MarineMEND®

REPAIR KIT PROCEDURE

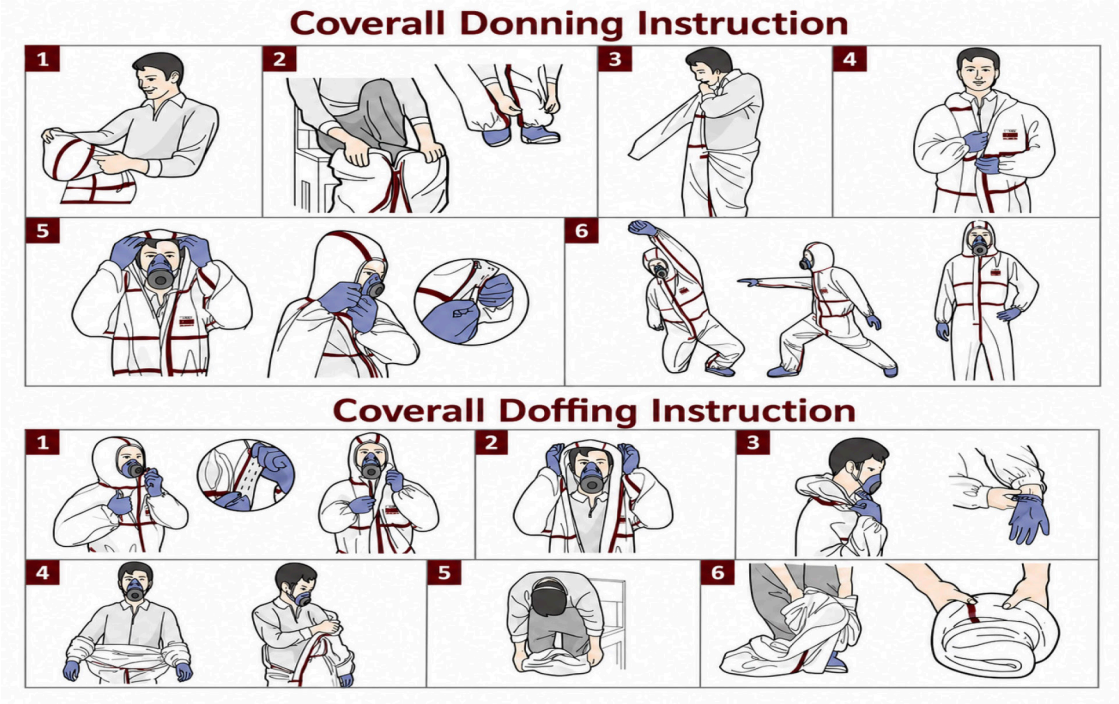
**This Repair Kit Procedure supersedes those previously issued.*

CONTENTS

The purpose of this procedure is to clearly explain what must be done in order to repair a MarineLINE® coated tank for service. The repair procedure should be used when the coating has been misapplied, damaged, or contains holidays (pinholes).

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Donning	Put on and use PPE properly to achieve the intended protection and minimize the risk of exposure.
Doffing	Removing PPE in a way that avoids self-contamination.



PPE APPLIED IN LAYERS

Nitrile Gloves: 7 mil thickness or greater	HazMat Suit: Tychem 2000-4000 or equivalent
Chemical Resistant Gloves	Safety Eye Protection
Long Sleeve T-shirt or Sleeve Covers	Respiratory Protection
Pants	

PRE-SURFACE PREPARATION

Pre-Prep

Identify and mark all areas that need to be repaired.
A detergent wash and chemical cleaning must be done to the surfaces to be repaired.
All surfaces must be completely dry before surface preparation.
Note: Do not open MarineMEND repair kits

SURFACE PREPARATION

Step 1

Identify all areas to be repaired and tape off 25 mm around its periphery.

