Technical Data Sheet

Si-COAT® 580™

Low VOC Anti-Corrosion Protective Coating

csl silicones inc.

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1 Introduction

Si-COAT 580 is a single component, moisture cure, room temperature vulcanizing (RTV) coating that provides long-lasting protection from corrosion in above grade applications in both new and retrofit locations. Typical applications include structural steel, bridges, machinery and equipment, areas with heavy corrosion, tank exteriors, metal roofs, cladding, etc. Si-COAT is ideal where coverage is essential and high levels of protection, adhesion, elasticity and longevity are desired.

2 Product Description

A single component, room temperature vulcanizing (RTV), moisture cure, polysiloxane coating giving excellent color, durability and long service life.

3 Intended Uses

Suitable for use in retrofit, new applications and as an overcoat in industrial maintenance. Intended for use in a wide variety of above-ground, atmospheric environments including offshore structures, petrochemical facilities, bridges, pulp and paper mills, and in the power industry. Particularly designed for use where the preferred option is a medium-gloss finish and/or low VOC's are desired.

4 Practical Information

Color
Standard Stocked Colors: Black, RAL 9001-Cream White, Grey (Ansi #70), Grey (darker), Florida Blue, Desert Sand (Beige) available for quick turnaround. Other colors are available; please call CSL Silicones for color assistance. All available colors are tested to withstand 5000 hours of Accelerated Weathering testing (QUV).

Gloss Level
Medium Gloss

Volume Solids
95%

Typical Thickness
8.0 to 20.0 mil (200 to 508 micron) dry film thickness (DFT)

Equivalent to…

Application Rate
9.0 to 22.0 mil (220 to 558 micron) wet film thickness (WFT)

Approx. Theoretical Coverage

DFT	8.0 mils (200 µ)	10.0 mils (254 µ)	15.0 mils (381 µ)	20.0 mils (508 µ)
sq. ft/US gal	186.0	146.6	97.6	73.3
sq.m/L	3.5	2.8	1.8	1.4

Allow appropriate loss factor:
Practical Coverage = Theoretical Coverage x [100% - Loss%]

Method of Application:
Airless spray, brush or roller

Temperature Range:
41 to 140˚F (5 to 60˚C) [ambient]
41 to 266˚F (5 to 130˚C) [substrate]

Drying Time:

Skin-over Time	60 minutes*
Tack-free Time	120 minutes*
Cure Through	4 to 6 hours*
Full Physical Characteristics	7 days*

*At standard conditions [77°F (25°C) and 50% relative humidity – 10 mils wet film thickness]

5 Regulatory Data

Flash Point 190˚F (88˚C) minimum
Product Weight 10.85 lb/US gallon (1.3 kg/liter) minimum
VOC 0.57 lb/US gallon (68.12 g/liter) maximum

6 Physical Properties

(Typical properties - values not to be used as specifications)

UNCURED		
	Appearance	Thick Paint
	Viscosity	6,000 ± 1,000cP
	Sag	20 minimum (Leneta Anti-Sag Meter)
	Cure System	Neutral, moisture cure
CURED *At standard conditions* [77°F (25°C) and 50% relative humidity] *for 7 days*		
	Hardness	50 [ASTM D2240, Shore A]
	Tensile Strength	400 psi (28.8kg/cm²) [ASTM D412]
	Elongation at Break	100% [ASTM D412]
	Tear Resistance	30 ppi (6kN/m) [ASTM D624 DieB]
	Temperature Stability	Continuous: -40 to 480°F (-40 to 250°C) [no flame]

7 Surface Preparation & Surface Cleanliness

All surfaces to be coated should be free of dirt, dust, chalking paint, mortar spatter, all loose rust, all loose mill scale, old caulking, grease, oil, release agents, curing compounds, laitance and other foreign matter including frost. Any paint that is peeling, flaking, cracking, blistering or lifting must be removed. Old coating that does not meet ASTM standard D3359 ("Measuring Adhesion by Tape Method") with a minimum rating of 4A or 4B must be removed. All edges of old coating must be feathered down to remove the sharp edge.

In order to achieve the above conditions, the *suggested* surface preparation standards are SSPC-SP2 (hand tool cleaning), SSPC-SP3 (power tool cleaning) or SSPC-SP12/NACE No. 5 (water jetting/blasting).

For surfaces prepared by water jetting/blasting, the SSPC-VIS 4(I)/NACE No. 7 standards for surface cleanliness should be followed.

The visual surface cleanliness must conform, at minimum, to the Vis WJ-4 condition directly after water jetting/blasting.

Non-visual surface cleanliness must conform, at minimum, to the SC-2 condition with a provision for up to 7 ppm (10 µg/cm²) chloride contamination. Soluble ferrous ion levels should be below 7 ppm (10 µg/cm²) and sulfate contamination less than 12 ppm (17 µg/cm²).

