



DURASHIELD™ 310

TECHNICAL DATA SHEET

EFFECTIVE: 9/1/2019

PRODUCT DESCRIPTION

CHEMICAL DESCRIPTION

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

USAGE

DuraShield 310 (DS310) is a 100% solids, volatile organic compound (VOC) and solvent-free, two-component polyurethane coating. Formulated as a hard, durable, chemical resistant coating, DS310 also provides good flexibility and impact resistance for ferrous and nonferrous metals, concrete and other surfaces. DS310 provides the low permeability and chemical resistance of an epoxy, with the durability, flexibility and fast cure times of polyurethanes. This blend of properties allows for excellent application characteristics, while at the same time making it ideal for a wide range of applications, including long-term immersion protection. While DS310 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 is formulated to provide optimal build properties, often allowing for the required coating thickness to be applied in one coat – even on seams, welds and rivets – while at the same time providing good overcoat properties and aesthetics. Application of DS310 is accomplished by spray using an approved LifeLast spray system or by hand.

COLORS

Standard color is almond. Call regarding other colors.

QUALIFICATIONS

- Meets AWWA C222
- FDA approved for dry bulk applications
- Meets USDA requirement for incidental contact
- USDA BioPreferredSM: Certified 64% Biobased Product

TYPICAL APPLICATIONS

- **Wastewater Industry:** municipal and industrial
- **Pulp & Paper Industry**
- **Agri-Business**
- **Primary and Secondary Containment**
- **Water Market:** interior lining and exterior corrosion protection
- **Concrete Restoration & Protection**
- **Fish Hatcheries**

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; protects against wear and erosion.

EXCELLENT ADHESION

Bonds well to a wide array of substrates

GOOD FLEXIBILITY

Expands and contracts with the substrate; great impact resistance

HIGH BUILD CHARACTERISTICS

Application thicknesses from 20 mils to inches in one application; 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

TOPCOATS

- Approved aliphatic urethanes. Consult a LifeLast representative for more information.

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TECHNICAL DATA

SOLIDS

100% by volume

MIX RATIO BY VOLUME

3 : 1 [DS310 (POLYOL) : Activator 9000 (ISO)]

RECOMMENDED DRY FILM THICKNESS

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

COVERAGE

- Theoretical: 80.2 ft²/gal
- Spray: ≈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

CURE TIME 70°F (21°C) - 75°F (24°C)* @ 80 mils

Designation	Standard	Fast Set
Tack Free	4 hours	50 min.
Recoat Time	24 hours	24 hours
To Immersion	12 hours	2 hours
To Handle	15 hours	4 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.

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 – 3/4" Mandrel
Cathodic Disbondment	ASTM G95, Method A	<12 mm
Water Vapor Permeability	ASTM E96 Procedure BW-Inverted Water Method	0.09 inch-pounds @ 53 mils
Water Absorption	ASTM D570	0.49%
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

APPLICATION

SURFACE PREPARATION

Preparation requirements vary with application. Refer to the applicable *DuraShield 310 & DuraShield 310-61 Application Specification Sheet* or contact LifeLast 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) (varies with batch size); ≈ 4 minutes @ spray temperatures for Standard speed

SPRAY TEMPERATURE*

POLYOL 120°F (49°C) - 150°F (66°C); ISO: 80°F (27°C) - 150°F (66°C)

*Exact temperatures 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 the dew point.

SPRAY EQUIPMENT

Refer to the applicable *DuraShield 310 & DuraShield 310-61 Application Specification Sheet* for recommended spray equipment and setup. **Spray applicators and equipment must be certified by LifeLast.**

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