



Tideguard 171A

Solvent Free Epoxy Cladding

Product Data/ Application Instructions

- 100% volume solids, no VOC emission
- Spray applied epoxy cladding
- Long lasting economical splash zone protection
- Resist impact and abrasion
- Non skid corrosion resistant epoxy cladding for decks, mudroom floors, walkways and helidecks

Features and Benefits

Tideguard 171A is a solvent free epoxy cladding, formulated for application in both moderate and hot climates. It provides a tough impact and abrasion resistant, long lasting barrier for the protection of steel structures in the offshore and marine industry. Tideguard 171A is applied by spray at 3 to 6 mm in one coat.

Typical Uses

Cladding on carbon steel for tidal and splash areas of offshore structures and pilings. Abrasion resistant non skid cladding for decks, mudroom floors, chemical storage areas, walkways and helidecks on offshore structures. Applied in fabrication yards on new structures and on in-place structures.

Outstanding Characteristics

Tideguard 171A forms a tough barrier providing long lasting protection: in continuous or intermittent immersion; against repeated splash wetting and wave action and in salt air exposure. Protects also against costly damage due to impact and abrasion from workboats, debris and ice. Provides a tough, abrasion resistant, non skid surface.

Can be exposed to still water contact right after application; can be applied by spray to horizontal, vertical and overhead surfaces and on to complex structural configurations.

Physical Data

Finish	rough
Colour	grey *
Components	3
Mixing ratio (by weight)	
resin	3.30 kg
ure	1.70 kg
powder	15.00 kg
Curing mechanism	chemical reaction between components
Volume solids	100%
VOC	0
Recommended thickness	4½ mm ± 1½ mm
Number of coats	1
Calculated	per 20 kg: 2.4 m ² at 4½ mm
Allow for application losses, surface irregularities, etc.	
Specific gravity	1.96 kg/l (mixed product)
Flash points	
(Closed Cup).....	°C °F
resin	250 482
cure	128 262
Amercoat 171	24 75
Amercoat 175	not applicable

TYPICAL PROPERTIES:

Shear bond strength	
on steel	7.0 N/mm ²
Tensile strength	
(ASTM C-307)	> 28.4 N/mm ²
Compressive strength	
(ASTM C-579)	79.3 N/mm ²
Flexural strength	
(ASTM C-580)	37.7 N/mm ²
Modulus of elasticity	
(ASTM C-580)	ca. 6600 N/mm ²

* Surface discolouration occurs on exposure to certain chemical agents. However, product performance is not affected.

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Surface Preparation

Abrasive blast in accordance with Sa 2½ Swedish Standard SIS 05-5900 1967, ISO 8501-1 or Steel Structures Painting Council Specification SSPC-SP-10 as a minimum. Blast to achieve an average 75 µm profile as determined with *Testex* Tape or similar device.

Mixing

Always use mechanical mixing equipment when preparing Tideguard 171A. The rapid shearing action of a mechanical mixer enhances the workability of the material. A 'mortar' type mixer is the preferred mixing equipment. Stir resin and cure separately and then mix both components thoroughly. Pour the mixed liquid component into a large clean can and gradually add the powder component. Do not reverse order. Do not vary proportions. Continue power mixing until a smooth, uniform consistency is achieved. Mixing may also be done by using a ½" slow-speed drill with a 'Jiffy Mud & Resin Mixer' (as supplied by Goldblatt.) All three components must be at least 18°C/64°F before mixing. Mix only full units. Make no additions or deletions. Any deviations will inhibit curing and alter final physical properties. Tideguard 171A is ready for use immediately after mixing; no induction time is required. Do not mix more material than can be used within the working time: 2½ hours at 23°C/73°F. Material which has begun to set is unsatisfactory and must be discarded. Because Tideguard 171A cures by chemical reaction and not by release of solvents, it will set completely in confined areas.

Application Equipment

The following equipment is recommended for application of Tideguard 171A, but other equipment which can achieve a proper application may be used:

1. Quickspray Carrousel Pump with spray gun and material lines, Model No. 10-24-14-112-000, furnished by Quickspray Inc. Port Clinton, Ohio. Lubricate externals of pumping line, squeezing rollers and pressure plate with silicone oil before starting application and at least once each day the equipment is used.
2. Hopper gun, such as by Quickspray Inc. Model 60AT Port Clinton, Ohio, for use on small or repair areas.
NOTE: When Tideguard 171A is applied by carrousel pump Amercoat 171 starter liquid and Amercoat 175 cleaner have to be used to assist starting up of application and cleaning of equipment.

Application Data Summary

Optimum temperatures for handling and use of Tideguard 171A are between 18 - 40°C (64 - 104°F). For mixing, application, or setting below 18°C/64°F or above 40°C/104°F, see application instructions. To obtain the maximum performance for which Tideguard 171A is formulated, strict adherence to all application instructions is necessary.

Application Data

Substrate abrasive blasted steel
Application method spray
Potlife (at 20°C/68°F) 2½ hours (ASTM C-308)
Initial setting time (at 20°C/68°F) 10 hours (ASTM C-308)
Ready for service (at 20°C/68°F) 3 days
Potlife and drying times are dependent on temperature and quantities mixed.

Induction time not applicable

Environmental Conditions

Optimum temperatures for material and surfaces are between 18 and 40°C (64 and 104°F). Store material within this range for 48 hours prior to use. Below 18°C/64°F workability is reduced and could cause a breakdown in the spray equipment. Above 49°C/120°F two coats may be required. Tideguard 171A can be applied to surfaces with temperatures as low as 15°C/59°F; although curing is retarded, typical properties of the cured Tideguard will not be affected. Do not store Tideguard 171A at temperatures exceeding 40°C/104°F or in direct sunlight. To prevent moisture condensation during application, surface temperature must be at least 3°C/5°F above the dew point.