Flash rusting may occur after water jetting/blasting. As per the SSPC-VIS 4(I)/NACE No. 7 standard, the maximum flash rusting condition tolerable is L (light flash rusting that is evenly distributed or in patches, very tightly adherent and not heavy enough to mark objects rubbed/brushed against it).

Hence, the overall visual/non-visual surface condition after water jetting/blasting is WJ-4 L/SC-2 (with a provision for up to 7 ppm (10 µg/cm²) chloride contamination).

8 Coating Application

Mixing	Si-COAT 580 is supplied as a one-part coating (no component mixing necessary). However, since the coating is a thixotropic gel it is to **mix by an air powered agitator (300 – 400 rpm) for a minimum of 5 minutes,** to insure an even consistency of coating is obtained without air in suspension.
Application	All surfaces should be clean and dry prior to application. The coating should be applied in a manner that prevents runs, sags, drips, spills, etc. and that completely covers surfaces without holidays (gaps). The temperature of the surface to be coated should be between 41 and 266˚F (5 and 130˚C) and environmental temperature should be at least 5˚F (3˚C) above the dew point prior to and during application. All areas particularly prone to corrosion such as bare metal, edges, welds, holes, bolts, corners, pits and rough areas should be spot- primed with 5 mils (127 microns) DFT of Si-COAT 580. The entire structure should be topcoated with a minimum 8.0 mil (200 micron) to 20.0 mil (508 micron) DFT of Si-COAT 580, depending on surface conditions. The maximum advisable DFT of Si-COAT 580 is 100 mil (2,540 micron). When working with Si-COAT 580 in high humidity and/or high temperature environments, it is recommended to use a pail lid adapter fitted with an agitator. This will prevent the product from skinning over and curing in the pail during application. Si-COAT 580 can be applied using an Airless Sprayer, Brush, or Roller.
Thinner	Not recommended. *Thinners may inhibit the curing mechanism of the coating.*
Cleaner	Naphtha, Odorless Mineral Spirits or MEK.
Work Stoppages & Restarts	Work stoppages are not recommended with only partial utilization of a container of Si-COAT 580. If work must stop after only a portion of a container of Si-COAT 580 is used, seal to minimize air and moisture contact with the coating by covering the surface of the coating with a sheet of polyethylene film, then reseal the container to be airtight. Upon reopening the container to restart work, peel back the polyethylene film. If curing of the coating has occurred, use a utility knife to cut the cured coating away from the wall of the container. Peel away the cured layer of coating to expose fresh coating underneath.
Clean-up	Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with cleaner as selected from above. Fully cured coating is environmentally benign (will not harm) and is suitable for landfill disposal. However, always check local environmental regulations before disposal.

9 Product Characteristics

Level of sheen and surface finish is dependent on application method. Avoid using a combination of application methods whenever possible. Best results in terms of gloss and appearance will always be obtained with airless spray.

If overcoating after weathering or ageing, ensure the coating is fully cleaned to remove all surface contamination such as dust, grease, oil, salt crystals, traffic fumes, etc. before application of a further coat of Si-COAT 580.

This product must only be thinned using the recommended thinners. The use of alternate thinners may inhibit the curing mechanism of the coating.

Do not apply to substrate temperatures below 41˚F (5˚C).

When applying Si-COAT 580 in confined spaces ensure adequate ventilation and/or respiratory equipment is available. Consult the Si-COAT 580 MSDS for further details.

Si-COAT 580 has excellent tolerance to airborne chemical exposure. When severe chemical or solvent splashing/pooling is likely to occur please contact CSL Silicones Inc. for information regarding suitability.

10 Safety Precautions

This product is intended for use only by professional applicators in industrial situations in accordance with the advice given in this document, the Material Safety Data Sheet (MSDS) and the container(s), and should not be used without reference to the MSDS that CSL Silicones Inc. has provided to its customers.

All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards & regulations.

In the event welding or flame cutting is performed on metal coated with this product, dust and fumes may be emitted that will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

If in doubt regarding the suitability of use of this product, consult CSL Silicones Inc. for further advice.

11 Packaging

Package Size	*Product Volume*	*Product Weight*	*Shipping Weight*
1 US gal unit	1.0 US gal (3.8 liter)	11.2 lb (5.1 kg)	11.5 lb (5.4 kg)
5 US gal unit	5.0 US gal (18.9 liter)	56.2 lb (25.5 kg)	59.5 lb (27 kg)

12 Storage

Shelf Life	Twelve months from date of manufacture in the original unopened container at 90˚F (32˚C). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat or ignition.

CSL Silicones Inc.
144 Woodlawn Rd. W.
Guelph, ON N1H 1B5
Canada

T +1 519.836.9044
F + 1 519.836.9069
TF + 1 800.265.2753

www.cslsilicones.com