Technical Data Sheet

AXALTA

Nap-Gard®

7-2500 Fusion Bonded Epoxy

Revised: 6 March 2014

DESCRIPTION

Nap-Gard® Product No. 7-2500 is a thermosetting epoxy powder designed as a coating for underground and subsea pipeline service. In buried service, the coating is capable of withstanding continuous operating temperatures of 107°C (225°F). This product has been certified to meet the requirements of CSA Z245.20-10, NACE RP-0394-02 and NSF 61 for Potable Water Services.
For NSF 61 applications the maximum recommended film thickness is 14 mils.
This product is also recommended for use as a primer on multi-layer systems at a film thickness of 8-12 mils.

NSF

TYPICAL POWDER PROPERTIES

Color:	Reddish Brown	**Theoretical Coverage:**	134 Ft^2/lb/mil
Specific Gravity: Cured Film	1.44 ± .05 1.35 ± .05	**Typical Gel Time:** CSA Z245.20-10 @ 205°C (401°F)	22 ± 4 seconds
Density: CSA Z245.20-10	1440 ± 50 g/L	**Shelf Life*:** @ 25°C (77°F) @ 50% RH	12 months

* Transportation: The material is stable during transportation at temperatures below 25°C (77°F) and 50% RH.

TYPICAL PROPERTIES OF APPLIED FILM†

Recommended Film Thickness		Average Minimum	350µm (14 mils) 300µm (12 mils)
TEST / REQUIREMENT	**METHOD**	**CRITERIA**	**RESULT**
Impact Resistance	ASTM G14-72 CSA Z245.20-10	1/8"X5"X8" Steel Panels @25°C (77°F) @-30°C (-22°F)	160 in.lbs
Bending	CSA Z245.20-10 API-RP-5L7	3.0"/PD @-30° (-22°F)	Pass Pass
Elongation	Modified ASTM G10-72	@23°C (73°F)	10.96%
Hardness	ASTM D2583 ASTM D2240-74	Barcol Shore D	61 Average 90 Average
Hot Water Resistance	CSA Z245.20-10	75°C, 24 hours	Rating 1-2, Pass
Cathodic Disbondment	CSA Z245.20-10,	24 hours., 3.5 $V_{dc.}$, 65°C 28 days, 1.5 $V_{dc.}$, 23°C Strained C.D	2-4 mm radius Pass 3-5 mm radius Pass Pass
Thermal Conductivity	ASTM C177		0.19±0.02 BTU/hr./ft^2/ft./°F

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Chemical Resistance Test*	90 Day Immersion per CSA Z245.20-98	HCl in H_2O**	No Blistering
		10% NaCl, H_2SO_4 in H_2O **	No Blistering
		10% NaCl in H_2O **	No Blistering
		Distilled Water	No Blistering
		5% NaOH in H_2O **	No Blistering
		$MgCO_3/CaCO_3$ in H_2O **	No Blistering

** Distilled Water
* For additional information refer to Nap-Gard® Products Catalog Chemical Resistance Chart.
† Performance depends on film thickness. Consult Nap-Gard® Specialist for specific recommendations.

TYPICAL ELECTRICAL PROPERTIES OF FILM

Dielectric Strength ASTM D149-97	1500 volts/mil @ 250µm (10 mils)	**Breakdown Voltage** ASTM D149-97	volts @ 450µm (18 mils) 20K
Dielectric Constant ASTM D150	2.15 @ 1 MHz	**Volume Resistivity** ASTM D257	3.3 X 10^{15} ohm-cm.

GENERAL APPLICATION PARAMETERS

- Grit blast to NACE Near-White specifications (Swedish Standard #Sa2½) and profile between 50µm (2 mils) and 112µm (4.5 mils).
- Use phosphoric acid/deionized water rinse if water soluble salt contamination is suspected.
- Preheat pipe to approximately 232°C (450°F) to 246°C (475°F)
- Apply Nap-Gard® 7-2500 powder to meet customer thickness specifications.
- Follow recommended cure schedule (see below).
- Cure should be verified by DSC or other methods.
- Electrically inspect for holidays. Repair with Nap-Gard® 7-1631 or 7-1861, NSF approved SP-7888
- If girth welds are being coated, refer to Axalta's "Nap-Gard® Field Girth Weld Application Procedure".

CURE† SCHEDULE GUIDELINES

The cure schedule for Nap-Gard® Product No. 7-2500 shows the minimum time at temperature required to achieve the typical performance properties of the coating. Because pipe cooling rates vary so widely with pipe wall thickness, no allowance has been made for heat loss from the pipe but this can be easily measured on the coating line and allowance made. Recommended powder application temperature range is listed below for single/dual layer FBE and post heating is not a normal requirement. The minimum post application curing temperature (as measured on the coated pipe) and the time to quench may conform to the following cure schedule.

7-2500	
Application Temperature	**Min Time to Quench‡**
232°C (450°F)	90 seconds
239°C (463°F)	60 seconds
246°C (475°F)	60 seconds

† Cure is by residual heat in the pipe, therefore very light wall pipe may require additional post heat to complete cure.
‡ Recommended time to quench is based on the assumption that the listed temperature is maintained without any cool down rate. Time to quench will vary with application parameters and pipe sizes. **Therefore, the above information shall be used only as a guideline by the applicator to develop proper time to quench. Cure should be verified by DSC or other methods. For three layer, the optimum time for adhesive application is between 30-70% cure of the FBE. This has to be developed by the applicator based on the plant layout.**

Always consult product Material Safety Data (MSDS) prior to handling.

WARRANTY POLICY: Axalta Powder Coating Systems USA, Inc. ("Seller") certifies that all coatings delivered to Customer in unopened factory filled containers meet all pertinent quality standards presented in Seller's current published literature. Since matters of surface preparation, application procedures, curing procedures and other local factors that affect coating performance are beyond Seller's control; Seller assumes no liability for coating failure other than to supply replacement material for coating material proven to be defective. Customer will determine suitability of this product for it use and thereby assumes all risks and liabilities in connection therewith. Seller will not be liable for any injuries, damages or other losses derived, directly or indirectly, from or as a consequence of Customer's use of the product. **SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, RELATING TO ITS PRODUCTS AND THEIR APPLICATION, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES.**