E 400 Ablative Insulative Coating System

Dyna Therm

Technical Bulletin

August 13, 2013

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ABLATIVE/INSULATIVE COATING

MATERIAL DESIGNATION Dyna Term E-400 Base Insulative Coating Dyna Term E-400 Top Coat

PRODUCT DESCRIPTION meets AS-1129, LAC-40-4344-B, WS-4510-B, GD/900-800-093 or 423-800512

The Dyna Therm E-400 System consists of an insulative base coat and a weather barrier top coat. The high build base coat is a two component epoxy compound formulated to provide maximum insulation prior to the process of decomposition (ablation). The two component white epoxy top coat produces a tough, moisture resistant finish. Dyna Therm E-400 can be applied to a thickness of 20 mils in one pass using conventional spray equipment. Dyna Therm E-400 is also available as a high solids, room temperature cure molding compound, which like the sprayable material, can easily be repaired in the event of surface damage.

	Base Coat	Top Coat
Color	Off White	White or Gray
Solids*	65% Min.	58% Min.
Viscosity	2500 cps Min.	60 KU Min.
Coverage	35 sq. ft/Gal (.025")	200 sq. ft./Gal (.004")
Pot Life	4-5 hours @ 75 deg. F	4-5 hours @ 75 deg. F
Cure Time	16 hours @ 75 deg. F	16 hours @ 75 deg. F
Storage	6 months @ 70-80 Deg. F	6 months @ 70-80 deg. F

* The solvents contained in the E-400 system comply with the restrictions set forth in Rule 66 of the Los Angeles Air Pollution Control District and Rule 3 of the San Francisco Bay Air Pollution Control District.

The Dyna Therm E-400 System cures overnight at room temperature (75°F) to a firm condition. Optimum physical properties are achieved seven days following application. Cure may be accelerated by increasing the environmental temperature. However, the maximum temperature should not exceed 140°F.

NOTES: MILIATRY / GSA Procurement

NSN: 8030-00-009-5032 - ~~includes 1 Gallon Kit of Base Coat and 1~~ Quart Kit of White Top Coat
NSN: 8030-01-067-7586 - Pint Kit (Haze Gray)

MIXING INSTRUCTIONS

Blend parts A and B 50/50 by volume and stir thoroughly. Allow mixed material to stand no longer than 15-30 minutes and blend again before applying material. Pot life of the mixture is 4-6 hours at 75°F. Should thinning become necessary, contact the Flamemaster Corporation for instructions.

In the event that entire factory packed containers are not mixed at one time, be sure that components A and B are thoroughly mixed prior to combining at the 50/50 by volume ratio. This is to insure proper dispersion of the ingredients in the two components. After combing parts A and B, thoroughly mix the materials to insure proper reaction.

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APPLICATION

Substrate must be free of oil, grease wax, dust, etc. Metal substrates must be free of rust, oxidation, heat treat scale, etc. In addition to the above, metal substrates are best prepared by sand blasting; however, hand sanding, grinding and wire brush may produce satisfactory results in most cases. Fiberglass lay ups and plastic surfaces are best prepared by light sand blasting or hand sanding. Be certain to remove oil or any waxes or mold releases. Plastic substrates should be checked for reaction to the solvent system in the E-400 coating.

The insulative coating is a two-part thixotropic epoxy system that is applied by spray. The following spray equipment (or equivalent) is recommended:

DeVilbiss P-OGA-502 #78 E Gun and Cap or P-MBC-510 #78 E Gun and Cap.
Binks Model 18 with fluid nozzle #66 and air nozzle #63PB.
Cup or Pot pressure approximately 20-40 psi.
Atomization line pressure 60 psi for both insulative and top coat.
Gun distance approximately 20" from surface.

Coating thickness of 20 mils have been successfully applied to vertical surface in one operation. Vertical surfaces that are subjected to temperatures of 90°F or higher may sag before a 20 mil coating thickness is obtained. When this condition exists, thinner coats should be applied. The application of additional coats to build to the desired thickness should be accomplished as soon as the previous coat is sufficiently firm to support additional applications. The time between coats will vary depending on the ambient temperature.

CAUTION: Do not "Force Dry" E-400 Insulative Coating at temperatures in excess of 140°F.

DYNA THERM E-400 TOP COAT

Humidity Exposure	No damage or deterioration
Sand and Dust Erosion	No damage or deterioration
Salt Spray Exposure	No damage or deterioration
Thermal Shock Test	No damage or deterioration
Fungus Test	No evidence of fungus growth

Top coat is a two-part epoxy system that can be brushed or sprayed. The mixing ratio is 50/50 of parts A and B by volume. The recommended spray consistency is 60 KU. No induction period is necessary before applying E-400 Top Coat.

NOTE: To insure proper adhesion of the top coat, it is recommended that the top coat be applied as soon as the insulative coating is firm enough to support and withstand brush or spray applications.

STORAGE LIFE

E-400 Base Insulative Coating and E-400 Top Coat has a 6 month shelf life when stored between 70°F and 80°F.

CLEAN UP

Equipment may be cleaned with M.E.K. Both E-400 Insulative Coating and E-400 Top Coat are reactive materials and must be cleaned from equipment immediately after use.

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SAFETY

Prior to use consult the MSDS for health, safety and disposal requirements

The solvents contained in the E-400 System comply with the restrictions set forth in Rule 66 of the Los Angeles Pollution Control District and Rule 3 of the San Francisco Bay Air Pollution Control District.

PACKAGING

E-400 Insulative Coating (Base Coat) is packaged in Pint, Quart, Gallon and 4-Gallon Kits.
E-400 Top Coat is packaged in Pint, Quart, and Gallon Kits.

TEST METHOD		VALUE
Specific Heat BTU/lb/°F Max.	ASTM C-351	0.5
Thermal Conductivity BTU/ft/hr/°F Max.	ASTM D-2214	0.10
Thermal Diffusivity ft^2/hr Max.	Dyna Therm	4×10^{-3}

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