LIFELAST™
Innovation Through Formulation

USDA CERTIFIED BIOBASED PRODUCT
PRODUCT 64%

DURASHIELD™ 310

TECHNICAL DATA SHEET

EFFECTIVE: 01/03/12

PRODUCT DESCRIPTION

CHEMICAL DESCRIPTION
Solventless Elastomeric Aromatic Polyurethane, Chemical Cure, ASTM 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 also formulated to provide optimal build properties. DS310 is formulated to provide optimal build properties, 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 BioPreferred℠: certified 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

HEALTH AND SAFETY
Consult the *DuraShield 310 Material Safety Data Sheet* (MSDS) for handling and safety information.

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 expensive equipment

STRONG ADHESION
Over 1500 psi on abrasive blasted steel

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 holes and wear 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 or Primall-160
- **Concrete & Wood**: Self-priming or Primall-160

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

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TECHNICAL DATA

SOLIDS VOLUME
100 percent

MIX RATIO BY VOLUME
By Volume: 3 : 1; By Weight: 3.17 : 1 (Resin : Activator)

RECOMMENDED DRY FILM THICKNESS
20 mils to 500+ mils (no max); thickness varies with application. Consult a LifeLast technical representative for assistance.

COVERAGE
- Theoretical: 80.2 ft²/gal; Typical: ≈70 ft²/gal @ 20 mils

NET WEIGHT PER GALLON (ALMOND)
- Resin: 10.85 ± 0.2 lbs/gallon
- Activator: 10.3 ± 0.15 lbs/gallon
- Mixed: 10.7 ± 0.2 lbs/gallon

PHYSICAL PROPERTIES

Test	Standard	Result
Adhesion to Steel	ASTM D4541; A.2	> 1500 psi
Adhesion to Steel	ASTM D6677	Rating - 10
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, mtd A	0 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	68±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 to 200°F Maximum Surge: 350°F Immersion – Insulated (max): 140°F Non-Insulated: 120°F	
Chemical Resistance	ASTM D543	10% H_2SO_4 < 1% 30% NaCl < 1% 30% NaOH < 2%

CURE TIME*

Designation	45°F	75°F	105°F
Tack Free	360 min.	120 min.	60 min.
Recoat Time	< 24 hours	< 24 hours	< 24 hours
To Immersion	24 hours	12 hours	6 hours
To Handling/Traffic	36 hours	12 hours	6 hours

* Varies by application technique & thickness

TIME TO HOLIDAY TEST
Coating must be tack free before holiday testing

SHELF LIFE
12 months at recommended storage temperatures in sealed, unopened containers.

STORAGE
- Temperature
  - Resin: Min 40°F, Max 120°F
  - Activator 9000: Min 40°F, Max 120°F
- Containers must be kept sealed in a dry environment.

SHIPPING INSTRUCTIONS
Unheated trailer, no special requirements. Keep dry.

APPLICATION

SURFACE PREPARATION
Preparation requirements vary with application. Refer to the applicable *DuraShield 310 and DuraShield 310-61 Application Specification Sheet* or contact a LifeLast technical representative for assistance.

MIXING
Power mix contents of resin containers for a minimum of 30 minutes, making sure to remove all pigment from the bottom and sides of the container. Activator mixing is not needed.

POT LIFE
12-15 minutes @ 75°F (varies with batch size); ≈ 4 minutes @ spray temperatures

SPRAY TEMPERATURE*
Resin: 120°F - 150°F; Activator 9000: 80°F - 150°F
*Exact temps depend on spray equipment setup

SURFACE TEMPERATURE
Min. 40°F, Max 140°F; surface should be clean, dry and more than 5°F above dew point. Ambient air temperature must be no less than 5°F above dew point.

AMBIENT CONDITIONS
- Min. 0°F, Max 120°F
- Relative Humidity should be less than 95%

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