

SELECTION & SPECIFICATION DATA

Generic Type	Epoxy Phenalkamine
Description	An all-purpose immersion-grade epoxy that has a variety of attributes including low-temperature cure, surface tolerance, fast recoat times, moisture tolerance during application and cure, and excellent corrosion protection. Can be used direct to metal as a corrosion resistant primer or as an intermediate coating over other primers. Suitable for both maintenance and new construction projects due to its excellent surface wetting characteristics and quick cure for handling. May also be used for immersion in fresh or salt water (marine) exposures.
Features	<ul style="list-style-type: none"> • Low temperature cure (-7°C) • Excellent corrosion protection • Excellent application characteristics • Fast recoat times • Moisture tolerant during application • Extended self recoat window for normal atmospheric exposures (6 month self recoat) • Approved for use in food & dairy processing plants (refer to "Approvals NZ/AU" section) • Tested & approved primer under Nullifire intumescent base-coats
Colour	Black, White, & Light Grey
Gloss	Satin
Primer	Self-Priming
Film Build	75 - 150 micron dry per coat
Solid(s) Content	By Volume 65% +/- 2%
Theoretical Coverage Rates	8.4 m ² /litre at 75 microns 6.3 m ² /litre at 100 microns 5 m ² /litre at 125 microns Allow for loss in mixing and application.
VOC Value(s)	272 grams per litre (mixed)
Dry Temp. Resistance	Continuous: 82°C (180°F) Non-Continuous: 104°C (219°F)
Limitations	Epoxies lose gloss, discolour and eventually chalk in sunlight exposure.
Topcoats	May be coated with Acrylics, Epoxies, Alkyds, Polyurethanes, Polyaspartics, Polysiloxanes, Antifoulings, or Intumescent Basecoats depending on exposure and need.

SUBSTRATES & SURFACE PREPARATION

General	Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants as described in SSPC-SP 1 (AS 1627.1).
Steel	<p><u>Atmospheric Exposure</u>: For optimal performance: Abrasive blast to SSPC SP10, (AS 1627.4 Sa 2½ minimum) with a 40-75 micron blast profile.</p> <p>For commercial performance: SSPC-SP 6 (AS 1627.4 Sa 2 or greater) with a 40-75 micron blast profile.</p> <p>For small areas, & low cost preparation, Hand Tool or Power Tool clean in accordance with SSPC-SP 3 (AS 1627.2 St 3) to produce a rust-scale free surface</p>

Carboguard 635

PRODUCT DATA SHEET



SUBSTRATES & SURFACE PREPARATION

	<p><u>Immersion Service</u>: Near-white metal cleanliness in accordance with SSPC-SP 10, (AS 1627.4 Sa 2½ minimum) with a 40-75 micron blast profile.</p>
Galvanised Steel	<p>Galvanizing requires a roughened surface for optimum adhesion/performance of high build epoxies. Ensure there are no chemical treatments that may interfere with adhesion; and abrade (80 grit) or sweep abrasive blast the surface to establish a suitable roughness (typically 25 microns). Avoid aggressive preparation that may remove the zinc coating <u>Cleaned and roughened galvanizing should be coated immediately after preparation, particularly in humid conditions above 50% RH. Do not allow adhesion-compromising zinc hydroxide (white rust) to form before application.</u></p>
Concrete or CMU	<p>Remove all loose, unsound concrete. Remove all oils or other non-compatible sealers or treatments. Do not apply coating unless the concrete has cured at least 28 days @ 21°C and 50% relative humidity or equivalent. Seal the concrete with Carboguard 1340 or other approved sealer.</p>
Stainless Steel	<p>Surface profile should be dense and angular, achieving a minimum of 25 microns and is best achieved through abrasive blasting with non-metallic media such as aluminium oxide. Remove all contaminants that would interfere with the performance of stainless steel for the intended service such as, but not limited to, embedded iron or chlorides</p>

MIXING & THINNING

Mixing	Mix separately, then combine and mix until homogenous.
Thinning	<p>Spray Application: For atmospheric exposures under normal conditions thin up to 15% (typically 10-15%) by volume with Thinner #76 or #2. May be thinned up to 20% maximum by volume for certain application requirements – Consult Technical Services for further information.</p> <p>Brush / Roller Application: For atmospheric exposures under normal conditions thin up to 10% (typically 5%) by volume with Thinner #25.</p> <p>Sealing Thermal Metal Spray: For use as a thermal metal spray sealer only, Carboguard 635 may be thinned up to 50% with Thinner #12 as per full detail in issued specifications.</p> <p>Immersion Exposure: Thin up to 5% by volume with Thinner #10.</p>
Ratio	4:1 by volume (Part A : Part B)
Pot Life	3 hours at 24°C and less at higher temperatures. 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.

Conventional Spray	Pressure pot equipped with dual regulators, 9.5 mm (3/8") I.D. minimum material hose, 1.8 mm (0.070") I.D. fluid tip and appropriate air cap.
Airless Spray	Pump Ratio: 30:1 min. Volume Output: 9.5 l/min Material Hose: 9.5 mm (3/8") I.D. min. Tip Size: 0.017-0.021" (0.43-0.53 mm)

APPLICATION EQUIPMENT GUIDELINES

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Brush & Roller (General)	<p>Fluid Pressure: 2000-2500 psi (13.8-17.2 MPa) *PTFE packings are recommended and available from pump manufacturer.</p> <p>For 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.</p>
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APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	7°C (45°F)	-7°C (19°F)	-7°C (19°F)	0%
Maximum	32°C (90°F)	46°C (115°F)	38°C (100°F)	95%

Industry standards are for substrate temperatures to be above the dew point. Carboguard 635 is unique in that it can tolerate damp substrates. See Brush or Roller above. Special thinning and application techniques may be required above or below normal conditions.

CURING SCHEDULE

Surface Temp.	Dry to Touch	Dry to Handle	Dry to Topcoat Minimum	Dry to Topcoat Maximum
-7°C (20°F)	4 Hours	36 Hours	24 Hours	180 Days
2°C (35°F)	2 Hours	16 Hours	2 Hours	180 Days
10°C (50°F)	1 Hour	10 Hours	1 Hour	180 Days
24°C (75°F)	30 Minutes	3 Hours	45 Minutes	180 Days
32°C (90°F)	15 Minutes	30 Minutes	30 Minutes	90 Days

Marine Use : Refer to the next Curing Schedule below.

These times are to be used as a guideline.

The listed times in the chart above are based on a 100-150 microns dry film thickness per coat. Deviation from those thicknesses may compromise the performance and adhesive properties of the film. Higher film thickness, insufficient ventilation or cooler temperatures could result in solvent entrapment and premature failure. Excessive humidity or condensation on the surface during curing will not affect performance but may cause discoloration and 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. Do not apply to substrates with ice or ice crystal formation. Dehumidify or raise the temperature to eliminate ice on the substrate. This product will tolerate drops in temperature to -17°C during its cure and will continue to cure when the temperature rises. Follow "Cure for Service" guideline listed above to determine when the product is fully cured.

Topcoating with Polyurethane Finishes: Many high performance polyurethanes have a limited time to topcoat maximum, some as low as 5 days at 20°C; before proceeding applicators are advised to refer to the relevant Coating Specification or contact Carboline Technical Service for specific information.

Maximum Topcoat Time for Atmospheric Use will depend on topcoat selected: contact Carboline Technical Service for specific information.

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CURING SCHEDULE (MARINE / ANTIFOULING)

Surface Temp.	Dry to Topcoat w/ Antifouling (Min.)	Dry to Topcoat w/ Antifouling (Max.)	Dry to Topcoat with Itself (Max.)
-7°C (19°F)	24 Hours	36 Hours	30 Days
2°C (36°F)	2 Hours	16 Hours	30 Days
10°C (50°F)	1 Hour	8 Hours	30 Days
24°C (75°F)	45 Minutes	4 Hours	30 Days
32°C (90°F)	30 Minutes	3 Hours	30 Days

The curing schedule above references curing times for immersion service when an antifouling topcoat is used.

The optimum time to topcoat with an antifouling is when the film is "touch-tacky". If the touch-tacky time has been exceeded, or if the film is "glossy", you can generally re-prime/refresh the applied coat with a fresh coat of itself. High temps and/or sunlight exposure may shorten this recoat schedule.

Marine Use : Undocking time of 24 hours @ 24°C

APPROVALS

Approvals NZ/AU	Food Processing - New Zealand AsureQuality® assessed for food/beverage industry including dairy factory and dairy farm non-incident contact (assessment reference number: h3106b).
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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. 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 suitable 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 local electrical codes. In areas where explosion hazards exist, workers should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: 48 months at 24°C Part B: 24 months at 24°C Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers. For products/components exceeding the stated shelf life, contact Technical Services for further advice.
Storage Temperature & Humidity	4°C-38°C 0-95% Relative Humidity
Flash Point (Setaflash)	Part A: 19°C

PACKAGING, HANDLING & STORAGE

Part B: 27°C
Mixed: 29°C

Shipping Weight (Approximate) | • 5 litre Kit - 8.4 kg.
• 10 litre Kit - 16.7 kg.

Storage | Store Indoors. KEEP DRY

WARRANTY

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