

HiE-Coat™ 840-M coats gas-fired heating tubes.



HiE-Coat™ 840-M coats industrial heat exchanger.



HiE-Coat™ 840-C coats ceramic fiberboard infrared heater.

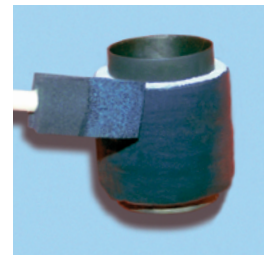
PRODUCT HIGHLIGHTS

The HiE-Coat™ line of high emissivity coatings are black-body formulations designed to significantly improve the thermal efficiency of infrared heaters, furnaces, incinerators, and ovens used throughout the appliance, ceramics, chemical processing, metallurgical, and refining industries. Natural gas and oil savings in the range of 5–10% are typical using these coatings.

- 840-C** Ceramic-based, black-pigmented coating for ceramic fiber modules and refractories to 2500 °F (1371 °C).
- 840-CM** Ceramic-based, black-pigmented coating for dense refractories to 2500 °F (1371 °C) and stainless steel to 900 °F (482 °C).
- 840-M** Ceramic-based, black-pigmented coating for carbon and stainless steel to 2000 °F (1093 °C).
- 840-MS** Silicone-ceramic, black-pigmented coating for aluminum, brass, copper, and carbon and stainless steels to 1100 °F (593 °C).



HiE-Coat™ 840-M coats gas burner component.



HiE-Coat™ 840-C coats exhaust pipe insulation.

HIGH EMISSIVITY COATINGS

Type	INORGANIC-CERAMIC			SILICONE-CERAMIC
	840-C	840-CM	840-M	840-MS
Product Number				
Tradename	HiE-Coat™			
Color (cured)	Jet Black	Jet Black	Jet Black	Jet Black
Maximum Temperature, °F (°C)	2500 (1371)	Ceramics: 2500 (1371) Stainless: 900 (482)	2000 (1093)	1100 (593)
No. Components	1	1	1	1
Mix Ratio, by Weight (by Volume)	NA	NA	NA	NA
Viscosity, cP ¹	70–160	600–800	600–900	250–500
Specific Gravity, g/cc	1.60	1.54	1.54	1.49
Solids by Weight, %	58.5	48.0	50.0	57.1
Solids by Volume, %	27.3	19.9	46.3	42.5
WFT, mils (microns) ²	3.66 (92.9)	5.03 (127.7)	2.12 (54.9)	2.40 (61.0)
DFT, mils (microns) ³	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)
Theoretical Dry Film Coverage ⁴ @ 1 mil, ft ² /gal (m ² /liter)	438 (10.8)	319 (7.8)	742 (18.2)	681 (16.7)
Curing, Min Air Set, hrs ⁵	1.0–2.0	1.0	1.0	1.0
Curing, Heat Cure, °F, hrs	200, 1	200, 0.5 + 500 / 1	200, 1 + 500 / 1	480 / .75
Application Temperature, °F	50–90	50–90	50–90	50–120
Thinner	840-C-T	840-CM-T	840-M-T	PM Acetate
Flash Point, °F/°C	NA	NA	NA	~118 (48)
Volatiles, lbs/gal	0.0	0.0	0.0	5.3
Shelf Life, months	6	6	6	6
Storage Temperature, °F	55–85	55–85	55–85	40–90

Reference Notes

- ¹ Viscosity is measured using a Brookfield LV Viscometer; spindle and speed selection vary depending on the product.
- ² Estimated Wet Film Thickness (WFT).
- ³ Recommended Dry Film Thickness (DFT).
- ⁴ Actual coverage will vary depending on material losses during mixing and application.
- ⁵ Where a value is provided for “Min Air Set”, it is recommended to set the coating at room temperature for, at minimum, the specified time prior to curing.

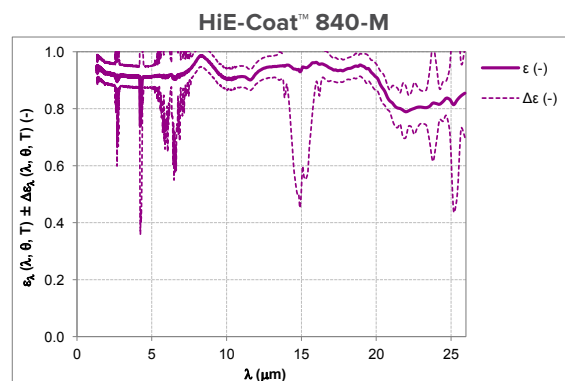
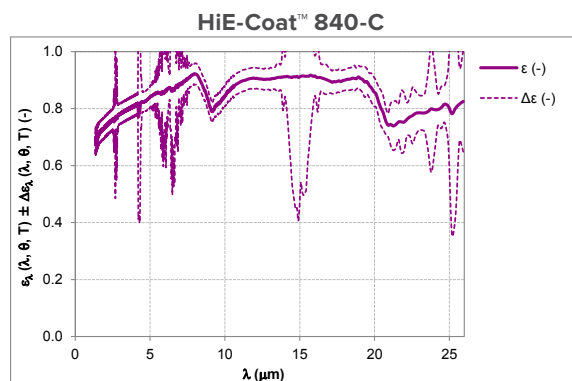
Surface Preparation Notes

All surfaces should be free of oil, grease, dirt, corrosives, oxides, paints or other foreign matter. No further preparation is required when coating ceramics, refractories or graphites. Quartz should be sandblasted whenever possible. Smooth metal surfaces should be sandblasted or etched using Aremco's Corr-Prep™ CPR2000.

Abbreviations

NA Not Applicable
 NR Not Required
 DFT Dry Film Thickness
 WFT Wet Film Thickness

Spectral Normal Emissivity at 800 °C



λ (μm)	2	3.5	4.7	8.3	10	12.5	17.5	20	25
ε _λ (λ, θ, T) (-)	0.735	0.799	0.827	0.903	0.848	0.904	0.896	0.860	0.809
Δε (-), k = 2	0.036	0.036	0.036	0.037	0.035	0.036	0.042	0.051	0.066

λ (μm)	2	3.5	4.7	8.3	10	12.5	17.5	20	25
ε _λ (λ, θ, T) (-)	0.924	0.915	0.911	0.986	0.906	0.943	0.934	0.913	0.832
Δε (-), k = 2	0.038	0.037	0.037	0.039	0.037	0.037	0.041	0.047	0.062

For more Spectral Normal Emissivity Charts, visit aremco.com/tech-notes

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