Step 2

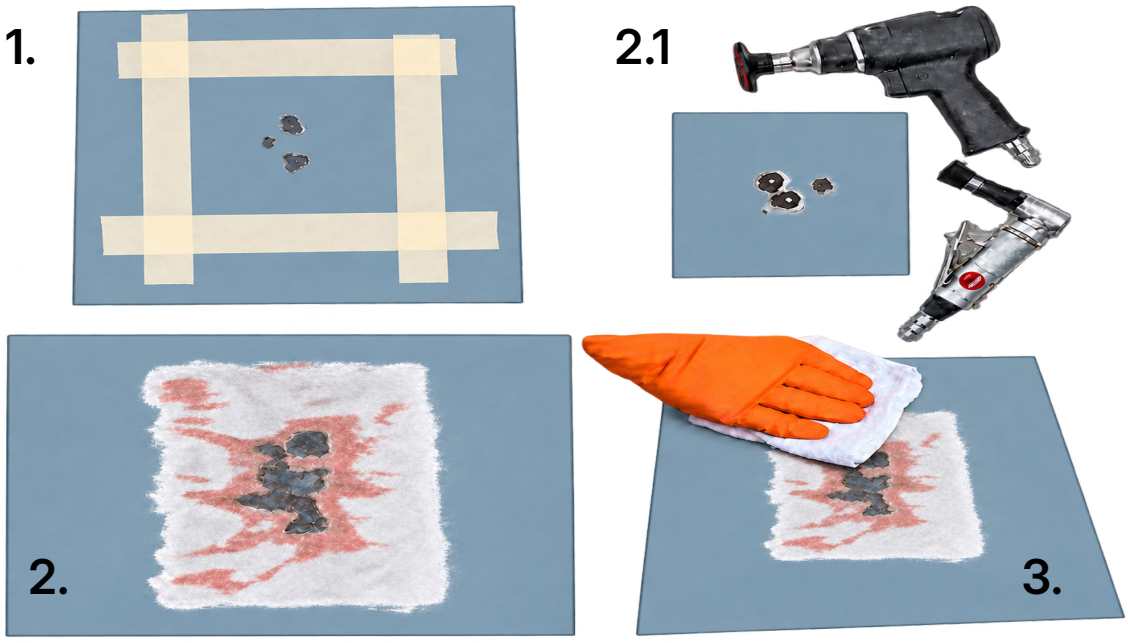
Remove MarineLINE coating topcoat (Grey) and feather in the edges.
If the damaged areas are small and independent (separate) from each other, the small, damaged areas may be hand sanded with a medium grit aluminum oxide sandpaper. Sand the topcoat (grey) of the MarineLINE coating and remove any rust spots.

For areas that are larger, use one of the following methods:

1. A vacuum blaster, which gives the best adhesion profile
2. A disk grinder with medium grit aluminum oxide disk, or needle head.

Step 3

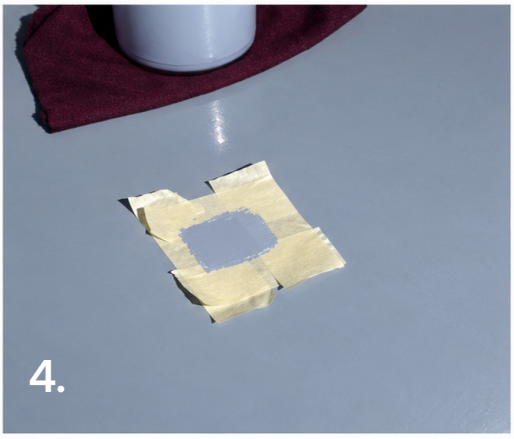
The area should then be vacuumed thoroughly to remove all dust particles and washed with solvent (Acetone is preferred, Toluene and MEK are suitable).
Note: Always use a clean white cloth. Do not use shop rags.

