AREMCO

HIGH TEMPERATURE SILICONE RESIN COATINGS

Technical Bulletin A6-S3

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 1200 °F (649 °C). A higher temperature formulation, CP4000-S1-HT, offers continuous operation to 1400 °F (593 °C) and intermittent resistance to 1800 °F (982 °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

Corr-Paint™ CP4000-S1

AVAILABLE COLORS*

- CP4000-S1 Black
- CP4000-S1-HT Black
- CP4010-S1 Aluminum
- CP4020-S1 Gray
- CP4040-S1 White
- CP4050-S1 Green
- CP4055-S1 Pale Green
- CP4060-S1 Red
- CP4070-S1 Blue
- CP4080-S1 Yellow
- CP4090-S1 Brown
- CP4095-S1 Orange

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

TYPICAL APPLICATIONS

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

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HIGH TEMPERATURE SILICONE RESIN COATINGS PROPERTIES

Product Number		CP4000-S1	CP4000-S1-HT	CP4010-S1	CP4020-S1	CP4040-S1	CP4050-S1	CP4055-S1	CP4060-S1	CP4070-S1	CP4080-S1	CP4090-S1	CP4095-S1
Color (cured)		Black	Black	Aluminum	Gray	White	Green	Pale 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)	1100 (593)
No. Components		1	1	1	1	1	1	1	1	1	1	1	1
Viscosity, cP[1]		250–500	900–1200	250–500	150–250	250–500	300–500	500–1000	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	1.39	1.34	1.35	1.36	1.38	1.37
Solids by Weight, %		57.1	79.0	41.0	57.1	57.1	57.1	59	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	42.8	45.1	44.3	43.4	43.2	43.4
Wet Film Thickness, Estimate, mils (microns)		2.4 (59.8)	1.9 (47.4)	2.4 (59.9)	2.3 (57.3)	2.3 (57.2)	2.3 (57.4)	2.4 (59.8)	2.2 (56.4)	2.3 (57.3)	2.3 (58.6)	2.3 (58.6)	2.3 (58.6)
Dry Film Thickness, Estimated, mils (microns)		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)	1.0 (25.4)
Theoretical Dry Film Coverage @ 1 mil, ft²/gal (m²/liter)		681 (16.7)	860 (21.1)	680 (16.7)	711 (17.5)	712 (17.5)	710 (17.4)	687 (16.9)	723 (17.7)	711 (17.4)	696 (17.1)	694 (17.0)	697 (17.1)
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	1–2
Drying	**Handling,** hrs	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4
Drying	**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	1 / 24
Curing	**Minimum Air Set,** hrs[3]	1	1	1	1	1	1	1	1	1	1	1	1
Curing	**Cure Schedule,** °F/hrs[4,5]	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	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	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	PM Acetate
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)	~ 118 (48)
VOC's, lbs/gal		5.3	3.9	5.7	4.8	4.8	4.9	4.7	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	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	40–90

Reference Notes

[1] Viscosity is measured using a Brookfield LV Viscometer, LV3 Spindle @ 30 RPM.

[2] Actual coverage will vary depending on material losses during mixing and application.

[3] Minimum Air Set is the minimum time recommended for drying the coating prior to heat curing.

[4] Adequate ventilation is required when curing these products as some outgassing will occur.

[5] 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 2–3 mils (0.002–0.003″) 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

RT Room Temperature

Refer to Price List for complete order information.