

## HIGH TEMPERATURE SILICONE RESIN COATINGS

Technical Bulletin A6-S3



Corr-Paint™ CP4020-S1



Corr-Paint™ CP4000-S1

Aremco's Corr-Paint™ CP40xx-S1 series coatings are formulated using an advanced solvent-based silicone resin combined with inorganic fillers and pigments to offer continuous temperature resistance to 1100 °F (593 °C) and intermittent resistance to 1400 °F (760 °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, 1100–1400 °F (593–760 °C)
- Good Chemical Resistance
- Bonds to Ceramics, Glass, Quartz, Metals
- Excellent Resistance to Moisture & Salt Spray
- Resists Thermal Shock
- Resists Ultraviolet Light
- Solvent-Based

### AVAILABLE COLORS\*

 CP4000-S1 Black	 CP4060-S1 Red
 CP4000-S1-HT Black	 CP4070-S1 Blue
 CP4010-S1 Aluminum	 CP4080-S1 Yellow
 CP4020-S1 Gray	 CP4090-S1 Brown
 CP4040-S1 White	 CP4095-S1 Orange
 CP4050-S1 Green	

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

### TYPICAL APPLICATIONS

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

## HIGH TEMPERATURE SOLVENT-BASED SILICONE COATINGS PROPERTIES

Type		SILICONE										
Product Number		CP4000-S1	CP4000-S1-HT	CP4010-S1	CP4020-S1	CP4040-S1	CP4050-S1	CP4060-S1	CP4070-S1	CP4080-S1	CP4090-S1	CP4095-S1
Color (cured)		Black	Black	Aluminum	Gray	White	Green	Red	Blue	Yellow	Brown	Orange
Temperature Continuous, °F (°C)		1100 (593)	1400 (760)	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	1
Viscosity, cP <sup>1</sup>		250–500	900–1200	250–500	150–250	250–500	300–500	600–800	350–500	300–500	300–500	500–700
Specific Gravity, g/cc		1.49	1.61	1.00	1.35	1.34	1.36	1.34	1.35	1.36	1.38	1.37
Solids by Weight, %		57.1	79	41.0	57.1	57.1	57.1	57.4	56.6	56.6	56.6	56.6
Solids by Volume, %		42.5	53.6	42.4	44.4	44.4	44.3	45.1	44.3	43.4	43.2	43.4
WFT, mils (microns) <sup>2</sup>		2.4 (59.8)	1.9 (47.4)	2.4 (59.9)	2.3 (57.3)	2.3 (57.2)	2.3 (57.4)	2.2 (56.4)	2.3 (57.3)	2.3 (58.6)	2.3 (58.6)	2.3 (58.6)
DFT, mils (microns) <sup>3</sup>		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)	1.0 (25.4)
Theoretical Dry Film Coverage <sup>4</sup> @ 1 mil, ft <sup>2</sup> /gal (m <sup>2</sup> /liter)		681 (16.7)	860 (21.1)	680 (16.7)	711 (17.5)	712 (17.5)	710 (17.4)	723 (17.7)	711 (17.4)	696 (17.1)	694 (17.0)	697 (17.1)
Primer <sup>5</sup>		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Drying	Touch, hrs	1–2	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	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	1 / 24
Curing	Min Air Set, hrs <sup>6</sup>	1	1	1	1	1	1	1	1	1	1	1
	Cure, °F/hrs <sup>7,8</sup>	480 / .75	200 / .25 480 / .25 1200 / .25	480 / .75	480 / .75	480 / .75	480 / .75	480 / .75	480 / .75	480 / .75	480 / .75	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	50–120
Thinner		PM Acetate	PM Acetate	PM Acetate	PM Acetate	PM Acetate	PM Acetate	PM Acetate	PM Acetate	PM Acetate	PM Acetate	PM Acetate
Pot Life, hrs at room temp.		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Flash Point, °F (°C)		~ 118 (48)	~ 118 (48)	~ 108 (42)	~ 118 (48)	~ 118 (48)	~ 118 (48)	~ 118 (48)	~ 118 (48)	~ 118 (48)	~ 118 (48)	~ 118 (48)
VOC's, lbs/gal		5.3	3.9	5.7	4.8	4.8	4.9	4.8	4.9	4.9	5.0	5.0
Shelf Life @RT, months		6	6	6	6	6	6	6	6	6	6	6
Storage Temperature, °F		40–90	40–90	40–90	40–90	40–90	40–90	40–90	40–90	40–90	40–90	40–90

### Reference Notes

- <sup>1</sup> Viscosity is measured using a Brookfield LV Viscometer, LV3 Spindle @ 30 RPM.
- <sup>2</sup> Estimated Wet Film Thickness (WFT).
- <sup>3</sup> Recommended Dry Film Thickness (DFT).
- <sup>4</sup> Actual coverage will vary depending on material losses during mixing and application.
- <sup>5</sup> Primer is only recommended for exterior applications in which salt fog or moisture are present.
- <sup>6</sup> 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.

- <sup>7</sup> Adequate ventilation is required when curing these products as some outgassing will occur.

- <sup>8</sup> Curing is recommended but not absolutely required if the system is raised slowly to a minimum of 500 °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

