

Technical Data Sheet (TDS)

MSP Silicoat

Modified Silicon Polyurea

MSP Silicoat (MSP) is an extremely tough 100% solids aromatic polyurea with a silicone tail. This unique patent formulation enables the polyurea to have superior chemical and heat resistance, lower water absorption, better abrasion resistance and improved weathering. Although aromatic, the silicone reduces oxidation when exposed to direct sun light. Light colors will still change but gloss remains.

This new durable material can be formulated as FR (Fire Resistance) coating. **MSP** is resistant to extreme temperatures (e.g. in the range of about -40°C to +100°C), and is also resistant to extreme temperature fluctuations.

MSP will have less algae build up and reduce marine growth compared to regular polyurea.

MSP performs well when exposed to petroleum products such as gasoline with or without ethanol, diesel fuel with or without biofuel added and crude. Conventional polyurea is attacked by the ethanol's.

MSP is not limited to film thickness. It can be available in different hardness from 60 shore D to 85 Shore A. Tensile strength and elongation will vary with hardness. Patent Pending.

Physical Properties

Solids content	100%	
VOC	Zero	
Optical Clarity (no pigment)	Visual	Caramel Clear
Flex Modulus	ASTM D790	100-k psi
Tensile Strength	ASTM D412	3750 psi
Elongation	ASTM D412	350%
Water absorption (24hr)	ASTM D570	0.25%
Moisture Vapor Transmission	ASTM E96	0.24 perms
Hardness	ASTM D785	60 D
Abrasion Taber CS17	ASTM D4060	<30 mg/1k cycles
Tear Strength	ASTM D624	690 lbs/ lin. in
Gel Time	Time	5-15 sec
Mix Ratio	PBV	1:1

Technical Application Data

MSP is a two component 100% solids mixture which does not contain VOCs. Application temperature ranges from 4.5°C (40°F) to 38°C (100°F).

MSP requires heated plural spray equipment such as Graco EXP-2 using hose heats of 150 – 160F and primary heats the same. Spray pressures using Graco P2 or Fusion gun are to be set at 2000 psi. Surface preparation should be the same as regular polyurea that is clean, dry free of contaminates, free of dust and abraded.

Functional operation temperature ranges from -40°C (-40°F) to 121°C (250°F). Final topcoat application surface is slick and smooth.

Coverage

Coverage at 400micron (16 mils) is 9 m² (100 sq. ft.) / mixed gal.

Adhesion Results of Typical Substrates per ASTM D-4541 Elcometer

Concrete - Primed	> 300 psi	Concrete cohesive failure, excellent bonding
Steel - Primed	> 1000 psi	Excellent bonding
Wood - Primed	> 250 psi	Wood failure, excellent bonding

Substrate Surface Preparation

The surface must be clean, dry, stable and without loose areas or parts. All residues of fats, dust, dirt, salts or any other unrelated materials should be fully removed in order to ensure the adhesion of the coating to the surface. Leveled, stable, pollutant free and free from the loose parts is a guaranteed basis for the long lifespan of the system and achievement of the result.

Casting of new **concrete** can be coated 4 weeks (28 days in a temperature of 25°C) following the casting and with humidity content that does not exceed 4% in a 2.5cm depth under the surface. Concrete must have a compressive strength of at least 30Mpa; in case this requirement does not met, other recommended solutions for reinforcing the infrastructure should be applied.

The preparation of the surface should follow the requirements in the SSPC-SP13 standard in order to get a flat concrete surface that is dry, pollutant free, free from cement water loose parts and dust, with mechanical strength and upper level that are sufficiently porous and enable proper absorption of the coating. Remove completely pattern oil, curing materials, salts, efflorescence, cement water or any other materials using sandblasting, shot-blasting, mechanical milling, diamond polish or acidic etching.

Metal must be clean, free of contaminates and dust prior to primer / coating application. Metals

should be prepared with a sandblasting, shot blast or machine sanding depending on the severity of the surface condition. Spraying aggregates using compressed air (it is recommended to manually remove peeling layers of paint, rust peels and welding residues using manual or pneumatic scrapers before spraying) to get a surface level in a cleaning level so SA 2.5 (in accordance with the standard SIS 055900) in order to remove rust, loose parts, old paint, fats etc. from at least 95% of the area (in accordance with the standard SSPC-SP10). Perform dust cleaning using air pressure (fat and humidity free) or using a vacuum cleaner. In cases when aggregate spraying cannot be performed use mechanical or manual tools for careful cleaning using a disc, steel brush, sandpaper and scraper to remove mill scales, rust, layers of loose paint and pollutants up to a cleaning level of ST-3 in accordance with the standards SSPC-SP3, SSPC-SP11.

Call or e-mail our Tech Support Group for assistance in application and preparation.

It is always best to perform a test within a small section of the application area prior to full scale engagement.

Warranty

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