

SELECTION & SPECIFICATION DATA

Generic Type	Phenalkamine epoxy
Description	High performance, surface tolerant epoxy that has excellent resistance to water and wastewater exposures. This coating exhibits outstanding moisture tolerance during application, low temperature cure capability, and very fast cure response for quick return to service. Can be used on structural steel, tanks, piping, and equipment exposed to industrial or marine environments.
Features	<ul style="list-style-type: none"> • High solids, low VOC • High build (200 microns) • Low temperature cure -7°C (20°F) • Excellent moisture tolerance during application • Fast cure response • Suitable for use in USDA inspected facilities • Registered with NZ AsureQuality for use in food & beverage industry (see Approvals NZ/AU, page 4) • Also available in glass flake (GF) and Non-Skid options (refer to relevant PDS)
Colour	Extensive range of AS 2700, BS 5252, RAL and customs tinted colours
Finish	Semi-Gloss (35-70)
Primer	Self-Priming, Zinc-rich, or epoxies
Dry Film Thickness	127 - 203 microns (5 - 8 mils) per coat
Solids Content	By Volume 80% +/- 2%
Theoretical Coverage Rate	31.5 m ² at 25 microns (1283 ft ² at 1.0 mils) 6.3 m ² at 125 microns (257 ft ² at 5.0 mils) 3.9 m ² at 200 microns (160 ft ² at 8.0 mils) Allow for loss in mixing and application.
VOC Values	As Supplied : 170 g/l mixed Thinner 2 : *20% 248 g/l These are nominal values and may vary with colour.
Limitations	<ul style="list-style-type: none"> • Epoxies lose gloss, discolour and eventually chalk in sunlight exposure. Discolouration is more pronounced with this product. • Unpredictable discolouration (may be severe with lighter colours) may also occur with prolonged exposure to UV; particularly during the application and curing phases. • Tinted colours are not suitable for immersed applications • This product has the ability to be applied over damp or even wet substrates. Remove excess water by blowing down the surface and apply in multiple coats to achieve desired film thickness. • Brush or roller, and multiple coats are preferred over wet substrates.

SUBSTRATES & SURFACE PREPARATION

General	Remove any oil or grease from surface to be coated with clean rags soaked in Carboline Thinner #2, or toluene.
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Carboguard 690

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SUBSTRATES & SURFACE PREPARATION

Steel | **Optimum performance:** Abrasive Blast SSPC SP10 (AS/NZS 1627.4 Class 2½) and achieve a uniform jagged blast profile of 35µm (minimum) and up to 75µm.
Commercial performance: Abrasive Blast SSPC SP6 (AS/NZS 1627.4 Class 2) and achieve a uniform jagged blast profile of 35µm (minimum) and up to 75µm.
In certain situations hand tool or power tool cleaning (SSPC-SP 2 or 3) are acceptable for coating thicknesses up to 200 microns.

Concrete or CMU | Clean and dry. Remove all loose, unsound concrete. Do not apply coating unless concrete has cured at least 28 days @ 21°C and 50% Relative Humidity or equivalent.
Consult Carboline Technical Service for more specific recommendations.

MIXING & THINNING

Mixing | Mix Part A thoroughly to achieve a consistent colour and an homogenous mix. Measure Parts A and B in the correct 4:1 v/v proportions and mix until a smooth blend is achieved

Thinning | Thin up to 12.5% by volume with Carboline Thinner #2 for spray applications.
For brush & roller application, thin up to 12.5% by volume with Thinner #25.

Pot Life | 1.5 hours at 24°C and less at higher temperatures or in larger mix volumes. Pot life ends when coating becomes too viscous to use.

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.

Spray Application (General) | Hold gun 300-350 mm from the surface and at a right angle to the surface

Conventional Spray | Pressure pot equipped with dual regulators, 9.5 mm (3/8") I.D. minimum material hose, 1.8 mm (.070") I.D. fluid tip and appropriate air cap.

