impurities, you can proceed with the preparation and mixing of the epoxy primer EP-GUARD™ Series 1500. This is a two-component system, so you must add the catalyst.

Two catalysts are available. To determine the catalyst that will suit your application, please refer to our technical data sheets, or contact our technical service. You can opt either for the normal catalyst, the 161-49C comprising an induction time of 30 minutes and a pot life of 6 hours, or the faster 161-80C, comprising no induction time and a 3-hour pot life.

Mix part A and part B of the 1500 series in a 3:1 ratio using a ratio rule provided by Glass Shield. With the Glass Shield GS 162-11S thinner, dilute in order to adjust the viscosity of your epoxy from 22 to 38 seconds on an EZ-ZAHN no.2 viscosity cup. You can also dilute by volume varying from 10 to 35% depending on the application technique and the type of spraying equipment selected.

STEP 2

Pour your mixture into the suitable recipient for your air gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your spray equipment. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) format in order to familiarize yourself with the application of the epoxy primer and to obtain uniform application.

STEP 3

Your tests are conclusive, your adjustments are perfect, your test application is uniform and without orange peel, apply two layers to obtain a dry film with a thickness varying between 76 and 127 microns (3.0 to 5.0 mils). Allow the film to evaporate between 10 to 15 minutes after the application of the first layer and proceed to the application of the second layer and allow to dry for 8 to 12 hours.

STEP 4

You can now move on to cleaning your equipment using GS T9800S™ cleaning solvent.

1500 SERIES EP-GUARD
EPOXY APPLICATION
1503 RED OR 1559 BLACK
ON ALL SURFACES

EXECUTION DIAGRAM AND PROCEDURES FIBERGLASS SUBSTRATE

UNDER THE WATERLINE

EP-GUARD™ 1500 SERIES epoxy primer.

STEP 1

When your surface is free of impurities, you can proceed with the preparation and mixing of the epoxy primer EP-GUARD™ Series 1500. This is a two-component system, so you must add the catalyst.

Two catalysts are available. To determine the catalyst that will suit your application, please refer to our technical data sheets, or contact our technical service. You can opt either for the normal catalyst, the 161-49C comprising an induction time of 30 minutes and a pot life of 6 hours, or the faster 161-80C, comprising no induction time and a 3-hour pot life.

Mix part A and part B of the 1500 series in a 3:1 ratio using a ratio rule provided by Glass Shield. With the Glass Shield GS 162-11S thinner, dilute in order to adjust the viscosity of your epoxy from 22 to 38 seconds on an EZ-ZAHN no.2 viscosity cup. You can also dilute by volume varying from 10 to 35% depending on the application technique and the type of spraying equipment selected.

STEP 2

Pour your mixture into the suitable recipient for your air gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your spray equipment. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) format in order to familiarize yourself with the application of the epoxy primer and to obtain uniform application.

STEP 3

Your tests are conclusive, your adjustments are perfect, your test application is uniform and without orange peel, apply two layers to obtain a dry film with a thickness varying between 76 and 127 microns (3.0 to 5.0 mils). Allow the film to evaporate between 10 to 15 minutes after the application of the first layer and proceed to the application of the second layer and allow to dry for 8 to 12 hours.

STEP 4

You can now move on to cleaning your equipment using GS T9800S™ cleaning solvent.

CAREFUL INSPECTION OF EPOXY COATING

EP-GUARD™ 1500 series epoxy primer inspection.

STEP 1

Using cotton gloves, carry out a complete inspection of your primer to check if it has any anomalies such as: dust, lint, drips, micro cracks or orange peel texture

STEP 2

Using a digital micrometer, check the thickness of your dry film in several places to make sure that your dry film meets the application standards. Your dry film should have a thickness varying between 76 and 127 microns (3.0 to 5.0 mils). To make sure that your epoxy film corresponds to the recommended thickness, don't forget to deduct the thickness of your vinyl primer varying between 7.5 and 17 microns (0.3 to 0.7 mils).

You have completed your inspection, go to the corresponding step in relation to your results.

TIPS AND TRICKS!

- ✓ During your inspection, you must not touch your epoxy film with your bare hands, as your fingers will leave traces of oils on the epoxy film and will affect the adhesion of your topcoat. Wear cotton gloves.

RESULT :
UNIFORM AND PERFECT APPLICATION

Congratulations!

