



SPECIALIZED INDUSTRIAL MATERIALS

## Silicone Polyurea System (SPS)

## TDS

SPS™ is a 100% solid polyurea with a silicone tail. This enables the polyurea to have superior chemical and heat resistance, lower water absorption, better abrasion resistance and improved weathering. Although aromatic the silicone tail reduces oxidation when exposed to direct sun light. Light colors will still change but gloss remains. SPS will have less algae build up and reduce marine growth compared to regular polyurea. SPS 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 ethanols. SPS 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 2000psi. Surface preparation should be the same as regular polyurea that is clean, dry and abraded. SPS can be available in different hardness from 65 shore D to 80 Shore A. Tensile strength and elongation will vary with hardness. Patent Pending.

SPS Silicone Fast-Set Spray able PHYSICAL PROPERTIES		
Appearance	Visual	Caramel Clear
Flex Modulus	ASTM D790	*100-250k psi
Tensile Strength	ASTM D412	*2500-3750 psi
Elongation	ASTM D412	*350-600%
Water absorption	ASTM D570	0.25%
Hardness -Shore A	ASTM D785	*90A-65D
Abrasion -TaberCS17	ASTM D4060	<30 mg/1k cycles
Tear Strength	ASTM D624	360-690 lbs/ lin. in.
Gel Time	Time	*15-180 sec
Mix Ratio	PBV	1:1

\* Values Range Relative To Gel - Time Formulation

### TECHNICAL APPLICATION DATA

SPS is a two component 100% solids mixture which does not contain VOCs. Application temperature ranges from 40°F to 100°F. SPS may be applied by a standard 2-component high pressure heated spray machine. SPS is not limited to film thickness. Substrate surfaces must be clean/dry and free of contaminants and dust. Depending on the formulation this 2K mixture may also be designed with a fast reaction time of 15 sec for production spray. Functional operation temperature ranges from -40°F to 250°F with intermittent to 350°F. Longer reaction times promote workability and self-leveling. In its hard formulation it will set up to a hard translucent high-temp walk-on protective finish in 1 hour. Final top-coat application surface is slick and smooth. Spray coverage at 16 mils is 100 sq. ft. / mixed gal.

In general, for all super-polymers, if adhesion to substrate is mandated to facilitate a structurally engineered component all target surfaces must be properly prepped for cleanliness and/or use the appropriate adhesion primer to acquire structural adhesion. Safety wear gear and cleanup materials are always required when performing application. Always refer to the SDS for material and safety standard procedures. **Adhesion Results of Typical Substrates per ASTM D-4541 Elcometer**

<b>Concrete- No Primer</b>	<b>&gt;300 psi</b>	<b>Cohesive failure; excellent bonding</b>
<b>Steel- No Primer</b>	<b>&gt;1000 psi</b>	<b>Excellent bonding</b>
<b>Composite Lamination</b>	<b>&gt;1000 psi</b>	<b>Saturated; excellent bonding</b>

**Preparation of substrate surface prior to the application of a Specialized Industrial Materials, LLC is extremely important to achieve proper system bonding.** Concrete must be fully cured and should be prepared with a sandblasting, diamond grinding or machine sanding depending on the severity of the concrete surface condition. Similar proper preparation must be performed for metals. Primers also require this proper preparation. Always power clean using mild detergent prior to sanding, etc. Call TechSupport Group for assistance with selecting S.I.M. application system. Also read the application. If patching concrete, use our mineral filled fast-set Acrylic Modified Epoxy applied by trowel. For expansion joints, use Joist Seal applied by hand cartridge dispensing gun. Composite substrates must be dry and free of dust before applying Single UV as an interlaminar bonding matrix material. It is always best to perform a test within a small section of the application area prior to full scale engagement. Please contact our Customer Service and Technical Support Group for any questions and to provide direction with specific selection of S.I.M. material system for the application, question-able surface conditions, operational procedures, material dispensing equipment, spray/pour guns, safety protection gear and clean-up kits.

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