

S-885 Thermal Insulative Ablative Coating

Dyna Therm

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PRODUCT DESCRIPTION meets Martin Marietta STM-K799

S-885 is a two component, room temperature curing, low density silicone rubber thermal insulating ablative coating. Capable of application by trowel or spray. The coating is designed to provide thermal protection from ascent heating to launch vehicles, payload shrouds and control surfaces.

SURFACE PREPARATION

All surfaces to be coated must be free of all foreign matter including moisture, dust rust oil etc.

MIXING INSTRUCTIONS

For satisfactory performance, the strict adherence to these instructions is mandatory. Emphasis must be placed on insuring that the surface to be coated is clean and free from all foreign matter including moisture, oil, rust, etc. S-885 must be thoroughly mixed and applied in the correct environment (temperature, humidity) by using the proper spray or trowelling techniques.

S-885 is packaged in pre-measured two or five gallon kits. The Part B curing agent is tinted blue to assure the complete mixing of the two components. If the application does not require a complete kit, the base and curing agent may be combined at a mix ratio of 100 parts of Part A to 10 parts of Part B by weight.

APPLICATION

Environmental Requirements

The proper cure of S-885 is very dependent upon relative humidity and temperature. If at all possible, application should be made at temperatures above 60°F and at a relative humidity of 50% or higher.

TROWEL METHOD

When applying S-885 by trowel, heavy pressure must be exerted to insure the intimate contact of the coating with the surface being coated.

AIRLESS SPRAY METHOD

S-885 may be spray applied using airless spray equipment. For airless spray the coating shall initially thinned with 100 ml of Freon TF or with the alternate thinner (see conventional spray method) to 100 parts by weight of the base material. Slowly blend the solvent into the coating to prevent the mixture from lumping, and strain the mixture prior to spraying. Adjust the viscosity to 17 to 25 seconds in a #5 Zahn cup by mixing additional solvent into the mixture, as required. Preferred solvent to base ration is 165 ml or less of solvent to 100 grams of base material. Ten parts by weight of the curing agent shall be thoroughly mixed into the thinned base material.

NOTE: Primer activator (PA2) may be added to the mixed and thinned material to assure a Shore A of 50 in 24 hours. Initially add 2 ml of PA2 per 100 grams of base coating to the mixed and thinned material. If a shore A of 50 is not obtained, remix a batch of material and add 5 ml of PA2 per 100 grams of base material. The addition of the PA2 material will reduce the pot life of the coating material.

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Non-Volatile Content	90%
Color	white
Hardness, Cure,	55 Shore A
Pot Life	2 Hours
Specific Gravity	
Base Compound	0.48 to 0.53
Cured	0.48 to 0.54
Thermal Conductivity	0.86 to 0.33*
	(BTU-inches/Ft ² /Hr/°F)
Specific Heat,	0.21 to 0.33*
	(BTU/lb-°F)
Mix Ratio (By Weight)	100:10 Base to Catalyst
	*(0°F to 600°F)

1. Physical Properties - Mixed Components

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The catalyzed and viscosity adjusted coating shall be spray applied preferably by using airless spray equipment with appropriate tips for this type of coating. Allow ten to thirty minutes air dry between coats (10 to 20 mils dry film per coat) and cure at 75°F ± 5°F and 50% ± 20% relative humidity for 16 hours minimum. Six coats should be applied using the cross coat method. There should be no signs of blistering after curing.

CONVENTIONAL SPRAY METHOD

S-885 may be spray applied using conventional air spray equipment with pressure pot. The Freon used in the airless spray method may be substituted from 50% to 100% with toluene. The test panel must be at least one foot square. Use a Binks no. 19 spray gun with a 68 fluid nozzle and 68 PB air cap (or equivalent equipment) with pot pressure of 10 to 20 psig and an atomizing pressure of 40 to 60 psig. Each coat shall be applied wet. Use cross coat application for air type spray.

Density, Lb/Ft ³	
Air Spray	25 to 31
Airless Spray	30 to 41
Hardness, Cure	
Minimum	50 Shore A
Adhesion	Excellent
Tensile Strength	40 psi Average

STORAGE LIFE

Shelf life for S-885 is 6 months when stored below 70°F.

2. Physical Properties - Sprayed Material

CLEAN OF EQUIPMENT

Prior to full cure, wipe all tools with a clean cloth. Cured material may be readily removed from most tools and unprimed surfaces.

Flush all spray equipment with clean solvent to remove traces of Flamemaster S-885.

SAFETY

Avoid prolonged contact with skin. Use with adequate ventilation. Wash with soap and water after using.

PACKAGING

S-885 is packaged in 2-Gallon and 5-Gallon Kits

The information presented herein is believed to be reliable. The Flamemaster Corporation makes specific recommendations for the use and application of S-885, which are important factors in its performance. Since the Flamemaster Corporation has no control over the use and application, it cannot insure that your results will be the same as those described. It is necessary as a condition of sale that the Flamemaster Corporation's responsibility is to replace such quantity of S-885 as is proved to be defective by our laboratory. Flamemaster shall not be liable for injury, loss or damage, direct or consequential, arising out of the use of inability to use S-885.