The application of your EP-GUARD™ 1500 series epoxy film is impeccable! With our EP-GUARD™ 1500 series epoxy, you now have a 30-day overlay window without having to sand the surface before applying your topcoat. This advantage allows you to save time while eliminating a tedious operation.

In addition, our 1500 series EP-GUARD™ epoxy not only gives you a waterproof film, but a film with high resistance to abrasion, impact and common chemicals.

You can now proceed to the next step.

GS-9020S TO REMOVE ALL SURFACE RESIDUES

EXECUTION DIAGRAM AND PROCEDURES

DECKS

ABOVE THE WATERLINE

Two-cloth cleaning technique.

Before proceeding to the application of your topcoat, your epoxy film must be cleaned in order to remove all traces of contaminant, dust or body oils in order to optimize and ensure the quality of your finish.

Dip a cloth in Glass Shield GS 9020S™ surface cleaning solvent which is a final washing solvent and use this cloth to wet the surface.

Use a second dry cloth to wipe the surface to remove any surface contamination. Work small areas of 4 square feet or less at a time to eliminate evaporation and drying of the solvent before your second cloth wipes it off. Your will get perfect cleanliness. Change your cloths frequently, until the entire surface is free of residue.

IMPORTANT!

Wiping the surface with a single damp cloth only spreads the contaminants. Make sure that the rags used are free of impurities or contaminants. A clean cotton cloth is best.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. An approved respirator should be used with our products.

Masking under the waterline.

STEP 1

In order to protect your topcoat, mask all surfaces above the waterline. Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique.

A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings.

Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

Common problems with tapes not designed for use with these types of coatings is that they have poor resistance to creep solvents and leave adhesive residue on the surface.

WARNING!

Do not use film or light plastic film in order to hide your surfaces, they have the tendency to stick to the surface. This can leave marks on the paint which cannot be removed.

Do not use plastic sheeting on a surface. Condensation can form under the plastic and cause blistering, bubbles or loss of gloss in the paint finish.

Do not use newsprint or newspapers; these can stain the paint finish.

APPLY GLASS-GUARD 2800 TOPCOAT ABOVE THE WATERLINE

EXECUTION DIAGRAM AND PROCEDURES

DECKS

ABOVE THE WATERLINE

GLASS-GUARD™ 2800 series. High gloss polyurethane

STEP 1

Mask all surfaces under the waterline. Different qualities of masking tape are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings, masking tapes are manufactured in different qualities. The solvents in polyurethane and epoxy coatings require a paper with excellent resistance to solvent penetration. 3M's Scotchblok® Masking Paper is highly recommended.

STEP 2

Your surface is free of all impurities, your masking operation under the waterline is finished, so you can proceed to the preparation and mixing of your GLASS-GUARD™ des 2800 series topcoat, a two-component system with a high gloss level. A semi-gloss system is available GLASS-GUARD™ 2850 series is perfect for hunting and fishing boats, so you need to mix a catalyst.

Three catalysts are available. In order to determine the catalyst that will suit your application in relation to the application and atomization equipment used, we invite you to consult our technical data sheets, or to contact our technical service center. You can choose either the slow catalyst, the 275-59C with a pot life of 6 hours, the regular catalyst, the 275-50C with a pot life of 6 hours and our fast catalyst, the 275-80C with a pot life of 3 hours.

STEP3

Mix 2800 Series Part A and Part B in a 2:1 ratio using a ratio ruler provided by Glass Shield. Using Glass Shield UC-500S™ Thinner, dilute to adjust the viscosity of your polyurethane for 22 to 60 seconds on an EZ-ZAHN viscosity cup no.2. You can also make a volume dilution ranging from 10 to 35% depending on the application technique and type of atomizing equipment selected. Unlike the primer, the GLASS-GUARD™ polyurethane 2800 series system has no induction time, so once your mixture is homogeneous you will be able to test it.

STEP4

Pour your mixture into the appropriate pot for your gun and make the necessary adjustments by consulting and following the instructions of your gun manufacturer. Test and adjust the application on FOAM CORE type panels available in 50 x 76 cm (20 x 30 in.) format to familiarize yourself with the application of polyurethane to obtain a uniform application. If your finish has a texture similar to an orange peel, several factors must be corrected in the spraying process. We therefore invite you to contact our service and technical assistance centre by calling 1 800 361-6652.

