product data carboline®

Carbomastic® 15 & Carbomastic 15 FC

Selection & Specification Data

Generic Type
Cycoaliphatic Amine Epoxy

Description
Aluminum-pigmented, low-stress, high-solids mastic with outstanding performance properties and proven field history. Carbomastic 15 was the pioneer mastic coating in a number of industrial markets and still today, provides unequaled levels of barrier protection and corrosion resistance over existing finishes and rusted or SSPC-SP2 or SP3-cleaned steel.

Features
- Single coat application characteristics
- Suitable as a topcoat for most tightly adhered existing coatings
- Excellent choice for field touch-up of zinc-rich primers and galvanized steel
- Unique formulation with aluminum *flakes* provides exceptional barrier protection
- May be applied at 35°F (2°C) when CM 15 FC's part B is utilized.
- VOC compliant to current AIM regulations

Color
CM 15: Aluminum (C901); Red (M500)
CM 15 FC: Aluminum (C901); Red (M500) is available for use as a contrasting primer in multiple coat applications, but should always be topcoated. Color variations within a batch and from batch-to-batch may occur due to the metallic pigments and variations in application techniques and conditions.

Finish
Flat

Primers
Self-priming. May be applied over most tightly adhering coatings as well as inorganic zinc primers. A mist coat may be required to minimize bubbling over inorganic zinc primers.

Topcoats
Acrylics, Alkyds, Epoxies, Polyurethanes

Dry Film Thickness
3.0 mils (75 microns) over existing coatings and 5.0 mils (125 microns) minimum on rusted steel.
7.0-10.0 mils (175-250 microns) in one or two coats for severe exposures.
Do not exceed 10.0 mils (250 microns) in a single coat.

Solids Content
By Volume: 90% ± 2%

Theoretical Coverage Rate
1444 mil ft^2 (36.0 m^2/l at 25 microns)
288 ft^2 at 5 mils (7.2 m^2 /l at 125 microns)
Allow for loss in mixing and application

VOC Values
As supplied: 0.7 lbs/gal (88 g/l)
Thinned:
32 oz/gal w/ #76: 1.9 lbs/gal (231 g/l)
32 oz/gal w/ #10: 2.0 lbs/gal (242 g/l)
These are nominal values.

Dry Temp. Resistance
Continuous: 180°F (82°C)
Non-Continuous: 250°F (121°C)
Discoloration is observed above 180°F (82°C).

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 CM 15 & CM 15 FC
SSPC-SP6 with a 2.0-3.0 mil (50-75 micron) surface profile for maximum protection. SSPC-SP2, SP3, SP7, or SP12 are also acceptable methods.

Galvanized Steel (Aged)
SSPC-SP1

Galvanized Steel (New)
SSPC-SP1 and prime with specific Carboline primers defined in *Market Guides* .

Previously Painted Surfaces
Lightly sand or abrade to roughen and degloss the surface. Existing paint must attain a minimum 3B rating in accordance with ASTM D3359 "X-Scribe" adhesion test.

Performance Data

Test Method	System	Results	Report #
ASTM D522 Flexibility	Blasted steel 1 ct. CM15	A) Conical - crack 0.38", actual elongation 48.57% B) Cylindrical- no cracking observed	A) SR340 B) ITL223
ASTM D4060 Taber Abrasion	1 ct. CM15	89.8 mg per 3000 cycles CS 17 wheel, 1000 gm load,	02362
ASTM G14 Impact Resistance	A) Blasted steel 1 ct. CM15 B) Rusted steel 1 ct. CM15	Area damaged: A) 1/4 inch (0.25") B) 1/4 - 9/16 inch (0.44")	02829
ASTM B117 Salt Spray	Rusted steel 1 ct. CM 15	No blistering, rusting, or softening No rust creep from scribe	02460
ASTM D1735 Water Fog	Rusted steel 1 ct. CM 15	No blistering or softening No creep from scribe	SR 295

Test reports and additional data available upon written request.

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Carbomastic®15 & 15 FC

Application Equipment

Spray Application (General)
The following spray equipment has been found suitable and is available from manufacturers such as Binks, DeVilbiss and Graco.

Conventional Spray
Pressure pot equipped with dual regulators, 3/8" I.D. minimum material hose, .086" I.D. fluid tip and appropriate air cap.

