

HIGH TEMPERATURE SILICONE EMULSION COATINGS

Technical Bulletin A6-S4



Corr-Paint™ CP4020



Corr-Paint™ CP4090



Corr-Paint™ CP4060



Corr-Paint™ CP4070

Aremco's Corr-Paint™ CP40xx series coatings are formulated using an advanced water-based silicone emulsion combined with inorganic fillers and pigments to offer VOC compliant coatings with continuous temperature resistance to 1100 °F (593 °C) and intermittent resistance to 1200 °F (649 °C).

These coatings are single-part, heat curable systems that adhere to a wide range of materials including metals, ceramics, glass, quartz, and refractories, and offer outstanding resistance to outdoor weathering, UV light, salt spray corrosion, oxidation, some chemicals, and thermal shock.

PRODUCT HIGHLIGHTS

- Single-Part, No Mixing
- Low Viscosity
- Maximum Use Temperature, 1100 °F (593 °C)
- Intermittent Use Temperature, 1200 °F (649 °C)
- Bonds to Ceramics, Glass, Quartz, Metals
- Excellent Resistance to Moisture & Salt Spray
- Resists Thermal Shock
- Resists Ultraviolet Light
- Good Chemical Resistance
- Water-Based
- Low Volatile Organic Compounds (VOCs)

AVAILABLE COLORS*

- | | |
|---|--|
|  CP4000
Black |  CP4060
Red |
|  CP4010
Aluminum |  CP4070
Blue |
|  CP4020
Gray |  CP4080
Yellow |
|  CP4040
White |  CP4090
Brown |
|  CP4050
Green |  CP4095
Orange |

* All colors are matte finish. The colors represented here are approximate and the actual product color may vary.

TYPICAL APPLICATIONS

- | | |
|----------------------|---------------------|
| • Bag Houses | • Engines |
| • Boiler Casings | • Furnaces |
| • Ceramic Cloth | • Ovens |
| • Ceramic Fiberboard | • Kilns |
| • Chimneys | • Lighting Fixtures |
| • Cyclones | • Process Vessels |
| • Ducting | • Reformers |
| • Heaters | • Scrubbers |
| • Heat Exchangers | • Stacks |
| • Exhaust Systems | • Turbochargers |

HIGH TEMPERATURE WATER-BASED SILICONE COATINGS PROPERTIES

Type		SILICONE									
Product Number		CP4000	CP4010	CP4020	CP4040	CP4050	CP4060	CP4070	CP4080	CP4090	CP4095
Color (cured)		Flat Black	Aluminum	Gray	White	Green	Red	Blue	Yellow	Brown	Orange
Temperature Continuous, °F (°C)		1100(593)	1100(593)	1100(593)	1100(593)	1100(593)	1100(593)	1100(593)	1100(593)	1100(593)	1100(593)
No. Components		1	1	1	1	1	1	1	1	1	1
Viscosity, cP¹		400–800	200–600	400–800	400–900	500–750	750–950	300–600	500–700	300–500	500–700
Specific Gravity, g/cc		1.32	1.05	1.28	1.27	1.31	1.31	1.25	1.33	1.32	1.32
Solids by Weight, %		51.5	44.2	44.2	44.2	48.5	46.5	44.8	47.0	44.5	44.5
Solids by Volume, %		38.1	41.6	38.2	46.1	39.5	38.3	38.5	38.0	37.8	37.8
WFT, mils (microns)²		2.6 (66.5)	2.4 (61.0)	2.6 (66.4)	2.2 (55.1)	2.5 (64.3)	2.6 (66.3)	2.6 (66.3)	2.6 (66.8)	2.7 (67.2)	2.6 (64.9)
DFT, mils (microns)³		1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)	1.0 (25.4)
Theoretical Dry Film Coverage⁴ @ 1 mil, ft²/gal (m²/liter)		611 (14.9)	668 (16.4)	613 (15.1)	740 (18.2)	634 (15.6)	614 (15.1)	617 (15.2)	610 (15.0)	606 (14.9)	628 (15.4)
Primer⁵		NR									
Drying	Touch, hrs	1–2	1–2	1–2	1–2	1–2	1–2	1–2	1–2	1–2	1–2
	Handling, hrs	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4
	Recoat, (min/max), hrs	1/ 24	1/ 24	1/ 24	1/ 24	1/ 24	1/ 24	1/ 24	1/ 24	1/ 24	1/ 24
Curing	Min Air Set, hrs⁶	1	1	1	1	1	1	1	1	1	1
	Cure, °F/hrs^{7,8}	450 / 1 or 480 / .75									
Application Temperature, °F		50–120	50–120	50–120	50–120	50–120	50–120	50–120	50–120	50–120	50–120
Thinner		Distilled Water									
Pot Life, hrs at room temp.		NA									
Flash Point, °F (°C)		> 212 (100)	> 212 (100)	> 212 (100)	> 212 (100)	> 212 (100)	> 212 (100)	> 212 (100)	> 212 (100)	> 212 (100)	> 212 (100)
VOC's, lbs/gal		1.04	0.86	0.99	0.98	0.98	0.98	1.01	0.95	0.98	0.98
Shelf Life @RT, months		6	6	6	6	6	6	6	6	6	6
Storage Temperature, °F		55–85	55–85	55–85	55–85	55–85	55–85	55–85	55–85	55–85	55–85

Reference Notes

- ¹ Viscosity is measured using a Brookfield LV Viscometer, LV3 Spindle @ 30 RPM.
- 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 Primer is only recommended for exterior applications in which salt fog or moisture are present and the operating temperature is less than 750 °F.

- ⁶ 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.
- ⁷ Adequate ventilation is required when curing these products as some outgassing will occur.
- ⁸ Curing is recommended but not absolutely required if the system is raised slowly to a minimum of 450 °F within 24–48 hours of application and not exposed to high moisture or rain during this initial dwell period.

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. Smooth metal surfaces should be abrasive blasted to an SSPC-SP6 near white blast. Remove abrasive residue using air pressure; do not clean with organic solvents.

Aremco's Corr-Prep™ CPR2000 is recommended as an alternative when sandblasting is not possible. This is a specially formulated, water-based, zinc phosphate metal etching solution that is non-toxic, non-flammable, non-caustic, and non-corrosive. It etches metal to provide surface profile for superior coating adhesion to aluminum, galvanized metal, steel, and stainless steel. It also helps to improve long-term corrosion protection. Application is simple — just brush or spray liquid on the substrate, allow to sit for 20–30 minutes, then rinse off and dry substrate thoroughly prior to coating.

Application Notes: Mix thoroughly before use to redisperse fillers and pigments. Apply using a brush, roller or spray gun. When spraying, a maximum dry film thickness of 2 mils (0.002") can be achieved by applying two coats. Recommended fluid nozzle diameter is 40–50 mils, atomizing pressure of 40–50 psi, and distance from work of 8–10". Adequate ventilation is required when applying and curing the coating. Read Safety Data Sheet for further safety instructions.

Abbreviations

NA Not Applicable	DFT Dry Film Thickness	
NR Not Required or Recommended	WFT Wet Film Thickness	
	RT Room Temperature	

Refer to Price List for complete order information.

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