LIFELAST®
Innovation Through Formulation

DURASHIELD™ 210-61

TECHNICAL DATA SHEET

EFFECTIVE: 8/22/2019

PRODUCT DESCRIPTION

CHEMICAL DESCRIPTION
Solventless Aromatic Polyurethane, Chemical Cure, ASTM D16 Type V

USAGE
DuraShield 210-61 (DS210-61) is a 100% solids, two-component polyurethane that contains no volatile organic compounds (VOC), solvents or extending fillers. Formulated specifically as a potable water tank, pipe, valve and fitting lining product, DS210-61 is a hard, durable, chemical resistant coating that also provides great flexibility and impact resistance for ferrous and non-ferrous metals, concrete and other surfaces. By employing hydrophobic polyurethane resins, DS210-61 has a very low water absorption rate – lower even than most epoxies – and excellent cathodic disbondment resistance. The hydrophobic properties of DS210-61 also impart improved tolerance to moisture, in the container, during application and in service. This allows DS210-61 to cure to a hard, flexible, durable film with a glossy, well-adhered, moisture, chemical resistant finish. DS210- 61 is designed specifically to provide very fast cure times, while at the same time demonstrating excellent adhesion. DS210-61 is applied by an approved LifeLast spray system.

COLORS
Almond, gray or black

CURE SPEED
DuraShield 210 is available in a variety of cure speeds ranging from 0 to 10 (with 0 being the slowest). Please contact a LifeLast technical representative for information on which cure speed is best suited for your application parameters.

QUALIFICATIONS
- Meets AWWA C222
- Certified to NSF/ANSI Standard 61 by the NSF for lining potable water tanks, pipes, valves, and fittings.
  - ◊ Pipe, Valves, Fittings ≥8”; thickness up to 250 mils
  - ◊ Tanks ≥50 gallons; thickness up to 250 mils
- FDA approved for dry bulk applications
- Meets USDA requirement for incidental contact
- USDA BioPreferred℠: Certified 48% biobased product

TYPICAL APPLICATIONS
- **Potable Water Pipe Linings**
- **Potable Water Tank Linings**
- **Lining for Potable Water Valves and Fittings**
- **Penstock Linings**

PRODUCT ADVANTAGES

HIGHLY IMPERMEABLE
Provides excellent corrosion protection; highly resistant to cathodic disbondment

EXCELLENT ADHESION

ABRASION & IMPACT RESISTANT
Mitigates damage during handling and installation

GOOD FLEXIBILITY
Expands and contracts with substrate; highly impact resistance

HIGH BUILD CHARACTERISTICS
Application thicknesses from 20 mils to 250 mils in one application; completely encapsulates welds, rivets and edges

LOW COEFFICIENT OF FRICTION
Supports the development of additional velocity in penstock

NO LIQUID EXTENDING FILLERS
Solid, film provides optimal properties

PRIMERS

COATING SYSTEMS

- **Steel**: Self-priming
- **Non-Ferrous Metals & Galvanized Steel**: Self-priming, Primall 125 or Primall-160
- **Concrete & Wood**: Self-priming, Primall-125 or Primall-160

DuraShield 210-61
Technical Data Sheet

Effective: 8/22/2019

Technical Data

Solids
100% by volume

Mix Ratio By Volume
2 : 1 [DS210-61 (Polyol) : Activator 9000 (ISO)]

Recommended Dry Film Thickness
20 mils up to 500+ mils (no max); thickness varies with application. Consult a LifeLast technical representative for information.

Coverage

- Theoretical: 80.2 ft²/gallon @ 20 mils
- Spray: ≈ 70-75 ft²/gallon @ 20 mils

Net Weight Per Gallon (almond)

- Polyol: 8.8 ± 0.2 lbs/gallon
- ISO: 10.3 ± 0.2 lbs/gallon
- Mixed: 9.3 ± 0.2 lbs/gallon

Physical Properties

Test	Standard	Result
Adhesion to Steel	ASTM D4541; A.4	> 1500 psi
Tensile Strength	ASTM D412	3030 psi
Elongation	ASTM D412	10%
Flexibility	ASTM D522	No cracking or delamination – 1" Mandrel
Cathodic Disbondment	ASTM G95, Method A	<12 mm
Cathodic Disbondment	ASTM G8, Method A	<12 mm
Water Absorption	ASTM D570	0.464%
Impact Resistance	ASTM G14, pipe and flat plate	> 154 in-lbs
Hardness, Shore D	ASTM D2240	74±4
Abrasion Resistance	ASTM D4060, CS17	17.5 mg
Water Vapor Permeability	ASTM E96 Procedure BW-Inverted Water Method	0.049 inch-pounds @ 33 mils
Dielectric Strength	ASTM D149	470 V/mil
Chemical Resistance	ASTM D543 Per C222	Pass
Service Temperature	Dry – Continuous: -40°F (-40°C) to 200°F (93°C) Maximum Surge: 350°F (177°C) Immersion – Insulated (max): 140°F (60°C) Non-Insulated: 120°F (49°C)	

Cure Time @ 70°F (21°C) - 75°F (24°C)*

Designation Speed	3	1
Tack Free	8-15 min.	30-45 min.
Recoat Time	< 2 hours	4 hours
To Immersion (per NSF)	72 hours	72 hours
To Handling/Traffic	20-30 min.	1.5-2 hours

* Varies by application technique, thickness & temperature

Time to Holiday Test
Coating must be cured to handle before holiday testing

Shelf Life
12 months at recommended storage temperatures in sealed, unopened containers

Storage

- Temperature
  - ◊ Polyol: Min 40°F (4°C), Max 120°F (49°C)
  - ◊ ISO: Min 40°F (4°C), Max 120°F (49°C)
- Containers must be kept sealed in a dry environment.
- Contact LifeLast for continuous storage above 90°F (32°C)

Shipping Instructions
Unheated trailer, no special requirements. Keep dry.

Application

Surface Preparation
Preparation requirements vary with application. Refer to the *DuraShield 210 & DuraShield 210-61 Application Specification Sheet – Steel Pipe* or contact LifeLast technical for assistance

Mixing
Power mix contents of polyol containers, making sure to remove all pigment from the bottom of the container. Mixing of ISO is not required

Gel Time
Cure Speed 3: ≈ 50 seconds; Cure Speed 0: ≈ 120 seconds @ 70°F (21°F) material temperature

Spray Temperature*
Polyol: 110°F (43°) - 150°F (66°C); ISO: 80°F (27°C) - 150°F (66°C)
*Exact temps depend on spray equipment setup

Surface Temperature
Min. 40°F (4°C), Max 140°F (60°C); surface should be clean, dry and more than 5°F (3°C) above dew point.

Ambient Conditions

- Min. 0°F (-18°C), Max 120°F (49°C)
- Relative humidity should be less than 85%. Ambient air temperature must be no less than 5°F (3°C) above dew point.

Spray Equipment
Refer to *DuraShield 210 & DuraShield 210-61 Application Specification Sheet – Steel Pipe* for recommended spray equipment and setup. **Spray applicators and equipment**