Carboguard 988

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

General Paint Name	Underwater-cure epoxy resin paint
Generic Type	Epoxy/ polyamide
Description	Solvent-free, high-build epoxy resin paint with underwater-cure characteristics. Recommended for the use for maintenance of steel, concrete, or wooden piles. Also recommended for sealing leaks of tanks and/or marine vessels, and maintenance of pitting corrosion of steel, and cracking of concrete.
Features	• 100% solid, excellent filling characteristics • Excellent water resistance
Color	Olive Green
Solid(s) Content	By Volume 100%
Solids Content	By Weight 100%
Mixed Density	1.69 +/- 0.03 g/ cm^3
VOC Values	**As Supplied** : 0 g/ L

Application Method	Dry Film Thickness (microns/coat)	Theoretical Coverage Rate (g/m^2)	Practical Coverage Rate (g/m^2)*
Hand, Trowel, Broad knife	3,000	5,070	5,070 ~ 6,080

*: Practical Coverage Rates are estimates based on average results. Individual results may vary based on several issues including the shape and location of the item being painted as well as environmental conditions like temperature, humidity and wind. The skill level of those applying the paint will also impact the final results. For details, consult Japan Carboline staff. Can be applied up to 50 mm per coat.

Wet/ Dry (As Supplied)	1.00
Dry Temp. Resistance	Continuous: 93°C (199°F) Non-Continuous: 121°C (250°F)
Limitations	Not recommended for immersion services in, or exposure to, strong solvents or strong caustic substances.

SUBSTRATES & SURFACE PREPARATION

General	Remove any oil or grease from surface to be coated with clean rags soaked in an adequate solvent. Remove all dirt, loose paint, spalling concrete, rotted wood, marine growth and other contaminants by abrasive blasting or high-pressure water blasting. Hand-tool or power-tool cleaning methods may be used but is of limited benefit and is time-consuming. Abrasive blasting can be done underwater as the initial air blast will clear a path through the water for the abrasive/air mixture. When working at the splash zone or in salt water, apply material over cleaned surfaces as soon as possible to minimize new corrosion.

MIXING & THINNING

Mixing	Scoop both Part A and B (A : B = 1 : 1 by volume) by gloved hands from each container, and then mix and knead the two components by hand until the yellow and black colors have combined to make a uniform olive green color. Apply this mixture immediately after mixing; no sweat-in time is required. To assist in mixing, keep the gloved hands and the surface of the materials wet with water during the mixing process.
Thinning	Not recommended. Carboline Thinner 2 may be used, but only for the cleaning purpose of application equipment. Use of thinners other than those supplied or recommended by JAPAN CARBOLINE may adversely affect product performance.
Ratio	Part A : Part B = 52 : 48 (by weight)
Pot Life	Below and above water, at 21°C; Golfball size mix: 40 minutes Baseball to Softball size mix: 30 minutes 1/2 - 1 gallon mix: 15 minutes These listed times are reduced by one-half at temperatures above 27°C. Do not mix more material than can be applied in the pot life listed. The material may still appear usable after exceeding its pot life, but it will not properly adhere to the substrates after application and curing.

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Application Tool	Hand, Trowel, and Broad Knife
Application Procedure	Spread material smoothly onto the surface in a 3-6 mm thick layer using enough pressure to displace water and air bubbles. Smooth out the area by hand. When starting another mix, start spreading at and away from the previously applied film. This will help prevent trapped air bubbles or leaving an area uncoated. If applying to dry surfaces in dry air, periodically rewet hands or tools with water to keep the product from sticking. When used as a patch or grout, force the material into the hole or crack and smooth by hand to the thickness needed. For larger patches greater than 12 mm, use a steel or fiberglass plate for added support. Apply to the substrate, then embed the support plate (cut larger than the hole) and apply product overall. When applied underwater or when wetted with water during application, the surface will form an emulsified lighter green "scum" layer. This layer is normal and the film under this "scum" layer remains undisturbed and will cure properly. The "scum" layer will cure and become part of the finish when it is cured above water; however, this layer will remain soft and uncured when the product is kept underwater during curing. When used for marine applications in splash zone areas, use all necessary precautions to protect the applicators. Wear wet or dry suits if necessary to help preserve body heat and use approved life jackets and safety lines. Avoid working in rough water.

APPLICATION CONDITIONS

Condition	Surface	Ambient	Humidity
Minimum		10°C (50°F)	
Maximum	50°C (122°F)	38°C (100°F)	100%

Do not apply or allow to cure in acidic (pH less than 6) or alkaline (pH greater than 9) environments, or in solutions containing solvents.

CURING SCHEDULE

Surface Temp.	Cure Time	Maximum Recoat Time
5°C (41°F)	7 Days	7 Days
10°C (50°F)	36 Hours	3 Days
20°C (68°F)	9 Hours	36 Hours
30°C (86°F)	6 Hours	12 Hours

Curing schedule is based on 3,000 micron (3 mm) dry film thickness. Higher film thickness or cooler temperatures will require longer cure times. If the maximum recoat times have been exceeded, the surface must be abraded by sanding prior to the application of additional coats.

PACKAGING, HANDLING & STORAGE

Shelf Life | 12 months (when kept in original unopened containers)

Storage | Store indoors.

Net Weight	10 kg kit
Part A	5.2 kg
Part B	4.8 kg

Flash Point (Setaflash) | Part A: 93°C
Part B: 93°C
Carboline Thinner 2: -9°C

Carboline Thinner 2 may be used, but only for the cleaning purpose of application equipment.

UPDATE INFORMATION

Last Modified | May, 2023

Control Number | PDS063-011

WARRANTY

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