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TESLAN® 8100 NANOSHIELD - PIPE

Product Description

TESLAN® 8100 NanoShield - Pipe is the next generation of moisture cured urethane for protection of downhole pipe. The 8100 was specifically designed and engineered for the protection of steel pipes in harsh and highly corrosive downhole environments. This product incorporates carbon nanotubes (CNTs) for enhanced durability and extraordinary corrosion protection. TESLAN® 8100 can be directly applied to a steel substate and is designed as a single coat, quick application.

Recommended Uses

For use in harsh downhole and immersion environments. Use directly on properly cleaned and prepared substrates.
Project applications include:

- Downhole pipe
- Downhole tools
- Tubular goods exposed to harsh environments

Product Characteristics (mixed)

Finish:	Aluminum, semi-gloss
Color:	Aluminum
Volume Solids:	53 ± 2% Calculated
Weight Solids:	60 ± 2% (unreduced)
Mix Ratio:	Single Component
Pot Life:	3 hrs @ 100ºF/38ºC 4 hrs @ 77ºF/25ºC 5 hrs @ 50ºF/10ºC
VOC:	2.96 lbs/gal (355 g/l) (unreduced)
Viscosity @77ºF(25ºC):	60 Krebs Units (unreduced)
Sweat-in-Time:	Not Required

***Use only TESLAN® 0902 Reducer**

Application Guidelines

This product is designed for application directly to properly cleaned substrates by hand tool, water jet or abrasive blast using traditional application equipment and techniques.

Recommended Film Thickness (unreduced):

	Min.	Max.
Wet mils (microns) per coat	2 (50)	6 (150)
Dry mils (microns) per coat	1 (50)	3 (75)

Theoretical Coverage (@ 1.0 mils / 25 microns dft): 802 ft^2/gal (74.5 m^2/l)

Application Guidelines (cont.)

As a moisture cured urethane, drying and recoat times are highly dependent on temperature and humidity.

RH%	90ºF(32ºC)	70ºF(21ºC)	50ºF(10ºC)
90%	1 Hr.	1.5 Hrs.	2-3 Hrs.
80%	1 Hr.	1.4 Hrs.	2-3 Hrs.
60%	1.5 Hrs.	1.5-2 Hrs.	3-4 Hrs.
40%	1-2 Hrs.	2-4 Hrs.	6-8 Hrs.
30%	2-3 Hrs.	3-6 Hrs.	10-14 Hrs.
20%	6 Hrs.	8-10 Hrs.	12-16 Hrs.
10%	12 Hrs.	12-18 Hrs.	18-24 Hrs.

This product requires the substrate temperature to be above the dew point during application and curing.

Surface Preparation
This product is designed for direct application to bare metal substrates. All surfaces should be clean, dry, contaminate free and in sound condition.

Minimum Surface Preparation Requirements:

For Steel

SSPC SP6 /NACE 3
Commercial Blast ISO8501-1: Sa 2
Surface Profile: 1-2 mil (25-50 micron)

(NOTE: Where blasting is not practical and conditions allow, prepare surface per SSPC SP11 Power Tool Cleaning to Bare Metal, achieving a minimum 1-2 mil (25-50 micron) profile.

Mixing Procedures & Thinning Recommendations
Mix with a power mixer until a uniform consistency is achieved. Do not allow a vortex to develop as that will introduce excessive moisture.

NOTE: Once container is opened, the product must either be used completely or sealed with no exposure to moisture in the air. If left open, the product will harden in the container. For breaks in work, drop spray gun into solvent pail.

Do not use material beyond its useful pot life limits.

If needed, reduce material up to 5% by volume using only TESLAN® 0902 Reducer.

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Application & Equipment

Airless Spray

Pressure	1500 PSI
Hose Dia:	1/4 - 1/2 inches (6.4 - 13 mm)
Tip:	0.013-0.015 inches (330-381 microns)
Filter:	Not required
Reduction:	As needed up to 5% by volume

Conventional Air-Spray

Air Pressure:	20-50 psi (1.38-3.5 bar)
Material Pressure:	20-30 psi (1.4-2.1 bar)
Hose Dia:	Minimum 1/4 inches (6.4 mm)
Tip Orifice:	0.05-0.078 inches (1.2-2 mm)
Air Cap:	Pressure Feed High Atomization
Combination Filter:	Not Required
Reduction:	As needed up to 5% by volume

Brush and Roller For brush and roll applications a natural bristle brush or a ¼" nap phenolic core roller may be used.

The above suggested parameters are for guidance only and settings may vary depending upon ambient conditions, actual equipment used, and project site specifics.

Cleanup

Immediately clean and flush equipment with TESLAN® 0902 Urethane Reducer or other suitable solvent.

Safety/Storage/Disposal

Safety
For specific information regarding occupational safety and health standards, please refer to the Code of Federal Regulations, Title 29, Part 1910.

Storage
Shelf Life: 24 months, unopened (under recommended conditions). Store indoors at 40ºF (5ºC) to 100ºF (38ºC).

Disposal
Dispose of unused material following all laws and regulations.

Disclaimer and Warranty

Tesla NanoCoatings' products are manufactured to the highest quality standards and practices; we offer these products with the express understanding that the user assumes all risk and liability in connection therewith. As the use of the product is beyond our control, Tesla NanoCoatings Inc. makes no warranties regarding the products and all other warranties, express or implied, including warranties of merchantability or fitness for specific, intended, or particular use or purpose, are explicitly disclaimed.

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