



DURASHIELD™ 310 JARS

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, two-component polyurethane coating that contains no volatile organic compounds (VOC), solvents or hydrocarbon extending fillers. The DS310 Joint & Repair System (JARS) is a user friendly polyurethane formulation that can be hand or spray applied to joints and for repairs. The long pot life of DS310 allows for hand application on larger surfaces, and the short cure time decreases the waiting time between coats. The hydrophobic nature of DS310 makes it suitable for hand application without foam formation, even in humid environments. 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 results in excellent application characteristics, while at the same time making it ideal for 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. Complete encapsulation of welds and joints can be accomplished by two 20-25 mil coats by hand.

COLORS

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

QUALIFICATIONS

- Meets AWWA C222
- USDA BioPreferredSM: certified biobased product

TYPICAL APPLICATIONS

- Non-potable Water Pipe Linings
- Non-potable Water Tank Linings
- Lining for Non-potable Water Valves and Fittings

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

SAFE TO WORK WITH AND APPLY

No solvents or VOC's

USER-FRIENDLY APPLICATION PROPERTIES

Long pot life with a short cure time; can be hand-applied

GOOD FLEXIBILITY

Expands and contracts with the substrate; great impact resistance

HIGH BUILD CHARACTERISTICS

Application thicknesses of 20-25 mils by hand; 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

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SOLIDS VOLUME

100 percent

MIX RATIO BY VOLUME

By Volume: 3 : 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.

THEORETICAL COVERAGE

- Spray: 80.2 ft²/gal; Hand: ≈70 ft²/gal @ 20 mils
- One kit covers a 12" wide section of 60" diameter pipe

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 ₂ SO ₄ < 1% 30% NaCl < 1% 30% NaOH < 2%

CURE TIME*

Designation	45°F	75°F	105°F
Tack Free	360 min.	120-150 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 JARS 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)

APPLICATION TEMPERATURE

Resin: 60°F - 80°F; Activator 9000: 60°F - 80°F

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%

APPLICATION EQUIPMENT

Refer to the applicable *DuraShield 310 JARS Application Specification Sheet* for recommended equipment and setup. For spray applications, see *DuraShield 310*.

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