Repair

1. Check film thickness and quality of Tideguard 171A continuously during application. Corrections of irregularities of applied cladding thickness can easily be made, while the Tideguard 171A is still soft.
 - 1.1 *Low thickness areas*
Spray an additional coat to obtain specified thickness.
 - 1.2 *Holidays or damage down to steel*
Scrape the Tideguard 171A from that area and reapply Tideguard 171A.
 - 1.3 *Rough or porous appearing areas*
Correct with a short hair roller, which is wetted with Amercoat 65 thinner.
2. For the repair of cured Tideguard 171A, following procedures are recommended.
 - 2.1 *Low thickness areas*
Sweepblast and apply Tideguard 171A to specified thickness.
 - 2.2 *Holidays or damage down to steel*
Blast steel in accordance with instructions under Surface Preparation and roughen overlap area. reapply Tideguard 171A.
 - 2.3 *Rough or porous appearing areas*
Remove porous or rough Tideguard 171A by grinding or blasting. Check with a holiday detector, and if no holidays are noted reapply Tideguard 171A. If holidays are present remove Tideguard in these areas down to steel and reapply Tideguard 171A in accordance with instructions above.

Starter liquid Amercoat 171

Cleaner Amercoat 175

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Application Procedure

1. Lubricate internals of material line, pumping line and pole gun of carousel pump by pumping Amercoat 171 starter liquid through spray equipment before starting application of Tideguard 171A. Pour mixed Amercoat 171A starter liquid into the hopper. Remove nozzle cap and closed air atomisation valve from the spray gun. Start carousel pump slowly and circulate the Amercoat 171A starter liquid for at least 5 minutes through the pump.
2. Empty the hopper completely by pumping the Amercoat 171 starter liquid back into the starter liquid container. Pour one unit of Tideguard 171A into the hopper and adjust speed of the squeezing rollers to approx. 3 r.p.m. by regulating air motor. A small amount of air must always be bleeding through the spray gun air tip to keep material from backing up in the air tip.
3. Continue pumping until the uniform grey colour of the Tideguard 171A appears. Install the nozzle cap. Slowly open the air atomisation valve until a correct spray pattern is obtained. The spray pattern is also controlled by adjustment of the air steam plunger.
4. Apply the Tideguard 171A by moving the spray gun with rotating passes on the surface until specified thickness is achieved. Keep the spray gun at sufficient distance from the substrate to avoid, that the mechanical force of the spray disturbs the already applied Tideguard 171A or creates drops and deformation of the applied material.
5. Make periodic checks during the application for specified thickness using a wet thickness gauge.
6. Check coated areas for defects ½ hour to 2 hours after application, depending on temperatures. Imperfections can be corrected with a short hair roller, which is wetted with Thinner 21-06.
7. Check dry thickness of Tideguard 171A using a dry thickness gauge such as a mikrotest, model no SI-10.
8. Check for continuity using a holiday detector at 5 KV.
9. Repair as required - see repair procedures.
10. Tideguard 171A is cured and ready for service as follows:

°C/°F					
23/73	18/64	16/61	13/55	10/50	
3	5	7	10	14	days

Tideguard 171A is ready for handling after 16 hours and cured to initial setting after 8 hours at 21°C/70°F.
11. Tideguard 171A may receive water contact right after application; however, the wet coating should be protected from washing action which could remove the film while it is still soft.

Shipping Data

Packaging	
resin	3.30 kg in 5 l container
cure	1.70 kg in 2½ l drum
powder	15.00 kg in 20 l can
Shipping weight	
unit	approx. 22.4 kg
Shelf life	1 year from shipment date when stored indoors in unopened, original containers at 5 to 40°C (41 to 104°F).

Equipment clean up

Immediately after use, clean all application tools and spray nozzle by the following procedure:

1. Stir recommended cleaner to uniform.
2. Empty Tideguard 171A from the hopper. Clean the spray equipment by pouring an unit of recommended cleaner into hopper and run through until Tideguard 171A is removed from the material line.
3. Empty the recommended cleaner from the hopper and follow with a clean water rinse. Use sponge 'pigs' during this water cleaning procedure, to remove any remaining loose deposits from the side walls.

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Caution

Tideguard 171A resin and cure are combustible and may cause skin or eye irritation. Amercoat 171 starter liquid is flammable. Use with adequate ventilation. Avoid prolonged and repeated contact with skin. If used in confined areas, observe the following precautions to prevent hazards of fire or explosion or damage to health:

1. circulate adequate fresh air continuously during application and drying;
 2. use fresh air masks;
 3. prohibit all flames, sparks, welding and smoking.
- Do not empty into drains. Take precautionary measures against static discharges. For specific information on hazardous ingredients, required ventilation, possible consequences of contact, exposure and safety measures see Safety Data Sheet.

Amercoat 175 Cleaner is a mild irritant. do not take internally. Avoid prolonged and repeated contact with skin. Avoid contact with eyes. In case of contact with eyes, flush with plenty of water for 15 minutes and get medical attention

Safety

Since improper use and handling can be hazardous to health and cause of fire or explosion, safety precautions included with Product Data/Application Instruction and Material Safety Data Sheet must be observed during all storage, handling, use and drying periods.

Warranty

PPG warrants its products to be free from defects in material and workmanship. PPG's sole obligations and Buyer's exclusive remedy in connection with the products shall be limited, at PPG's option, to either replacement of products not conforming this warranty or credit to Buyer's account in the invoiced amount of the non-conforming products. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life, or one year from the delivery date, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

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