STEP5

Apply two coats of GLASS-GUARD™ 2800 series polyurethane to achieve a dry film thickness of 50 to 76 microns (2 to 3 mils). The time required between coats to allow adequate solvent evaporation is 10 to 20 minutes at an ambient temperature of 20˚à 24˚C (68˚à 75˚F). The resulting finish should be perfectly smooth and uniform with a gloss level in relation to the (ASTM D523) standard of 94°+ UV, abrasion and impact resistant for the next 10 to 15 years.

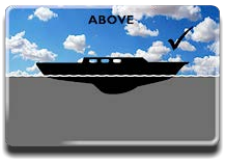
TIPS AND TRICKS!

- ✓ If your topcoat has more than one colour, such as to add decorative stripes. Please note that you will need to take into account covering windows ranging from 10 to 24 hours in relation to the catalyst chosen. For more information, we invite you to contact our service and technical assistance centre at 1 800 361-6652.

- ✓ For the creation of decorative strips, a thin plastic tape such as 3M Fine Line® #218 is recommended. In order to ensure uniform adhesion, push the edges of the tape with a plastic blade and insert a sheet of paper between the blade and the tape. This will facilitate the gliding to obtain well sealed edges, a thin, uniform and crease-free line.

IMPORTANT!

Use only with adequate ventilation with a capacity of 4 to 5 air changes/hour. Maintain a continuous flow of fresh air. Do not breathe vapors, spray mists. Wear a suitable, properly fitting air respirator during and after application unless air quality indicates the presence of vapor and particle levels are below applicable limits. Follow manufacturer's directions for use of respirators. Provide sufficient general and/or local mechanical ventilation to keep exposure below threshold limit values.



Masking above the waterline.

STEP 1

In order to protect your topcoat, mask all surfaces above the waterline. Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique.

A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings.

Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

Common problems with tapes not designed for use with these types of coatings is that they have poor resistance to creep solvents and leave adhesive residue on the surface.

WARNING!

Do not use film or light plastic film in order to hide your surfaces, they have the tendency to stick to the surface. This can leave marks on the paint which cannot be removed.

Do not use plastic sheeting on a surface. Condensation can form under the plastic and cause blistering, bubbles or loss of gloss in the paint finish.

Do not use newsprint or newspapers; these can stain the paint finish.

GS-9020S TO REMOVE ALL SURFACE RESIDUES

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

Two-cloth cleaning technique.

Before proceeding with the application of your anti-fouling layer, your epoxy film must be cleaned in order to remove contaminants, dust or body oils in order to optimize and ensure the quality of your anti-fouling layer.

Dip a cloth in Glass Shield GS 9020S ™ surface cleaning solvent which is a final washing solvent and use this cloth to wet the surface.

Use a second dry cloth to wipe the surface to remove any surface contamination. Work small areas of 4 square feet or less at a time to eliminate evaporation and drying of the solvent before your second cloth wipes it off. Your will get perfect cleanliness. Change your cloths frequently, until the entire surface is free of residue.

IMPORTANT!

Wiping the surface with a single damp cloth only spreads the contaminants. Make sure that the rags used are free of impurities or contaminants. A clean cotton cloth is best.

WARNING!

Do not get in eyes, on skin or on clothing. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent-resistant gloves and boots to avoid contact with the skin. An approved respirator should be used with our products.

APPLICATION OF ANTI-FOULING LAYER MONOGLASS MC - 4250*

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

MONOGLASS™ MC 4250 high gloss Hygro-reactive polyurethane.

In order to protect our water bodies as required by environmental regulations, MONOGLASS™ is a hard matrix anti-fouling layer containing no biocides or copper. MONOGLASS™ MC 4250 contains resin with a high content of water-insoluble components which confer hardness and high resistance properties. MONOGLASS™ MC 4250 is ideal for fast motorboats, tugs, boats stored in dry ports and those that are stranded during tides as well as for regatta boats looking for more speed. The advantage with MONOGLASS™ MC 4250 is that you will not have to reapply your anti-fouling or antifouling coat every year. A simple sanding with water and you will be ready for the release.

