

## SELECTION & SPECIFICATION DATA

<b>Generic Type</b>	Inorganic silicate
<b>Description</b>	Armorlast I is an inorganic finish coat. The film exhibits exceptional toughness, high temperature resistance, and is available in a limited assortment of colors. Being inorganic, Armorlast I provides exceptional weatherability and long-term performance. When used over inorganic zinc primers, Armorlast I allows for continued curing of the primer, reducing fabrication time. A two coat system comprising of Carbozinc 11 or Carbozinc 11 HS and Armorlast I offers an ultra-long lasting corrosion resistant system for steel structures.
<b>Features</b>	<ul style="list-style-type: none"> <li>• Ultra-long corrosion protection when applied over Carbozinc 11 Series inorganic zinc primers</li> <li>• Extremely fast throughput in fabrication shops</li> <li>• Can be applied over Carbozinc 11 or Carbozinc 11 HS after as little as two hours cure</li> <li>• Cures to handle quickly at ambient temperature</li> <li>• Outstanding weatherability</li> <li>• Isocyanate free</li> <li>• Meets Class B Slip Co-Efficient over approved primer</li> <li>• Exceeds ISO 12944-9 CX testing criteria as part of a two coat inorganic system</li> </ul>
<b>Color</b>	Grey (1709), White (1864) Other colors may be available upon request. Contact your Carboline Representative for availability.
<b>Finish</b>	Flat
<b>Primer</b>	<b>Best when used over solvent-based inorganic zinc silicate primers like Carbozinc 11 and Carbozinc 11 HS.</b> Suitable organic zinc primers such as Carbozinc 808, Carbozinc 858 Series, and Carbozinc 859 Series may be used for lower maximum dry temperature service and/or for repairing mechanical damage to the coating system that may result in bare metal being exposed. Refer to the specific organic zinc primer Product Data Sheet for the maximum dry temperature resistance.
<b>Dry Film Thickness</b>	3 - 5 mils (76 - 127 microns) . Not to exceed 7 mils (175 microns)
<b>Solids Content</b>	By Volume 57% +/- 2%
<b>Theoretical Coverage Rate</b>	914 ft <sup>2</sup> /gal at 1.0 mils (22.4 m <sup>2</sup> /l at 25 microns) 305 ft <sup>2</sup> /gal at 3.0 mils (7.5 m <sup>2</sup> /l at 75 microns) 183 ft <sup>2</sup> /gal at 5.0 mils (4.5 m <sup>2</sup> /l at 125 microns) Allow for loss in mixing and application.
<b>VOC Value(s)</b>	Per EPA Method 24: 3.0 lbs/gal (360 g/l) mixed 12 oz/gal of Thinner 254: 3.43 lbs/gal (410 g/l) 6 oz/gal of Thinner 33: 3.21 lbs/gal (385 g/l)  This product contains US EPA VOC-exempt solvent(s). This product may be thinned with alternate VOC exempt thinners. Consult Carboline Technical Service.
<b>Dry Temp. Resistance</b>	Continuous: 800°F (427°C) Non-Continuous: 1000°F (538°C)  *Dry temperature resistance listed above is only applicable when applied over suitable solvent-based inorganic zinc primers.

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**Limitations** | Do not use over water-based inorganic zinc-rich primers.

## 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. Refer to specific primer's Product Data Sheet for detailed requirements of the specified primer.

**Steel** | Apply over properly applied inorganic zinc primers. Allow at least 2 hour dry time on inorganic zinc primers prior to topcoating.

## MIXING & THINNING

**Mixing** | Power mix to a uniform consistency.

**Thinning** | May be thinned up to 5% by volume with Carboline Thinner 33, or 5-10% with Thinner 254 for hot (85 °F [29 °C]) or windy conditions. For additional thinning beyond 10%, use Thinner 236E.

**Pot Life** | Indefinite.

Avoid moisture contamination.

## 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)** | This is a high solids coating and may require adjustments in spray techniques. Wet film thickness is easily and quickly achieved. The following spray equipment has been found suitable and is available from equipment manufacturers.

