



SLIPS® Dolphin™ Marine Paint from AST

SLIPS® Dolphin™

PRODUCT DATA SHEET and APPLICATION GUIDE

PRODUCT DESCRIPTION

SLIPS® Dolphin™ is a revolutionary lubricious silicone foul-release coating for the control of marine biofouling organisms.

Compared to conventional marine paints, SLIPS® Dolphin™ provides a non-toxic solution by using lubricant and other mechanisms to create a surface that marine organisms, such as algae and barnacles, have difficulty adhering to.

INTENDED USES

For use on commercial and recreational oceangoing ship hulls. May also be used on structures exposed to marine fouling.

PRODUCT INFORMATION

Color	White
Finish / Sheen	Glossy/Wet
Volume Solids	>95%
Mix Ratio	4 to 1 mix ratio (1 gal Part A to 1 quart Part B)
Typical Wet Film Thickness (WFT)	Tack Coat: 1-2 mils (25-50 µm) Flow Coat: 5-6 mils (125-150 µm) Total: 6-8 mils (150-200 µm)
Method of Application	Roller / Spray / Brush
Solvent for Rolling	Xylene (if desired; no dilution is necessary for roller application.)
Solvent for Spraying	Xylene (if desired; no dilution is necessary for spray application.)
Solvent for Clean Up	Xylene
Theoretical Coverage	160-200 sq. ft. / gallon (15-19 m ² / gallon)

Table 1: Drying Times of SLIPS® Dolphin™

<u>Temperature (at 50% RH)</u>	<u>50°F (10°C)</u>	<u>77°F (25°C)</u>	<u>95°F (35°C)</u>
Working Time / Pot Life	2.5 – 3 hr	1.5 - 2 hr	0.5 - 1 hr
Touch Dry	3.5 hr	2 hr	1 hr
Dry to Launch	Full 24 hr	Full 24 hr	Full 24 hr

APPLICATION SYSTEM: PRIMER → TIE COAT → TOP COAT

Priming Considerations:

- Remove all previous antifouling paint, primers in poor condition, and mold release waxes prior to the application of SLIPS® Dolphin™.
 - Ensures proper adhesion of the SLIPS® coating system.
 - Provides a smoother hull that will optimize the speed and fuel savings.
- **If applying to a newly constructed hull, it is critical that the mold release wax be removed from the gel coat before applying the primer and coating system.** Since mold release wax is very pervasive, we recommend Interlux® Fiberglass Solvent Wash 202, or an equivalent product, for its removal by the “double-rag method” described in the product TDS: “Wipe a small area with a clean rag that has been wetted with Fiberglass Solvent Wash 202. While the surface is still wet, wipe with a clean, dry rag. Continue this process until the entire surface has been cleaned.” After this process is complete, primer and coating system application may continue.
- Choose an appropriate primer for the hull material and apply based on the manufacturer’s recommendations to seal the hull. For steel or fiberglass hulls, we recommend Interlux® Interprotect 2000E, or Hempel® Light Primer 45551 (or an equivalent product).

Tie Coat Considerations:

- The overcoating window of the tie coat over the epoxy primer is of great importance. Depending on the system chosen, the application instructions for the tie coat and primer from the same manufacturer should be followed: i.e. Intersleek 731 on top of Interprotect 2000E, or Hempel Silic One Tiecoat 27450 on top of Hempel Light Primer 45551. (If using SLIPS® Tie Coat, follow the recommendations for Intersleek 731, as they have equivalent application schemes.)
- Tables 2 and 3, below, outline the overcoating windows for the AST-approved tie coats onto their recommended primers:

Table 2: Over-coating Window of Intersleek 731 on Interprotect 2000E

<u>Drying Temp.</u>	<u>41°F (5°C)</u>	<u>59°F (15°C)</u>	<u>73°F (23°C)</u>	<u>95°F (35°C)</u>
Over-coating Window	7-24 hr	6-18 hr	5-10 hr	3-7 hr

Table 3: Over-coating Window of Hempel Silic One on Hempel Light Primer

<u>Drying Temp.</u>	<u>50°F (10°C)</u>	<u>68°F (20°C)</u>
Over-coating Window	4-8 hr	2-4 hr

- For reference, the recommended WFT of Intersleek 731 is 6-7 mils (150-175 µm), and the recommended WFT for Hempel Silic One Tie Coat is 4 mils (100 µm).