MONOGLASS ™ MC 4250 is well resistant to external agents, abrasion, sand, stranding or transport on a trailer. It is strongly recommended in tidal areas and for large crossings. Strong and durable for several seasons, it is super resistant to sanding and impacts. Advice: avoid dripping during application. The minimum temperature for the application is 10°C or 50°F. You can therefore prepare your boat in the fall for your next season because MONOGLASS™ MC 4250 does not need a subsequent launch and can be applied by brush, roller, air gun, airless and electrostatic.

STEP 1

Hide all the surfaces above the waterline and protect all the parts which should not be painted (probes, anodes, etc.). Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings. Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

STEP 2

MONOGLASS™ MC 4250 is a single component polyurethane requiring no dilution, you can pour your mixture into a suitable jar for your gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your gun. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) Format in order to familiarize yourself with the application of polyurethane and obtain uniform application. If your finish has a similar texture to an orange peel, several factors must be corrected in terms of atomization before application. We therefore invite you to contact our service and technical assistance center by calling 1 800-361-6652.

STEP 3

Apply three to four thin coats to avoid drips until you obtain a dry film with a thickness of 50 to 75 microns (2 to 3 mils). The time required between coats is 20 minutes but as it is a hygro-reactive product, the time between coats varies in relation to the humidity. The higher the humidity, the faster it will dry. Its pot life is 4 to 6 hours.

TIPS AND TRICKS!

- ✓ MONOGLASS™ MC 4250 is a single component product ready for application, further dilution with thinner is not recommended.

IMPORTANT!

Use only with adequate ventilation. Maintain a continuous flow of fresh air. Do not breathe the vapors. Wear suitable air respirator snugly, during and after application, unless air quality demonstrates the presence of steam and that the levels of particles are below applicable limits. Follow the manufacturer's instructions for proper use of a NIOSH/MSHA approved respirator. Provide enough general and/or local mechanical ventilation to keep exposure below threshold limit values.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. A NIOSH/MSHA approved respirator should be used with our products.

APPLICATION OF ANTI-FOULING LAYER
AMBER-SHIELD MC - 4509**

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

AMBER-SHIELD™ MC 4509. Hygro-reactive polyurethane.

In order to protect our water bodies as required by environmental regulations, AMBER-SHIELD™ is a hard matrix anti-fouling layer containing no biocides or copper. AMBER-SHIELD™ MC 4509 with a slightly amber hue contains resin with a high content of water-insoluble components which confer hardness and high resistance properties. AMBER-SHIELD™ MC 4590 is ideal for fast motorboats, tugs, boats stored in dry harbors and those stranded during tides as well as for regatta boats looking for more speed. The advantage with AMBER-SHIELD™ MC 4509 is that you will not have to reapply your anti-fouling or antifouling coat every year. A simple sanding with water and you will be ready for the release.

AMBER-SHIELD ™ MC 4509 is well resistant to external agents, abrasion, sand, stranding or transport on a trailer. It is strongly recommended in tidal areas and for large crossings. Strong and durable for several seasons, it is super resistant to sanding and impacts. Advice: avoid dripping during application. The minimum temperature for the application 10 ° C / 50 ° F. You can therefore prepare your boat in the fall for your next season because AMBER-SHIELD ™ MC 4509 does not need a subsequent launch and can be applied by brush, roller, spray gun air, airless and electrostatics.

STEP 1

Hide all the surfaces above the waterline and protect all the parts which should not be painted (probes, anodes, etc.). Different qualities of masking tapes are available on the market. Pay attention to the recommendations of the various manufacturers, then make your choice according to your working conditions and your technique. A minimum requirement is a tape designed to be used with polyurethane and epoxy coatings. Masking papers are produced in different qualities. Solvents in polyurethane and epoxy coatings require paper with excellent resistance to solvent penetration. 3M's Scotchblok® masking paper is highly recommended.

STEP 2

AMBER-SHIELD MC 4509 is a single component polyurethane requiring no dilution, you can pour your mixture into a suitable jar for your gun and make the necessary adjustments by consulting and following the instructions of the manufacturer of your gun. Test and adjust the application of this on FOAM CORE type panels available in 50x76 cm (20x30 in.) Format in order to familiarize yourself with the application of polyurethane and obtain uniform application. If your finish has a similar texture to an orange peel, several factors must be corrected in terms of atomization before application. We therefore invite you to contact our service and technical assistance center by calling 1 800-361-6652.