Airless Spray | Pump Ratio: 45:1 (min.)
Volume Output: 12 lts/minute min.
Material Hose: 12.5mm (½") min.
Tip Size: 0.43-0.53mm (.017" - .021")
Output: 140-175kg/cm² (2000-2500 psi)
*PTFE packings are recommended and available from pump manufacturer.

Brush & Roller (General) | Not recommended for tank lining applications except when striping welds.
For non-immersion applications over damp surfaces, brush and roller is the preferred method.
Multiple coats may be required to obtain desired appearance, recommended dry film thickness and adequate hiding.
Avoid excessive re-brushing or re-rolling. For best results, tie-in within 10 minutes at 24°C.
Use a short-nap synthetic roller cover with phenolic core.

APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	7°C (45°F)	-7°C (20°F)	-7°C (20°F)	0%
Maximum	32°C (90°F)	49°C (120°F)	38°C (100°F)	90%

Industry standards are for substrate temperatures to be above the dew point. This product can tolerate damp substrates - See Brush & Roller section above. Special thinning and application techniques may be required above or below normal conditions.

CURING SCHEDULE

Surface Temp.	Dry to Touch	Maximum Recoat Time	Minimum Recoat Time
-7°C (20°F)	10 Hours	60 Days	72 Hours
2°C (35°F)	6 Hours	45 Days	17 Hours
16°C (60°F)	5 Hours	30 Days	6 Hours
24°C (75°F)	4 Hours	15 Days	2 Hours
32°C (90°F)	2 Hours	7 Days	2 Hours

These times are based on a 125-200 micron dry film thickness per coat. Higher film thickness, insufficient ventilation or cooler temperatures will require longer cure times and could result in solvent entrapment and premature failure. Excessive humidity or condensation on the surface during curing can interfere with the cure, can cause discoloration and may result in a surface haze. Any haze or blush must be removed by water washing before recoating. If the maximum recoat times have been exceeded, the surface must be abraded by sweep blasting or sanding prior to the application of additional coats. For force curing, contact Carboline Technical Service for specific requirements. For application and cure conditions below 2°C, dehumidify before, during, and after application to prevent ice formation on the surface.

Surface Temp.	Dry to Handle	Dry to Recoat
2°C (35°F)	48 Hours	2 Days
16°C (60°F)	24 Hours	40 Hours
24°C (75°F)	8 Hours	24 Hours
32°C (90°F)	6 Hours	24 Hours

The above times are based on 400 microns DFT of Carboguard 690 applied in a single coat. Honour the other precautions outlined above.

CLEANUP & SAFETY

Cleanup	Use Thinner #2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations.
Safety	Read and follow all caution statements on this product data sheet and on the MSDS for this product. Employ normal workmanlike safety precautions. Hypersensitive persons should wear protective clothing, gloves and use protective cream on face, hands and all exposed areas.
Ventilation	When used as a tank lining or in enclosed areas, thorough air circulation must be used during and after application until the coating is cured. The ventilation system should be capable of preventing the solvent vapour concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to insure all personnel are below guidelines. If not sure or if not able to monitor levels, use approved supplied air respirator.
Caution	This product contains flammable solvents. Keep away from sparks and open flames. All electrical equipment and installations should be made and grounded in accordance with relevant codes. In areas where explosion hazards exist, workers should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

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PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: 24 months at 24°C Part B: 12 months at 24°C *Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.
Shipping Weight (Approximate)	5 Litre Kit 9 kg. 10 Litre Kit 18 kg.
Storage Temperature & Humidity	4°C-38°C 0-95% Relative Humidity
Flash Point (Setaflash)	Part A: 33°C Part B: 27°C
Storage	Store Indoors. KEEP DRY

APPROVALS

Approvals NZ/AU	Food Processing NZ AsureQuality assessed & passed for food/beverage including dairy farm & factory non-incident contact. Ref: H3108
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WARRANTY

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