7.1 Technical Data Sheet

Si-COAT® 579™

Elastomeric Anti-Corrosion Coating

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TECHNICAL DATA SHEET

TD0727-0807

1 Introduction

The Si-COAT 579 product is a meticulously developed anti-corrosion coating, engineered from the ground up to adhere strongly to metal, concrete and old coating substrates. As a result of its specific and patented chemistry, Si-COAT 579 forms chemical bonds with the host surface, without the need for abrasive blasting and/or profiling, which are much stronger than those formed by coatings of conventional chemistry (e.g. epoxies, urethanes, alkyds, etc.), which require abrasive blasting and/or profiling. This lends the Si-COAT 580 product as an ideal and highly economical material for steel structure refurbishment or as an overcoat system over existing protective coatings.

2 Product Description

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

3 Intended Uses

Suitable for use in refurbishment projects 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 semi-gloss or low-gloss finish, or where high-gloss is undesirable.

4 Practical Information

Color
Wide range of standard colors. Custom colors available.

Gloss Level
Semi-gloss

Volume Solids
69%

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

Equivalent to…

12.0 to 29.0 mil (305 to 737 micron) wet film thickness (WFT)

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 per US gal	138.4	110.8	73.8	55.4
sq. ft per lb	13.8	11.1	7.4	5.5
sq. m per liter	3.4	2.7	1.8	1.4
sq. m per kg	2.9	2.3	1.5	1.1

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

Method of Application
Airless spray, roller or brush

Application 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:	30 minutes *(at standard conditions*)*
Tack-free Time:	60 minutes *(at standard conditions)*
Cure Through:	4 to 6 hours† *(at standard conditions)*
Full Physical Characteristics:	7 days *(at standard conditions)*

* Standard conditions are 77°F (25°C) and 50% relative humidity
† @ 10 mil (254 µ) wet film thickness

5 Regulatory Data

Flash Point	107°F (42°C)
Product Weight	10.0 lb/US gallon (1.2 kg/liter)
VOC	2.03 lb/US gallon (244.40 g/liter)

6 Physical Properties

UNCURED	
Appearance	Thick paint
Viscosity	6,500 ± 1,500 cP
Sag	35 ± 10 [Leneta Anti-Sag Meter]
Cure System	Neutral, moisture cure
CURED	*At standard conditions* for 7 days*
Hardness	35 [ASTM D2240, Shore A]
Tensile Strength	240 psi (17 kg/cm^2) [ASTM D412]
Adhesive Strength	2,700 psi (190 kg/cm^2) [on steel, ASTM D4541]
Elongation at Break	180% [ASTM D412]
Tear Resistance	34 ppi (6 kN/m) [ASTM D624, Die B]
Temperature Stability	Continuous: -70 to 480°F (-57 to 250°C) [no flame] Spike: Maximum 1000°F (538°C) [no flame, 5 minutes] Spike: Maximum 600°F (315°C) [no flame, 30 minutes]
Salt Water Exposure	No deterioration [2550 hours, 140°F (60°C)]
Thermal Conductivity	0.121 BTU/hr.ft.°F (5.0 x 10^{-4} Cal/sec.cm.°C)
Water Repellency Angle	96 degrees
UV Accelerated Weathering	No degradation [ASTM G53 Series, 5000 hours]

7 Surface Preparation & Surface Cleanliness

All surfaces to be coated should be free of dirt, dust, chalking paint, old caulking, grease, oil, release agents, curing compounds, laitance and other foreign matter including frost. Mortar spatter, all loose rust and all loose mill scale must be removed. Any paint that is peeling, flaking, cracking, blistering or lifting must be removed. Old coating that does not meet ASTM standard D3359-90 ("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.

* Standard conditions are 77°F (25°C) and 50% relative humidity

(cont'd from §7)

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

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/cm^2) chloride contamination).

8 Coating Application

Mixing

Si-COAT 579 is supplied as a one-part, ready-to-use coating. It is normal, however, during shipment or extended storage, for carrier solvent to rise to the top of the container. Upon opening of the container, mix by hand or by power agitator until an even consistency of coating is obtained.

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. 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 579.