Top Coat Considerations:

- It is important to apply the SLIPS® Dolphin™ top coat directly over the AST-approved tie coat within the Over-coating Window. Table 4, below, outlines the safest application scheme for Dolphin top coat onto any AST-approved tie coat.

Table 4: Over-coating Window of SLIPS Dolphin Top Coat on SLIPS Tie Coat

<u>Drying Temp.</u>	<u>50°F (10°C)</u>	<u>68°F (20°C)</u>	<u>86°F (30°C)</u>
Over-coating Window:	16 – 48 hr	8 – 48 hr	4 – 24 hr

- Apply **SLIPS®** Dolphin™ in the following ways:

Mixing

SLIPS® Dolphin™ is supplied in two containers, Part A (Base) and Part B (Curing Mixture). The mixing ratio is 4 parts of Part A to 1 part of Part B. The Pot Life is between 1 and 3 hours, depending on the temperature and humidity (see Table 1).

Roller

When applying SLIPS® Dolphin™ by roller, use a good quality, solvent resistant roller cover, such as a Redtree Industries 3/16" Deluxe Mohair, or equivalent, for best results.

After mixing, roll on a thin "**tack coat**" of SLIPS® Dolphin, 1-2 mils (25-50 µm). Allow the tack coat to dry for a maximum of 30 minutes. When dry, apply a full "**flow coat**" of SLIPS Dolphin, 5-6 mils (125-150 µm), in one full coating. Apply additional paint "wet on wet" if necessary, until appropriate wet film thickness is achieved. The two coats should be 6-8 mils (150-200 µm) in total.

Spray

Use an airless spray gun with a 517 tip and set pressure to 3000 PSI. Spray from approximately one foot away, moving at a steady speed of about 1 foot per second to achieve desired thickness of 6-8 mils (150-200 µm). If thinning is required, use 5-10% (v/v) of xylene.

Brush

A good quality, solvent resistant, 4-inch paint brush can be used for small areas, such as bare areas that supported jack stands. A brush can also be used to repairing SLIPS® Dolphin™, as needed.

- By following the procedure above, the primer and tie coat can be applied on one day and the Dolphin™ top coat can be applied the next day. This will reduce the total time to paint the hull and ensure that all Over-coating Windows are met.
- Lifting safety requirements and additional application information, such as painting the areas under jack stands, can be found in the sections below.

Patch and Repair Instructions

In most cases, damage to the coating will result in the tie coat (and top coat above it) being removed from the epoxy primer layer. To repair these damaged areas of SLIPS® Dolphin™, sand the exposed primer and about 1 inch into the surrounding top coat with 180 grit sandpaper to reveal some texture. If using a powered sander, we recommend a Dual Action sander with a soft pad under the sandpaper. Light pressure and constant movement will reduce the amount of heat on the Dolphin coating, which is helpful. Once the exposed epoxy and area around the damage has been sanded, spray it with water to remove any silicone waste balls. Wipe this area with isopropyl alcohol, or another appropriate solvent, and allow the surface to dry. When dry, apply tie coat, per the instructions, over the freshly sanded/cleaned areas of the epoxy and top coat. After the tie coat dries, apply the top coat per the instructions, within the overcoating window. NOTE: Do not attempt to adhere fresh SLIPS Dolphin directly to previously applied and cured Dolphin without sanding, as it will not adhere well and may detach. If the damage only affects the top coat and doesn't expose other layers of the coating we recommend to sand, clean, and apply more top coat as previously mentioned in this section.

Removal

When removing old foul release coatings, follow these recommendations:

1. A 4" Wallpaper Shaver/Scraper should be used to get under the top coat and push off sections from the hull. These tools are available from any good hardware store.
2. Fiberglass Paint Remover can be used to aid in scraping the hull, as it will soften the top coat and make it easier to remove with the scraper.
3. Another removal method is by sanding with 60 grit sandpaper on a DA sander with a soft pad. Take care not to damage the hull or gelcoat by oversanding.

BOATYARD SAFETY INFORMATION

APPLYING SLIPS® Dolphin™ UNDER JACK STANDS OR KEEL BLOCKS

BECAUSE THE SLIPS® COATING IS SO SLIPPERY, THE JACK STANDS HOLDING UP THE BOAT MUST ALWAYS BE CHAINED TOGETHER (i.e. the port and starboard jack stands must be connected with a chain as the manufacturer recommends). This holds true for both bow and stern jack stands.