STEP 3

Apply three to four thin coats to avoid drips until you obtain a dry film with a thickness of 50 to 75 microns (2 to 3 mils). The time required between coats is 20 minutes but as it is a hygro-reactive product, the time between coats varies in relation to the humidity. The higher the humidity, the faster it will dry. Its pot life is 4 to 6 hours.

TIPS AND TRICKS!

- ✓ AMBER-SHIELD™ MC 4509is a single component product ready for application, further dilution with thinner is not recommended.

IMPORTANT!

Use only with adequate ventilation. Maintain a continuous flow of fresh air. Do not breathe the vapors. Wear suitable air respirator snugly, during and after application, unless air quality demonstrates the presence of steam and that the levels of particles are below applicable limits. Follow the manufacturer's instructions for proper use of a NIOSH/MSHA approved respirator. Provide enough general and/or local mechanical ventilation to keep exposure below threshold limit values.

WARNING!

Avoid contact with skin, eyes or clothes. Use solvent resistant safety glasses with splash protection. We recommend that you wear a paint suit, solvent proof gloves and boots to avoid contact with the skin. A NIOSH/MSHA approved respirator should be used with our products.

APPLICATION OF COPPER OXIDE BASED ANTI-FOULING LAYER***

EXECUTION DIAGRAM AND PROCEDURES

HULLS

UNDER THE WATERLINE

Anti-fouling paints are intended to protect the hull of boats against soiling. Having an impact on the environment, they capture the attention of boaters and nautical clubs and associations.

Between the need to protect the hull and the environmental impact, these active products must be viewed according to a risk/benefit analysis linked to the uses of boaters.

After a few minutes in the water all the hulls undergo a bacteriological attack. These bacteria will accumulate, after about a week, this bacteriological attack will form a substrate favorable to the appearance and development of the first shells and algae.

A clean hull is therefore first and foremost a safety story. Algae and shells generate a drag coefficient destabilizing the maneuverability of the boat. On merchant ships, it has been measured that the coefficient of drag generated by a dirty hull can increase by 30% to 80%. Antifouling paints are also imperative to improve sliding and therefore reduce fuel consumption. They also help prevent early engine wear. Finally, it is an environmental obligation to avoid the dispersion of invasive species in the different ecosystems crossed by boats.

A variety of anti-fouling paints are available on the market. Before making your choice, we recommend that you first take note of the environmental regulationsin relation to inland waterways.

To find out if your possible selection is compatible with our products and to know the application method, refer to our support and technical assistance center at 1-800-361-6652

Assessment of the necessary corrective measures.

Unfortunately, this kind of situation is more common than we think, even if you have taken all the precautions, this kind of situation is inevitable, especially if you work in an uncontrolled environment.

As your epoxy coating is characterized by a gloss level of approximately 60°, it is much easier for you to detect certain anomalies immediately, than after having applied your finishing coat.

Have you noticed certain anomalies in your epoxy layer, such as a straightness problem, cotton foam, cracks or a similar texture to an orange peel? It will be easy for you to correct the problem according to the rules of the art.

Take photos and list the fixes to be made.

Surface correction, an easy task.

You have noted certain anomalies, correct the anomalies according to the rules of the art. Use a nautical grade sealant such as 3M part number 051131-46004. Refer to the guidelines for drying times before proceeding to sanding.

Block sanding: block type sanding is used for fairing. This type of sanding is done by hand using a flexible 3M type nautical sanding board, part number 83978.

or with an electric orbital sander PORTER-CABLE 7346, to level the straightness of your surface.

The deep areas will be darker, and the upper areas will become lighter after sanding. The aim of this sanding operation is to standardize the straightness of your surface and is carried out on a horizontal plane, therefore from left to right. Never vertical from top to bottom.

We recommend using a 320 or 400 grade sanding paper so that the primer is uniform.

Using a workshop vacuum cleaner, remove any dust or sanding residue. The surface should be thoroughly cleaned of any dust before the primer is applied with the Glass Shield GS 9020S final surface cleaning solvent.

Once the corrections have been made and your surface is cleaned and free of any sanding residue, you will reapply a layer of EP-GUARD 1500 series epoxy primer to obtain a dry film of 25 to 40 microns (1 to 1, 5 mils.) To seal your primer and allow to dry for 8 to 12 hours.