



# DURASHIELD™ 110

## TECHNICAL DATA SHEET

EFFECTIVE: 11/06/17

### PRODUCT DESCRIPTION

#### CHEMICAL DESCRIPTION

Solventless Aromatic Polyurethane, Chemical Cure, ASTM D16 Type V

#### USAGE

DuraShield 110 (DS110) is a 100% solids, two-component polyurethane that contains no volatile organic compounds (VOC), solvents or extending fillers. DS110 is a 1:1 by volume mix-ratio polyurethane based on the chemistry of LifeLast's very successful DuraShield 210 system. Offering similar physical and chemical properties as the DS210 – hard, durable, chemical resistant film that also provides great flexibility and impact resistance – the DS110, however, utilizes a balanced 1:1 mixing ratio. By employing hydrophobic polyurethane resins, DS110 has a very low water absorption rate – lower even than most epoxies – and excellent cathodic disbondment resistance. The hydrophobic properties of DS110 also impart improved tolerance to moisture in the container, during application and in service. This allows DS110 to cure to a hard, flexible, durable film with a glossy, well-adhered, moisture and chemical resistant finish. DS110 is designed specifically to provide very fast cure times, while at the same time demonstrating excellent adhesion. DS110 is applied by an approved LifeLast spray system.

#### COLORS

Standard color is almond. Call regarding other colors.

#### CURE SPEED

- 8:** fast cure rate allows quick handling and processing
- 3:** moderate cure rate allows overspray to wet back into the film on pipe lining and fitting applications
- 1:** slowest cure rate for use with mix manifolds/ flex guns; offers the longest recoat window

#### QUALIFICATIONS

Meets AWWA C222  
FDA approved for dry bulk applications  
Meets USDA requirement for incidental contact

#### TYPICAL APPLICATIONS

##### Water Transmission and Storage

**Wastewater Treatment:** municipal & industrial

**Pipes:** interior linings & exterior coatings

**Tanks:** interior linings & exterior corrosion protection

**Penstocks:** interior linings & exterior coatings

### 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 resistant

#### HIGH BUILD CHARACTERISTICS

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

#### LOW COEFFICIENT OF FRICTION

Supports the development of additional velocity in penstocks

#### NO LIQUID EXTENDING FILLERS

Solid film provides optimal properties – excellent long-term adhesion

### 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.

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**SOLIDS**

100% by volume

**MIX RATIO**

1 : 1 by volume

**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 ft<sup>2</sup>/gallon @ 20 mils
- Typical Spray Application: ≈ 70-75 ft<sup>2</sup>/gallon @ 20 mils

**NET WEIGHT PER GALLON (ALMOND)**

Polyol: 9.0 ± 0.2 lbs/gallon

ISO: 9.7 ± 0.2 lbs/gallon

Mixed: 9.4 ± 0.2 lbs/gallon

**CURE TIME @ 75°F \***

Designation Speed	8	3	1
Tack Free	2-3 min.	8-15 min.	30-45 min.
Recoat Time	< 1 hour	< 2 hours	4 hours
To Immersion	4 hours	6 hours	12 hours
To Handling/Traffic	5-10 min.	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, Max 120°F
  - ◊ ISO: Min 40°F, Max 120°F
- Containers must be kept sealed in a dry environment.
- Contact LifeLast for continuous storage above 90°F

**SHIPPING INSTRUCTIONS**

Protect ISO from freezing. Keep dry.

PHYSICAL PROPERTIES		
Test	Standard	Result
Adhesion to Steel	ASTM D4541; A.4	> 1500 psi
Tensile Strength	ASTM D412	4410 psi
Elongation	ASTM D412	8%
Flexibility	ASTM D522	No cracking or delamination – 2" Mandrel
Cathodic Disbondment	ASTM G95, Method A	<12 mm
Water Absorption	ASTM D570, Long Term	1.15%
Impact Resistance	ASTM G14	120.5 in-lbs
Hardness, Shore D	ASTM D2240	77±3
Abrasion Resistance	ASTM D4060, CS17	67.4 mg
Dielectric Strength	ASTM D149	862 V/mil
Chemical Resistance	ASTM D543 Per C222	Pass

### APPLICATION

**SURFACE PREPARATION**

Preparation requirements vary with application. Refer to the *DuraShield 110 Application Specification Sheet – Steel Pipe* or contact a LifeLast technical representative for assistance.

**MIXING**

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

**GEL TIME**

Cure Speed 8: ≈ 25 seconds; Cure Speed 3: ≈ 50 seconds; Cure Speed 1: ≈ 120 seconds @ 70°F material temperature

**SPRAY TEMPERATURE\***

Polyol: 110°F - 150°F; ISO: 80°F - 150°F

\*Exact temperatures 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 CONDITIONS**

Min. 0°F, Max 120°F

Relative humidity should be less than 85%. Ambient air temperature must be no less than 5°F above the dew point.

**SPRAY EQUIPMENT**

Refer to *DuraShield 110 Application Specification Sheet – Steel Pipe* for recommended spray equipment and setup. **Spray applicators and equipment must be certified by LifeLast.**

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