**Conventional Spray** | Conventional pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, and 0.043" to 0.070" fluid tip and appropriate air cap.

**Airless Spray** | Pump Ratio: 30:1 (min.)  
 Volume Output: 2.5 gpm min. - 11.5 l/min min.  
 Material Hose: 1/2" I.D. min. - 12.5mm min.  
 Tip Size: 0.017-0.021" - 0.43-0.53mm  
 Output Pressure: 2100-2500 psi - 135-170kg/cm<sup>2</sup>

**Brush** | For touch up use only. Use medium bristle brush and avoid rebrushing. Two coats may be required to obtain desired thickness and appearance. For best results tie-in within 5 min.

## APPLICATION CONDITIONS

Condition	Material	Surface	Ambient	Humidity
Minimum	40°F (4°C)	40°F (4°C)	40°F (4°C)	30%
Maximum	90°F (32°C)	200°F (93°C)	110°F (43°C)	95%

Industry standards are for substrate temperatures during application to be 5 °F (3 °C) above the dew point. This product requires moisture to complete its final cure. Use water mist if humidity is below minimums.

## CURING SCHEDULE

Surface Temp.	Dry to Touch	Dry to Handle	Maximum Recoat
60°F (16°C)	30 Minutes	4 Hours	90 Days
75°F (24°C)	15 Minutes	2 Hours	90 Days
90°F (32°C)	10 Minutes	1 Hour	90 Days

Armorlast I may be applied to Carbozinc 11 Series inorganic zinc silicate primers after two hours dry at 75°F, >30% relative humidity. These times are based on recommended coverage rates. Curing under low humidity conditions will extend times. Consult Carboline Technical Service with questions.

## CLEANUP & SAFETY

<b>Cleanup</b>	Use Thinner 2 or Acetone. In case of spillage, absorb and dispose of in accordance with local applicable regulations.
<b>Safety</b>	Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions. Use adequate ventilation. Keep container closed when not in use.
<b>Ventilation</b>	When used 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 insure all personnel are below guidelines. If not sure or if not able to monitor levels, use MSHA/NIOSH approved supplied air respirator.

## PACKAGING, HANDLING & STORAGE

<b>Shelf Life</b>	6 months at 76 °F (24 °C) *Shelf Life: (actual stated shelf life) when kept at recommended storage conditions and in original unopened containers.
<b>Storage Temperature &amp; Humidity</b>	40-90 °F (4-32 °C) 0-90% Relative Humidity
<b>Storage</b>	Store Indoors. KEEP DRY.
<b>Shipping Weight (Approximate)</b>	1 Gallon (Can) - 13 lbs (kg) 5 Gallons (Pail) - 65 lbs (kg)
<b>Flash Point (Setaflash)</b>	Armorlast I: 66°F (19°C) Thinner 33: 75°F (24°C) Thinner 2: 23°F (-5°C) Thinner 254: 167°F (75°C)

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## **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 to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. Carboline warrants our products to be free of manufacturing defects in accord with applicable Carboline quality control procedures. THIS WARRANTY IS NOT VALID WHEN THE PRODUCT IS NOT: (1) APPLIED IN ACCORDANCE WITH CARBOLINE'S SPECIFICATIONS, AND/OR (2) PROPERLY STORED, CURED, AND USED UNDER NORMAL OPERATING CONDITIONS. Carboline assumes no responsibility for coverage, performance, injuries, or damages resulting from use of the product. If this product is found not to perform as specified upon inspection by a Carboline representative during the warranty period, Carboline's sole obligation, if any, is to replace the Carboline product(s) proven to be defective or refund the purchase price thereof, at Carboline's sole option. Carboline shall not be liable for any other losses or damages. This warranty excludes (1) labor and costs of labor for the application or removal of any product, and (2) any incidental or consequential damages, whether based on breach of express or implied warranty, negligence, strict liability or any other legal theory. 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. The whole text of this Product Data Sheet, as well as the documents derived from it, have been written in English, and for legal purposes the English version shall prevail.