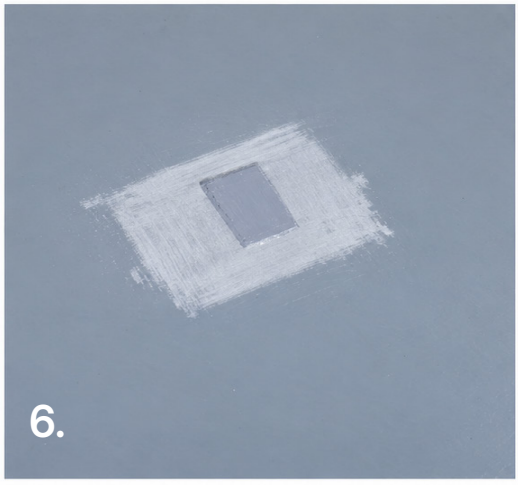


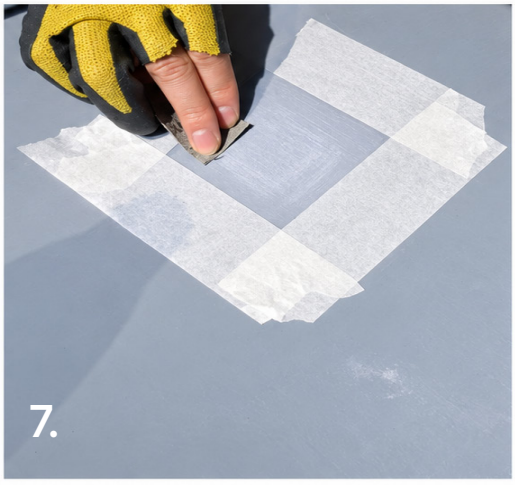
MarineMEND BASECOAT APPLICATION

Step 1	Tape off the edges only revealing the bare steel surface.
Step 2	Make sure all areas to be coated have been prepared before opening and mixing MarineMEND basecoat.
Step 3	Mixing: Pour the entire contents of MarineMEND Part B (catalyst) bottle into Part A (Resin) container and mix thoroughly for 2-3 minutes. **The pot life for MarineMEND once mixed is 30 minutes at 20ºC.**
Step 4	Use a small brush or roller to apply the mixed MarineMEND Basecoat to the properly prepared bare steel surface at a wet film thickness of 160-200 microns.
Step 5	After applying the basecoat, remove the tape immediately to reduce thick coating edges.
Step 6	Allow the basecoat to B stage (dry to touch) with good ventilation until the coating has tacked up and released all solvent. This could take up to 24 hours depending on temperature and airflow. Start by checking the coating after 6 hours, if the coating is still not dry to touch then continue to check every 2 hours until the coating is dry.
Step 7	Once B stage (dry to touch) is complete, sand the basecoat smooth and clean the coated area prior to topcoat application.



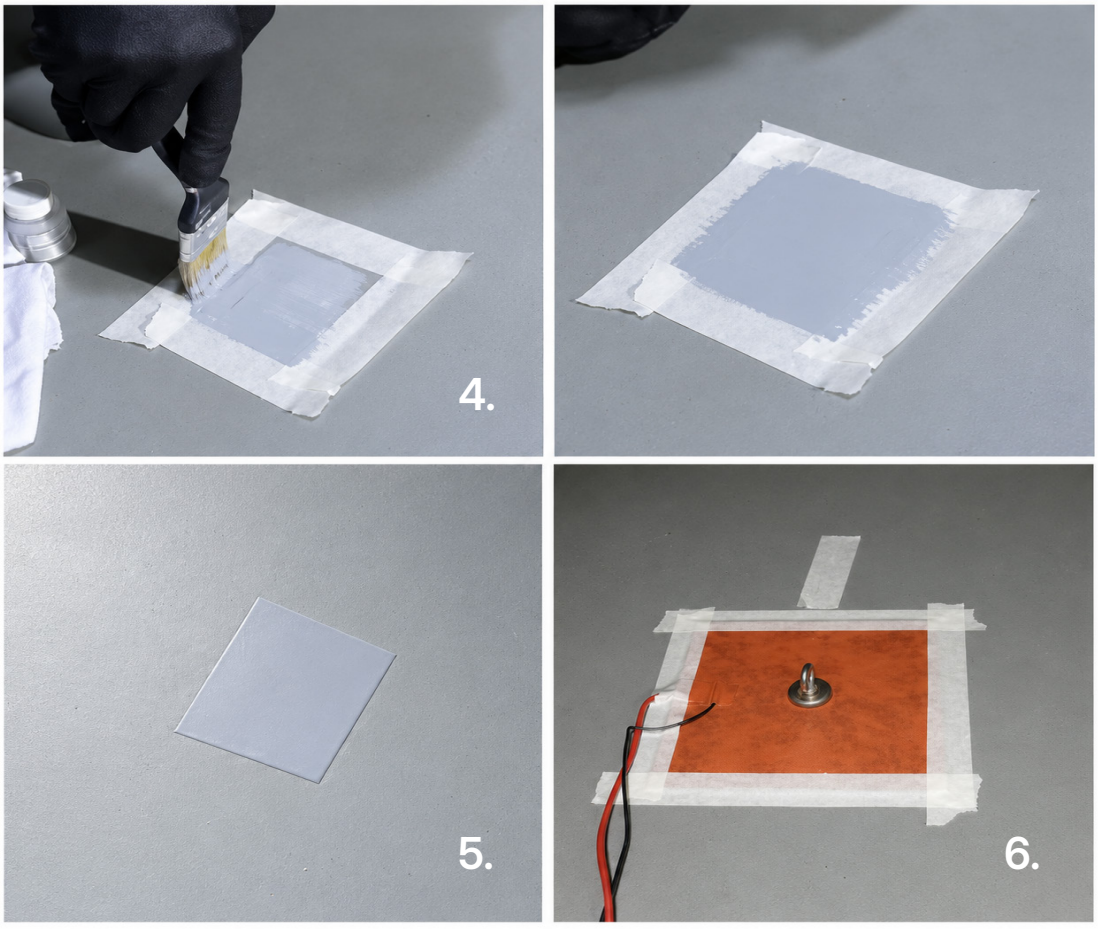






MarineMEND TOPCOAT

Step 1	Tape off outer sanded area.
Step 2	Make sure all areas to be coated have been prepared before opening and mixing MarineMend topcoat.
Step 3	Mixing: Pour the entire contents of MarineMEND Part B (catalyst) bottle into Part A (Resin) container and mix thoroughly for 2-3 minutes. **The pot life for MarineMEND once mixed is 30 minutes at 20ºC.**
Step 4	Use a small brush or roller to apply the mixed MarineMEND Topcoat to the properly prepared surface at a wet film thickness of 160-180 microns.
Step 5	After applying the topcoat, remove the tape immediately to reduce thick coating edges. After you remove the tape, make sure to mark the repair areas so you can easily identify where the repair areas are in the cargo tank.
Step 6	Allow the topcoat to B stage (dry to touch) with good ventilation until the coating has tacked up and released all solvent. This could take up to 24 hours depending on temperature and airflow. Start by checking the coating after 6 hours, if the coating is still not dry to touch then continue to check every 2 hours until the coating is dry.



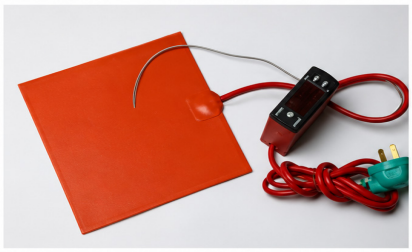
CURING REQUIREMENTS

Step 1	After all the repair areas are hard dry, each area should be spot heat cured to obtain optimum performance.
Step 2	**Option 1: (Preferred Best) Silicone Heating Pad: Place heating pad firmly on repair area, taping off the edges or using magnets. Heat repair area for 1 hour at 90°C or 24 hours at 60°C.**
Step 3	Option 2: (Preferred) Heat Gun: Heat repair area for 1 hour at 80°C or 24 hours at 60°C.
Step 4	Option 3: Heating Lamp: Heat repair area for 1 hour at 80ºC or 24 hours at 60°C.
Step 5	Option 4: Hot cargo heat cure: Please consult your MarineLINE representative for approved hot cargoes and temperature/ time requirements.
Step 6	Option 5: Ambient Cure: The repair material will not achieve optimum chemical resistance and performance properties if ambient cured.
Step 7	Post cure under ambient conditions at a minimum of 30°C and hold for three days. Followed by a hot cargo or hot water at the following temperatures: • 40 °C for 5 days • 50 °C for 3 days • 60 °C for 1 day

*Continue to the next page for the Silicone Heating Pad Procedure.

SILICONE HEATING PAD PROCEDURE

Material needed



Silicone Heating Pad



Kapton Tape

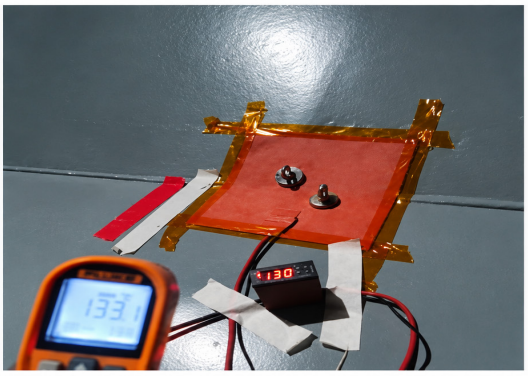


Heat-Resistant Magnet



Temperature Gauge

Step 1	Allow repair to hard dry.
Step 2	Secure the heating pad to the repair area via one of the following methods: • For carbon steel or other magnetic substrates, heat-resistant magnets or Kapton tape can be used to secure the heat pad in place. • For stainless steel or other non-magnetic substrates, Kapton tape can be used to secure the heat pad in place.
Step 3	Set the temperature at 90°C.
Step 4	Allow the temperature to stabilize at 90ºC for 15 minutes.
Step 5	After the temperature has stabilized start the soak time and hold for 1 hour.
Step 6	When the 1-hour soak time has finished, turn off the heating pad and allow it to cool prior to removing the Kapton tape and heating pad.





MarineMEND®

TECHNICAL SPECS

Color	Grey (both base and topcoat)		
Mix Ratio	12oz Kit:	Part A: 10.8	Part B: 1.2
Solids Content	93% +/- 2%		

SHELF LIFE

Storage

When stored at a temperature of 20ºC - 25°C, the shelf life is 12 months.
Store material in a climate-controlled area between 20ºC - 35°C 48 hours before using material.

POT LIFE

Pot Life

When applied at a temperature of 20°C - 27ºC, the pot life is 30 minutes.

- An induction time is not required
- If the temperature is cooler, the pot life will be longer
- If the temperature is warmer, the pot life will be shorter

SURFACE PREPARATION

Prep Specs

- A profile needs to be created that allows bonding of the coating to the surface.
- The best method to achieve a proper profile is vacuum blasting
- This can also be achieved by sanding, either by hand or machine (scored, not smooth)
- The surface must be free of rust and clean of debris/contaminant

- **Note:** Do not use “Puddy” (ex. Belzona), to fill in pitted or cracked areas in the steel.

Please contact Advanced Polymers Coatings Customer Care Department if you have any questions regarding your MarineMEND or MarineLINE coating.

Please use our Customer Care Portal for all inquiries regarding the MarineMEND or MarineLINE coating.