Once the SLIPS Dolphin is dry, it is best to install a separate set of jack stands to hold up the hull. It is recommended to apply a barrier, such as layers of thick plastic bags or liners, to the additional set of jack stands to prevent damage to the newly cured application of SLIPS® Dolphin™. Once the new set of jack stands are in place and chained together the old jack stands can be removed.

Mix and apply the SLIPS Dolphin system to this unpainted jack stand areas. This should be done using the same procedure as the rest of the bottom application.

LIFTING INSTRUCTIONS FOR BOATS PAINTED WITH SLIPS® Dolphin™

Silicone based foul release coatings are so slippery that boats painted with them have the potential of slipping out of the front travel lift sling straps when being lifted. This can be avoided by tying a dock line from the port bow sling to the port aft sling, thereby preventing them from separating. The same safety dock line should be attached to the starboard bow and stern sling straps.

It is also important to prevent the travel lift straps from damaging the SLIPS Dolphin paint film during lifts, as the straps can stretch. This can be avoided by temporarily attaching a couple layers of thick plastic bags or Visqueen plastic sheeting to the lift straps. A product called Sling-Shield Blue Kote, or equivalent, can also be used.

TRAILERING INSTRUCTIONS:

For boats that are regularly loaded to and from trailers we recommend doing this by travel sling to lift the boat on and off the trailer pads. The friction caused by sliding the boat on and off may cause tearing in the coating and should be avoided, if possible. For boats that will spend a significant amount of time on trailers, when out of the water, soft padding, or layers of thick plastic sheeting (Visqueen) should be laid between the trailer pads and the hull to prevent any damage.

CLEANING INFORMATION:

If any fouling starts to accumulate on the coating after time, it can be easily washed away with a soft, wet rag, while the boat is in or out of the water. For more comprehensive cleaning jobs, a pressure washer may be used at a max pressure of 1200 psi (85 bar). The use of a rotating tip will help disperse the pressure to limit damage on the coating, but also help create different angles to easily remove all types of fouling. **It is important that the boat owner alert boatyards to the maximum pressure specification to avoid damage to the coating when cleaning with a pressure washer.** Also, avoid using any scrapers or wire brushes to clean the hull as the abrasion may cause damage to the top coat.

REGULATORY DATA

VOC <100 g / liter as supplied

Note: VOC values are typical and are provided for guidance purposes only. These may be subject to variation depending on normal manufacturing tolerances.

Proposition 65 warning: This product contains chemicals known to the state of California to cause cancer and birth defects or other respiratory harm.

This product does not contain organotin compounds acting as biocides and as such is in compliance with the International Convention on the Control of Harmful Anti-fouling Systems on ships as adopted by IMO in October 2001 (IMO document AFS/CONF/26). The product is exempted from EPA registration as it does not contain biocides.

Shelf Life: Unopened cans have a shelf life of 12+ months if stored according to the recommended storage conditions. Although not recommended, opened / partially used cans may also be stored under the same conditions.

Recommended Storage Conditions: Store cans, tightly closed, in dry, shaded conditions away from sources of heat and ignition.

Disposal: Used or wasted material should be disposed of according to all local, regional, and national regulations. Any uncured paint that spreads on bench tops and counters during application can be removed using wipes or towels wetted with common solvents mentioned above, and those materials must be disposed of according to all local, regional, and national regulations.

Safety

All work involving the application and use of this product should be performed in compliance with all relevant national Health, Safety & Environmental standards and regulations.

Prior to use - obtain, consult, and follow the Safety Data Sheet(s) concerning health and safety information for this product, located at <http://slipsfoulprotect.com/technical-documentation>. Read and follow all precautionary notices on the Safety Data Sheet and container labels. If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use this product. Proper ventilation and protective measures must be provided during application. Take precautions to avoid skin and eye contact (e.g. gloves, goggles). Actual safety measures are dependent on application methods and work environment.

EMERGENCY CONTACT

In case of emergency, call 911 or the poison control center in the case of accidental ingestion.

For 24/7 Emergency Response call INFOTRAC at 1-800-535-5053 (inside US) or 1-352-323-3500 (outside US).

REVISION DATE: October 13, 2021