

Selection & Specification Data

Generic Type	Single package, water-based, flexible mastic fire protective coating for cables and cable trays.
Description	A water based mastic that can be applied to electrical cables to retard fire propagation. Once applied, it meets code and insurance requirements for interior and exterior use. It provides a hard and flexible surface that will not dust, flake, or spall.
Features	<ul style="list-style-type: none"> • Flexible • Hard, dust free surface • Allows easy replacement of cables • Water-based product, low odour • Asbestos-Free – complies with EPA and OSHA regulations • Factory Mutual – Tested and approved • Type approved by US Nuclear Regulatory Commission • Does not de-rate cables • Weathering – Approved for exterior use • Quality Manufactured – under strict Carboline quality standards • Provides protection at 1.58 mm (1/16") Dry Film Thickness
Finish	Texture finish; varies depending upon the application method
Colour	Pale Grey
Primers	Not required
Topcoats	Generally not required. In severely corrosive atmospheres, consult Carboline Technical Service for selection of the coating most suitable for the operating environment.
Dry Film Thickness	Applied at 1.58 mm (1/16") dry film thickness, wet film thickness at 3 mm (1/8") to prevent propagation of fire along grouped electrical cable. At higher thickness will also provide moderate fire endurance.
Solids Content	By volume: 53%
Theoretical Coverage Rate	0.33 m ² per litre at 1580 microns (1.58mm) DFT
Mix Ratio	N/A single package
VOC Values	28.7 g/litre
Dry Temp. Resistance	Continuous: 91°C Non-Continuous: 104°C

Physical Data (typical values)

Colour	Non-uniform	Gray (standard) Brown (MTO only)
Specific Gravity		1.27 kg / litre
Durometer Hardness Shore D	ASTM D2240	30 – 40
Flexibility		Excellent
Abrasion Resistance		Very good
Impact Resistance		Excellent
Ampacity	EPS 96202	No De-Rating
Vibration Resistance		Excellent
Flame Spread	ASTM E-84	19
Smoke Development	ASTM E-84	44
Flash Point	Setaflash	148°C
Solids by Volume		53% ± 2%
VOC		28.7 grams / litre
Coverage (at 1.58mm)	5 US gallon	6.25 m ² per drum
Shelf Life		18 months

Test reports and additional data available on written request

Environmental Chemical Resistance Guide

Exposure	Splash / Spill	Fumes
Acids	Fair	Very Good
Alkalies	Fair	Very Good
Solvents	Poor	Good
Salt	Very Good	Excellent

Approvals

Factory Mutual Research Corporation

INTUMASTIC 285 has been tested and approved by Factory Mutual Research Corporation at 1/16" (1.6 mm) dry thickness, and evaluated by Sandia Laboratories in tests sponsored by the U.S. Nuclear Regulatory Commission using both propane and diesel fueled fires.

Ampacity tests run by Factory Mutual show "No Electrical Derating" necessary when a cable is coated (and cured properly) with INTUMASTIC 285.

The temperature attained during the fire testing was well below the maximum temperature rating of the cable insulation. Heat transfer calculations should be used to calculate derating requirements of large groups of conductors.

Sandia Laboratories (for US Nuclear Regulatory Commission)

- Diesel (Cable Tray)
- Propane (Cable Tray)

Electrical Power System (EPS)

- Ampacity - No derating of cables required
- Report EPS 96202

Fire Retardant coating for Electrical Power and Control Cables at 1/16" dry film thickness.

Copies of both the Factory Mutual and Sandia Laboratories' test reports are available upon written request.

Intumastic® 285

Application Equipment

Refer to the separate "Application Guidelines" data sheet for full details.

Mixer Use a 12.5 mm (½") drill with a Jiffy Mixer or slotted paddle.

Mixing & Thinning INTUMASTIC 285 should be mixed to a uniform consistency before use. The product may be thinned with clean, potable water up to 5% by volume. Excessive thinning should be avoided as this will affect film build.

Pumps

Mfg. & Model	Type	Modification	Power & Max. Output
Graco 5:1 Bulldog	Piston	Even-flo Regulator Valve	Compressed air 4.6 gpm (17 lpm)
Graco 10:1 Bulldog	Piston	Even-flo Regulator Valve	Compressed air 1.7 gpm (6.4 lpm)
Graco 30:1 Bulldog	Piston	None	Compressed air 3.0 gpm (11.0 lpm)

Compressor Air volume and pressures required will depend on equipment used. Be certain that the air supply is a minimum 75 cfm at 100 psi 6.9 kPa (100 psi).

Material Line Minimum ¾" (19mm) hose is recommended for all pump recommendations listed above. For hose over 50' (15.3m) in length, 1½" (43mm) I.D. is recommended. A 10' (3m) length of ¾" (19mm) I.D. hose may be added at the gun to facilitate ease of handling. Minimum bursting pressure on material lines should be 1000 psi (68.9 kPa) when using 5:1 or 10:1 pumps. When using a 30:1 pump, minimum bursting pressure on material line should be 3000 psi (206.7 kPa).

Conventional Spray Set-Up
Graco Model: 204000
Fluid Tip: 164331
Air Cap: 160658

Airless Spray Set-Up
Gun: Graco Mastic Golden Gun
Tip: Reverse-a-Clean 0.059-0.063"
1.5 – 1.6 mm

Application Procedure

INTUMASTIC 285 may be sprayed airless provided the material is thinned with potable water at one pint (470 mls) per five gallons of material, and not to exceed one quart per five gallons of material. Thinning must not exceed 1 quart (940 mls) per 5 gallons of INTUMASTIC 285. A "Reverse-A-Clean" tip is recommended for the ease of application.

Modification to the Graco airless pump requires the Even-flo Regulator Valve (supplied by Graco Co.) for air atomization of the INTUMASTIC 285 for the guns listed.

Installation can also be made by either palming or trowel.

Palming: Hand application of the mastic may prove to be more economical when cables are "ganged" or for protecting individual strands. Rubber gloves are recommended.

Trowel: Standard plasterers hawk and trowel may be used for applicable conditions. Selection of instruments is left to the discretion of the applicator.

Application Conditions

	Surface or Ambient Temperature		Relative Humidity	
	Normal	Minimum	Maximum	Min. Max.
Interior or Exterior		4°C	35°C	0% 90%

Special thinning and application techniques may be required above or below normal conditions.

Curing

Normal dry times for INTUMASTIC 285, at a wet thickness of 3 mm (1/8"), is dry-to-touch in 24 hours at 21°C and 50% RH, and final cure in 15 days at 21°C and 50% RH. These times are dependent on thickness, humidity and temperature.

Caution: Do not start work if ambient temperatures are expected to drop below 2°C for 24 hours after application.

Packaging, Handling & Storage

Pack Sizes 5 US Gallon

Flash Point (Setaflash) 148°C

Storage Material should be kept dry, covered, and off of the ground. 4°C to 43°C) Keep from freezing. 0 to 100% relative humidity

Shelf Life 18 months

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

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