The entire structure should be topcoated with a minimum 8.0 mil (200 micron) to 20.0 mil (508 micron) DFT of Si-COAT 579, depending on service conditions. The maximum advisable DFT of Si-COAT 579 is 100 mil (2,540 micron).

Airless Spray	*Recommended*	- Tip sizes to range from 13 to 27 thou (325 to 685 micron) - Total output fluid pressure at spray tip not less than 2,500 psi (176 kg/cm^2) - See recommended spray apparatus in Section 9
Roller	*Suitable*	- Use a high-quality, medium nap roller - Prior to rolling coating onto substrate, thoroughly roll out any loose hairs from the roller - Generally, 8 to 10 mil (200 to 254 micron) DFT can be achieved
Brush	*Suitable*	- Generally, 10 to 15 mil (254 to 381 micron) DFT can be achieved

Thinner

Naphtha or Odorless Mineral Spirits. It is recommended, however, that Si-COAT 579 be used at the viscosity supplied. If product is thinned, do not exceed local environmental legislation.

Cleaner

Naphtha or Odorless Mineral Spirits.

Work Stoppages & Restarts

It is not recommended that prolonged work stoppages occur upon only partial consumption of a container of Si-COAT 579.

If work must stop after only a portion of a container of Si-COAT 579 is consumed, seal air and moisture contact from coating by covering the surface of the coating with a sheet of polyethylene film. Reseal the container to be airtight.

(cont'd from §8)

Clean-up

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.

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 and suitable for landfill disposal. However, always check local environmental regulations before disposal.

9 Recommended Spray Apparatus

Part Description	*Graco Part No.*
Graco sprayer Xtreme™ King 80:1 complete, heavy duty cart-mount package [Includes air motor, pump, suction hose, cart and one each 510 gun, main hose and whip hose]	244-500
Graco pressure bleed valve repair kit	245-145
Graco air lubricator	244-841
Graco replacement screen filter elements, 30 mesh (595µ) 3 pack	238-435
Graco seal repair kit for King 80:1	244-850
Graco Fast-Flo drum pump c/w drum adaptor & Teflon seals	237-134
Repair kit for Graco Fast-Flo pump	213-013
Repair kit for Graco Fast-Flo air motor	214-584
Air valve & piston assembly for Graco Fast-Flo air motor	220-168
Graco fluid "whip" hose assembly, 5,000 psi (345 bar), nylon tube, neoprene cover, 3 ft (0.9 m) long, ¼ in (6.3 mm) I.D.	214-912
Graco fluid main hose assembly, 7,400 psi (510 bar), nylon tube, neoprene cover 49 ft (15 m) long, 3/8 in (9.7mm) I.D.	237-072
Graco XTR airless spray gun 7,250 psi (500 bar) c/w heavy duty GHD RAC reversible tip & guard	233-889
Graco gun repair kits for XTR airless spray gun	245-876
Tips for airless spray gun [xxx refers to the last three part numbers of Graco tips]	286-xxx

10 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 579.

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 579 in confined spaces ensure adequate ventilation and/or respiratory equipment. Consult Si-COAT 579 MSDS for further details.

Condensation occurring during or immediately following application may result in a matte finish.

Si-COAT 579 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.

11 Systems Compatibility

The following primers/intermediates are suitable for use with Si-COAT 579:

CSL-944™ Primer

All Si-COAT® branded products are compatible for use as basecoats or topcoats with each other.

12 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 and 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.

13 Packaging

Package Size	*Product Volume*	*Product Weight*	*Shipping Weight*
1 US gal unit	1.0 US gal (3.8 liter)	9.9 lb (4.5 kg)	11.0 lb (5.0 kg)
2.5 US gal unit	2.5 US gal (9.5 liter)	25.1 lb (11.4 kg)	26.5 lb (12.0 kg)
5 US gal unit	5.0 US gal (18.9 liter)	50.0 lb (22.7 kg)	52.9 lb (24.0 kg)
50 US gal unit	50.0 (189.3 liter)	500.7 lb (227.1 kg)	544.5 lb (247.0 kg)

For availability of other package sizes, please contact CSL Silicones Inc.

14 Storage

Shelf Life	Minimum 12 months from date of manufacture at 90°F (32°C). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat or ignition.

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