Airless Spray

Pump Ratio:	30:1 (min.)
GPM Output:	3.0 (min.)
Material Hose:	3/8" I.D. (min.)
Tip Size:	.019-.025"
Output PSI:	1900-2100
Filter Size:	60 mesh

Teflon packings are recommended and available from the pump manufacturer.

Brush & Roller CM 15
Multiple coats may be required to obtain desired appearance, recommended dry film thickness and adequate hiding. Avoid excessive re-brushing or re-rolling.

Brush CM15
Use a medium bristle brush.

Plural Component CM 15 FC
May be applied by plural component spray equipment. Contact Carboline Technical Service for specific recommendations.

Brush & Roller CM 15 FC
Use clean natural bristle brush or medium nap phenolic core roller. Work coating into all irregularities.

Mixing & Thinning

Mixing
Power mix separately, then combine and power mix. DO NOT MIX PARTIAL KITS.

Ratio
1:1 Ratio (A to B)

Thinning
May be thinned up to 32 oz/gal (25%) with #10. To extend pot life, may be thinned up to 32 oz/gal (25%) with #76. Use of thinners other than those supplied by Carboline may adversely affect product performance and void product warranty, whether expressed or implied.

Pot Life CM 15
2 Hours at 75°F (24°C) unthinned
1 Hour at 90°F (32°C) unthinned
Pot life ends when coating become too viscous to use.

Pot Life CM 15 FC
Approximately 30 minutes at 75°F (24°C) unthinned.
When thinned 12%, pot life will be 45 minutes at 75°F.
Pot life ends when coating becomes too viscous to use.

Cleanup & Safety

Cleanup
Use #2 Thinner 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 vapor concentration from reaching the lower explosion limit for the solvents used. In addition to ensuring proper ventilation, appropriate respirators must be used by all application personnel.

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 Electric Code. In areas where explosion hazards exist, workmen should be required to use non-ferrous tools and wear conductive and non-sparking shoes.

Application Conditions

CM 15

Condition	Material	Surface	Ambient	Humidity
Normal	65°-85°F (18°-29°C)	65°-85°F (18°-29°C)	65°-85°F (18°-29°C)	35-80%
Minimum	50°F (10°C)	50°F (10°C)	50°F (10°C)	0%
Maximum	90°F (32°C)	130°F (54°C)	100°F (38°C)	95%

CM 15 FC

Condition	Material	Surface	Ambient	Humidity
Minimum	50°F (10°C)	35°F (2°C)	35°F (2°C)	0%
Maximum	75°F (24°C)	130°F (54°C)	100°F (38°C)	95%

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

CM 15

Surface Temp. & 50% Relative Humidity	Dry to Recoat / Topcoat	Final Cure for Immersion Service
50°F (10°C)	5 Days	15 Days
60°F (16°C)	3 Days	10 Days
75°F (24°C)	24 Hours	5 Days
90°F (32°C)	18 Hours	3 Days

Dry to Touch is 5 hours at 75°F (24°C). Maximum recoat/topcoat times are 30 days for epoxies and 90 days for polyurethanes at 75°F (24°C).

CM 15 FC

Surface Temp. & 50% Relative Humidity	Dry to Recoat / Topcoat
35°F (2°C)	**32 Hours**
50°F (10°C)	25 Hours
60°F (16°C)	18 Hours
75°F (24°C)	5 Hours

These times are based on a 5.0-7.0 mil (125-175 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. **Dry to Touch is 3.5 hours at 75°F (24°C). Maximum recoat/topcoat times are 30 days for epoxies and 90 days for polyurethanes at 75°F (24°C).** 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 time is exceeded, the surface must be abraded by sweep blasting prior to the application of additional coats. Note: This product contains conductive pigments and cannot be holiday tested.

Packaging, Handling & Storage

Shipping Weight (Approximate)	2 Gallon Kit 25 lbs (11 kg)	10 Gallon Kit 124 lbs (56 kg)

Flash Point (Setaflash)	Part A:	>200°F (93°C)
CM 15	Part B:	76°F (24°C)
CM 15 FC	Part B:	45°F (7°C)

Storage (General) Store Indoors.

Storage Temperature & Humidity 45° - 110°F (7-43°C)
0-90% Relative Humidity

Shelf Life
CM 15 24 months at 75°F (24°C)

CM 15 FC 12 months at 75°F (24°C)

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