



Technical Bulletin

ERSS 33254 Multi Purpose Green-61



Certified to
NSF/ANSI 61

Description:

ERSS 33254, Multi Purpose Green-61 is a thermosetting epoxy powder designed for both external and internal underground and subsea pipe line service. This product is offered in different gel times to allow various applications such as different pipe diameter, Tank, Pump, Valve and Fittings. This powder coating provides a combination of good physical and chemical resistance properties and corrosion resistance. The coatings is capable of withstanding continues operating temperatures of 225°F and designed for use on the inside steel pipe which in contact with corrosive oils, gases and waters. The maximum recommended film thickness is 20 mils for NSF applications. This product is also recommended for use as primer on multi-layer systems at a film thickness of 8-12 mils. This product meets the requirements of AWWA standards C116, C213, C550 and CSA Standard Z245.20-10.

Powder Properties:

Specific Gravity:	1.47±0.08
Theoretical Coverage:	131 sq.ft/lb/mil
Shelf Life @ 25°C (77°F)	12 months

Typical Properties of Applied Film

Recommended Film Thickness: (ASTM D523)	10-20 mil (Ave. 15 mil)
Adhesion (ASTM D-3359-95A)	5B
Shear Adhesion (ASTM D1002)	5800-6200 PSI
Penetration (ASTM G-17, 140°F for 96 hrs)	<4.0%
Impact Resistance: (ASTM D2794-93; 0.032" Steel panel)	160/160 in/lbs.
Impact Resistance: (ASTM G-14; 1/4x4x4 panel at 25°C)	50 in/lbs
Impact Resistance: (ASTM G-14; 1/8x4x4 panel at 25°C)	120 in/lbs
Abrasion Resistance: (ASTM D4060; Taber CS-17; 1kg wt.)	20-30 mg loss/1000 cycles
Flexibility (ASTM D522-93a @ 3-5 mils, Mandrel)	1/8 in.dia, no fracture
Water Immersion (UL262; 90 days-NaCl, H2O, Na2CO3, C8H5KO4)	No blisters
Cathodic Disbondment (CSA Z245.20; 24 hrs, 3.5 Vdc., 65°C)	2-4 mm radius-Pass
Cathodic Disbondment (CSA Z245.20; 28 days, 1.5 Vdc., 23°C)	3-5 mm radius-Pass
Cathodic Disbondment (CSA Z245.20; Strained C.D.)	No Cracking-Pass
Bending (CSA Z245.20; 3.0°/P.D@-22°F)	Pass
Hardness (ASTM D2583, Barcol)	61-63 Average
Hot Water Resistance (CSA Z245.20; 167°F, 24 hrs)	Rating 1-2; Pass
Typical gel time (D3451-92@204°C)	105±25 sec

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General Application

Surface Preparation: The surfaces must be clean until all oil, grease, water, inorganic salts and miscellaneous organic matter and free of contamination before abrasive blast cleaning. Blast clean to near white steel ensuring a proper profile for powder adhesion in accordance with SSPC-SP10 or to NACE#2, to achieve a uniform depth profile of 2.0-4.5 mils over surface of the bar. To this effect, a Profilometer can be used to measure the depth of profile. After blasting, use an air knife to remove excess grit. Iron or Zinc Phosphate pre-treatment is recommended for optimum performance.

Cure Schedules:

ERSS 33254, Multi Purpose Green-61 can be applied to the recommended film thickness by electrostatic spraying or fluidized bed application. This product has broad range of cure schedule depending on the application. The cure should be verified by DSC or any other methods. Inspect for holidays. A final cure of 10 minutes at 400°F or 7 minutes at 425°F can be used for NSF applications.

Pipe: Pre-heat: 400 to 475°F

Apply **ERSS 33254, Multi Purpose Green-61** to meet the customer thickness requirements.

Because pipe cooling rates vary so significantly with wall thickness of pipe, no allowance has been made for loss of heat from the pipe but this can be easily measured on the coating line and allowance made. The minimum post application curing temperature and the time to quench may conform to the following cure schedule.

Follow recommended cure schedule as shown below

<u>Application Temp</u>	<u>Time to Quench</u>
400°F	200-320 Seconds*
420°F	100-160 Seconds*
440°F	70-110 Seconds*
465°F	40-90 Seconds*
475°F	35-70 Seconds

*depends on the gel time. The products that require post-cure do not need quenching. The pre-heat, post cure or quenching varies slightly depending on the application.

Coating Repairs:

The components with excessive coating defects should be completely re-blasted to near –white finish and re-coated.

Storage

ERSS 33254, Multi Purpose Green-61 should be stored at temperatures below 77°F, in a dry area away from any heat source. Reclaimed powder must be protected from contamination and excessive heat and humidity. Please refer to the MSDS for safety information.

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