

Selection & Specification Data

Generic Type	Single package silicone finish
Description	High-performance finish for areas exposed to extreme temperatures. Suitable for service from 204°C-538°C. Colour stability at maximum temperature will depend on color selected. Heat curing will result in full film formation properties.
Features	Resistant to severe thermal shock Provides outstanding long-term performance when applied over Carbozinc inorganic zinc primers Air-dries to touch (see curing schedule)
Gloss	Gloss initial – flat after heat curing
Colour & Dry Temperature Resistance	Available in the following stock colors: Black (C900): 540°C continuous Aluminium (C901): 540°C continuous Black and Aluminium: allow surges to 650°C Gray (C705): 400°C All other colors are made to order and have temperature resistance in the 340°C-400°C range.
Primers	Inorganic zincs. None needed for stainless steel or aluminium.
Topcoats	Normally none
Dry Film Thickness	50 microns DFT, wet 100 microns. Do not exceed 2.0 mils in a single coat. 4700 Aluminium: 40 microns. Two coats are recommended over stainless steel and one or two coats over inorganic zincs.
Solids Content	By Volume: 48% + 2 4700 Aluminium by volume: 30% + 2
Theoretical Coverage Rate	19 m ² /l at 25 microns 4700 Aluminium: 12 m ² /l at 25 microns.
Mix Ratio	N/A – single pack product
VOC Values	<u>As Supplied:</u> 456 g/l (sprayed un-thinned except in hot application) Thinned: 10% with #235 492 g/l <u>4700 Aluminium as supplied:</u> 604 g/l) Thinned: 6% with #10 618 g/l or 12% with #10 632 g/l
Limitations	Do not use for immersion service. Do not exceed thickness recommendation. Excessive film thickness may result in blistering and delamination when the temperature is increased.

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.
Steel	AS 1627.4 Class 2½ (SSPC-SP 10) with a 12-25 micron surface profile. Prime with specific Carboline primers as recommended by your Carboline sales representative.
Stainless Steel	Sweep blast cleaning is recommended.
Aluminium	Sweep blast cleaning is recommended.

*NOTE:

The alignment of aluminium flakes in aluminium-filled finishes is very dependent on application conditions and techniques. Care must be taken to keep conditions as constant as possible to reduce variations in final appearance. It is also advisable to work from a single batch of material and / or box-mix consecutive containers since variations can occur from batch to batch. For more information consult Carboline Technical Service Department.

Thermaline[®] 4700 & 4700 Aluminium

Application Equipment

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. **General Guidelines:**

Spray Application (General) The following spray equipment has been found suitable for application of this material. Conventional spray application is preferred.

Conventional Spray Use DeVilbiss P-MBC, E-needle and tip, and a 704 air cap or equal. Use adequate air volume for proper equipment operation. Hold gun 250-300 from the surface and at right angles. Overlap each pass 50%. Apply 100 wet microns to obtain desired dry film. Airless not recommended.

Airless Spray Not recommended

Brush Use a medium bristle brush

Roller Use a short-nap mohair roller cover with phenolic core.

Note Different application procedures or methods will result in streaky or non-uniform appearance with aluminium containing products.

Mixing & Thinning

Mixing Power mix until uniform in consistency. Avoid excessive air entrapment.

Ratio N/A – single component product

Thinning Normally not required. May be thinned up to 10% by volume with Thinner #235. For "hot" applications exceeding 66°C. 4700 Aluminium may be thinned up to 12% by volume with Thinner #10. Use of thinners other than those supplied or recommended by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.

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 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 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.

Caution This product contains flammable solvents. Keep away from sparks and open flames. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

Application Conditions

Condition	Material	Surface	Ambient	Humidity
Normal	25°C	52°C	27°C	50%
Minimum	13°C	4°C	4°C	0%
Maximum	35°C	148°C	39°C	90%

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

Substrate Temp.	Dry to Touch	Dry to Self Recoat	Dry to Handle*	Final Cure
25°C	1 hour	4 hours	8 hours	2 hours at 200°C

These times are based on a 50 micron 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. During high humidity conditions, it is recommended that the application be done while temperatures are increasing. If the final cure time is exceeded, the surface must be abraded prior to the application of additional coats.

* Dry to handle (thumb-twist test). Final hardness and ultimate film properties are not reached until heat curing has been achieved. Final cure: To obtain optimal properties, must be cured at 200°C. After a 2 hour flash-off at 75°F, allow temperature to increase slowly to 200°C. Hold at 175°C to 230°C for 2 hours. The coating may then be placed in service.

Packaging, Handling & Storage

Pack Sizes 4 litre cans

Flash Point (Setflash) Thermaline 4700: 28°C
Thermaline 4700 Aluminium: 20°C

Storage Temperature & Humidity Store under cover
Between 4°C-38°C
0-90% Humidity

Shelf Life **4700:** 24 months at 25°C
4700 Aluminium: 12 months at 25°C

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

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The Carboline logo features the word "carboline" in a stylized, lowercase font with a swoosh underline that extends to the right.

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An  Company

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