## Selection & Specification Data

<table>
<thead>
<tr>
<th>Generic Type</th>
<th>Cycloaliphatic amine epoxy with glass reinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>A two-component, glass reinforced epoxy coating. Carboguard 890 GF is chemical resistant and has a wide range of uses in industrial environments. Its glass reinforcement allows for excellent internal film strength, hardness, impact and abrasion resistance. Most commonly, it is used in severe service (above or below the water line) in marine applications where these resistance qualities are desired.</td>
</tr>
</tbody>
</table>
| **Features**            | • Convenient two component mix  
                           • Excellent chemical resistance  
                           • Surface tolerant characteristics for less severe applications  
                           • Self-priming and primer / finish capabilities  
                           • Excellent abrasion resistance and hardness  
                           • VOC compliant to current AIM regulations |
| **Color**               | Refer to Carboline colour guide. Certain colours may require multiple coats for hiding. Use only factory made colours for immersion applications. |
| **Finish**              | Flat (0-10) |
| **Primer**              | Normally self-priming. May be applied over other epoxy primers.  
                           |
| **Dry Film Thickness**  | 200 to 500 microns in a single coat |
| **Solid(s) Content**    | 77% ± 2% |
| **Theoretical Coverage Rates** | 3.1m²/litre at 250 microns |
| **VOC Value(s)**        | As supplied: 204 g/litre  
                           Thinned 10% with Thinner # 2: 264 g/litre  
                           Thinned 12% with Thinner # 33: 276 g/litre  
                           Use Thinner # 2 up to 10% for Carboguard 890 GF where non-photochemically reactive solvents are required. |
| **Dry Temp. Resistance**| Continuous: 149°C (300°F)  
                           Non-Continuous: 177°C (351°F) |
| **Under Insulation Resistance** | Continuous: 149°C (300°F)  
                                    Discolouration and loss of gloss is observed above 93°C |
| **Limitations**         | Do not apply over latex coatings. Discolouration may be objectionable if used as a topcoat. |
| **Topcoats**            | Acrylics, Epoxies, Polyurethanes |

## Substrates & Surface Preparation

| **General** | Surfaces must be clean and dry. Employ adequate methods to remove dirt, dust, oil and all other contaminants that could interfere with adhesion of the coating. |
**SUBSTRATES & SURFACE PREPARATION**

**Steel**

- **Immersion:** ISO 8501 Sa2½ Profile: 75 to 100 microns
- **Non-immersion:** ISO 8501 Sa2 Profile: 50 to 75 microns
  ISO 8501 St2 or St3 are suitable cleaning methods for mild (non-immersion) environments.

**Galvanized Steel**

Abrasive blast clean to achieve a minimum 50 to 75 micron profile.

**Concrete**

Concrete must be cured 28 days at 24°C and 50% relative humidity or equivalent. Prepare surfaces in accordance with ASTM D4258 Surface Cleaning of Concrete and ASTM D4259 Abrading Concrete. Voids in concrete may require surfacing. Prime with Carboguard 1340.

**PERFORMANCE DATA (TYPICAL VALUES)**

<table>
<thead>
<tr>
<th>Test Method</th>
<th>System</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adhesion (ASTM D359)</td>
<td>Blasted Steel 1 ct. 890 GF</td>
<td>5A</td>
</tr>
<tr>
<td>Flame &amp; Smoke (ASTM E84)</td>
<td>2 cts. 890 GF</td>
<td>5 Flame 5 Smoke Class A</td>
</tr>
<tr>
<td>Pencil Hardness (ASTM D3363)</td>
<td>Blasted Steel 2cts. 890 GF</td>
<td>Greater than 8H</td>
</tr>
<tr>
<td>Salt Fog (ASTM B117)</td>
<td>Blasted Steel 1 ct. IOZ 1 ct. 890 GF</td>
<td>No effect on plane, no rust in scribe and no undercutting after 4000 hours</td>
</tr>
<tr>
<td>Salt Fog (ASTM B117)</td>
<td>Blasted steel 2 cts. 890 GF</td>
<td>No effect on plane, rust in scribe. 1.6mm undercutting at scribe after 2000 hours</td>
</tr>
<tr>
<td>Scrub Resistance (ASTM D2486)</td>
<td>Blasted Steel 1 ct. 890 GF</td>
<td>93% gloss retained after 10,000 cycles w/ liquid scrub medium</td>
</tr>
</tbody>
</table>

**MIXING & THINNING**

**Mixing**

- Power mix Carboguard 890 GF Part A and Part B separately, then combine and power mix. DO NOT MIX PARTIAL KITS.

