LifeLast®
Innovation through Formulation

DuraShield™ 310-61 JARS

Technical Data Sheet

Effective: 7/21/20

Product Description

Chemical Description
Solventless Elastomeric Aromatic Polyurethane, Chemical Cure, ASTM D16 Type V

Usage
DuraShield 310-61 (DS310-61) is a 100% solids, two-component polyurethane coating that contains no volatile organic compounds (VOC), solvents or hydrocarbon extending fillers. The DS310-61 Joint & Repair System (JARS) is a user-friendly polyurethane formulation that can be hand applied to field joints and used for repairs. The long pot life of DS310-61 allows for hand application on larger surfaces, and the short cure time decreases the waiting time between coats. The hydrophobic nature of DS310-61 makes it suitable for hand application without foam formation, even in humid environments. DS310-61 provides the low permeability and chemical resistance of an epoxy, with the durability, flexibility and fast cure times of polyurethanes. This blend of properties results in excellent application characteristics, while at the same time making it ideal for long-term immersion protection. While DS310-61 has fast cure times, the nature of its chemistry allows for long recoat windows relative to comparative 100% solid urethanes. This helps to mitigate layering and recoat adhesion problems. DS310-61 is also formulated to provide optimal build properties, imparting good coverage properties on edges, seams and welds.

Colors
Standard colors are almond and gray. Black is also available.

Qualifications
- Meets AWWA C222
- FDA approved for dry bulk application
- Meets USDA requirement for incidental contact
- 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
- USDA BioPreferred℠: Certified 64% Biobased Product

Typical Applications
- **Potable Water Pipe Linings**
- **Potable Water Tank Linings**
- **Lining for Potable Water Valves and Fittings**
- **Girth Weld Coatings for Steel Pipe**

Product Advantages

Highly Impermeable
Provides excellent corrosion protection

Great Chemical Resistance
Withstands most concentrated acids and bases

Abrasion & Impact Resistant
Mitigates damage during handling and installation

Excellent Adhesion

Safe to Work With and Apply
No solvents or VOC's

User-friendly Application Properties
Long pot life with a short cure time; designed for hand-application

Good Flexibility
Expands and contracts with the substrate; great impact resistance

High Build Characteristics
Application thicknesses of 20 mils or more by hand; completely encapsulates welds, rivets and edges

Quick, Inexpensive Maintenance
Patch holidays and damage spots in minutes

Long Recoat Window
Up to 24-hour recoat window is beneficial for multi-day applications, holiday repair, and addressing low millage areas.

Coating Systems

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

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Solids
100% by volume

Mix Ratio By Volue
3 : 1 [DS310-61 (POLYOL) : Activator 9000 (ISO)]

Recommended Dry Film Thickness
20 mils up to 250 mils; thickness varies with application. Consult a LifeLast technical representative for information.

Coverage

- Theoretical: 80.2 ft²/gal
- Hand: ≈70-75 ft²/gal @ 20 mils

Net Weight Per Gallon (Almond)

- POLYOL: 10.9 ± 0.2 lbs/gallon
- ISO: 10.3 ± 0.2 lbs/gallon
- Mixed: 10.7 ± 0.2 lbs/gallon

Physical Properties

Test	Standard	Result
Adhesion to Steel	ASTM D4541; A.4	>1500 psi
Tensile Strength	ASTM D412	2776 psi
Elongation at Break	ASTM D412	41%
Flexibility, 75 mils	ASTM D522	No cracking or delamination – ¾" Mandrel
Cathodic Disbondment	ASTM G95, Method A	<12 mm
Water Vapor Permeability	ASTM E 96 Procedure BW-Inverted Water Method	0.09 inch-pounds @ 53 mils
Water Absorption	ASTM D570	0.49%
Pressure Bomb Aging; 90°C in Synthetic Seawater	ASTM D471	Weight Gain: 11 days – 5.9% 21 days – 5.7%
Hardness, Shore D	ASTM D2240	70±3
Abrasion Resistance	ASTM D4060, CS17	45.1 mg
Impact Resistance	ASTM G14	120 in-lbs
Dielectric Strength	ASTM D149	527 V/mil
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)	
Chemical Resistance	ASTM D543	Pass
Pickle Jar	(Greenbook) Section 211-2	Pass

Cure Time 70°F (21°C) - 75°F (24°C)*

Tack Free	4 hours
Recoat Time	72 hours
To Immersion**	72 hours
To Handling/Traffic	15 hours

* Varies by application technique, thickness & temperature
** As per NSF Certification

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 applicable *DuraShield 310-61 JARS Application Specification Sheet* or contact a LifeLast technical representative 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.

Pot Life
12-15 minutes @ 75°F (24°C) for Standard speed (varies with batch size). Higher temperatures decrease pot life.

Material Temperature
POLYOL: 40°F (4°C) - 120°F (49°C); ISO: 40°F (4°C) - 120°F (49°C)

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 the dew point.

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