**Spray:** Up to 10% with Thinner # 2

**Brush:** Up to 12% with Thinner # 33

**Roller:** Up to 12% with Thinner # 25

**Thinning**

- Thinner # 33 can be used for spray in hot / windy conditions. Use of thinners other than those supplied or recommended by StonCor Africa may adversely affect product performance and void product warranty, whether expressed or implied.
- * See VOC values for thinning limits.

**Ratio**

- 1:1 ratio (A to B)

**Pot Life**

- 3 Hours at 24°C

Pot life ends when coating loses body and begins to sag. Pot life times will be less at higher temperatures.

**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**

- This is a high solids coating and may require adjustments in spray techniques. Wet film thickness is easily and quickly achieved.
- Wet all hoses with solvent prior to using product.
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, 10mm I.D. minimum material hose, .110" I.D. fluid tip and appropriate air cap.

Airless Spray
Pump Ratio: 45:1 (min)*
GPM Output: 3.0 (min)
Material Hose: 10mm ID (min)
Tip Size: .027" to .041"
Output PSI: 2200 to 2500
* Teflon packings are recommended and available from the pump manufacturer. Remove all filters.

Brush & Roller
(General)
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.

Brush
Use a medium bristle brush

Roller
Use a short nap synthetic roller cover with phenolic core

APPLICATION CONDITIONS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Material</th>
<th>Surface</th>
<th>Ambient</th>
<th>Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>10°C (50°F)</td>
<td>10°C (50°F)</td>
<td>10°C (50°F)</td>
<td>0%</td>
</tr>
<tr>
<td>Maximum</td>
<td>32°C (90°F)</td>
<td>52°C (126°F)</td>
<td>43°C (109°F)</td>
<td>80%</td>
</tr>
<tr>
<td>Optimum</td>
<td>23°C (73°F)</td>
<td>23°C (73°F)</td>
<td>24°C (75°F)</td>
<td>40%</td>
</tr>
</tbody>
</table>

This product simply requires the substrate temperature to be above the dew point. Condensation due to substrate temperatures below the dew point can cause flash rusting on prepared steel and interfere with proper adhesion to the substrate. Special application techniques may be required above or below normal application conditions.

CURING SCHEDULE

<table>
<thead>
<tr>
<th>Surface Temp.</th>
<th>Dry to Recoat</th>
<th>Dry to Topcoat w/ Other Finishes</th>
<th>Final Cure</th>
</tr>
</thead>
<tbody>
<tr>
<td>10°C (50°F)</td>
<td>12 Hours</td>
<td>24 Hours</td>
<td>3 Days</td>
</tr>
<tr>
<td>16°C (61°F)</td>
<td>8 Hours</td>
<td>16 Hours</td>
<td>2 Days</td>
</tr>
<tr>
<td>24°C (75°F)</td>
<td>4 Hours</td>
<td>8 Hours</td>
<td>1 Day</td>
</tr>
<tr>
<td>32°C (90°F)</td>
<td>2 Hours</td>
<td>4 Hours</td>
<td>16 Hours</td>
</tr>
</tbody>
</table>

* Based on 100 to 200 microns dry film thickness 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 topcoating. During high humidity conditions, it is recommended that the application be done while temperatures are increasing. Maximum recoat / topcoat times are 30 days for epoxies and 90 days for polyurethanes at 24°C. 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.

Curing Details | Relative Humidity: 50%
CLEANUP & SAFETY

Cleanup
Use Thinner # 2. 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 material safety data sheet 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 vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to ensure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH 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 the National Electrical Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

PACKAGING, HANDLING & STORAGE

Shelf Life
Part A: 36 Months at 24°C
Part B: 15 Months at 24°C

*Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.

Shipping Weight (Approximate)
10 Litre Kit
Part A: 6.93kg
Part B: 8.44kg
Part C: 1.96kg

Storage Temperature & Humidity
4 to 43°C
0 to 100%

Flash Point (Pensky Martens Closed Cup)
Part A: 32°C
Part B: 23°C
When mixed: 26°C

Storage
Store indoors

WARRANTY
To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline Company to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. We guarantee our products to conform to Carboline quality control. We assume no responsibility for coverage, performance, injuries or damages resulting from use. Carboline’s sole obligation, if any, is to replace or refund the purchase price of the Carboline product(s) proven to be defective, at Carboline’s option. Carboline shall not be liable for any loss or damage. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated.