



LIFELAST™
Innovation Through Formulation

DURASHIELD™ 210

TECHNICAL DATA SHEET

EFFECTIVE: 01/03/12

PRODUCT DESCRIPTION

CHEMICAL DESCRIPTION

Solventless Aromatic Polyurethane, Chemical Cure, ASTM Type V

USAGE

DuraShield 210 (DS210) is a 100% solids, two-component polyurethane coating that contains no volatile organic compounds (VOC), solvents or extending fillers. Formulated specifically as a pipe coating and lining product, DS210 is a hard, durable, chemical resistant coating that also provides great flexibility and impact resistance for ferrous and non-ferrous metals, concrete and other surfaces. By employing hydrophobic polyurethane resins, DS210 has a very low water absorption rate – lower even than most epoxies – and excellent cathodic disbondment resistance. The hydrophobic properties of DS210 also impart improved tolerance to moisture, both in the container and during application. This allows DS210 to cure to a hard, flexible, durable film with a very glossy, extremely well-adhered, impermeable finish. DS210 is designed specifically to provide very fast cure times, while at the same time demonstrating excellent adhesion. DS210 is applied by an approved LifeLast spray system.

COLORS

Standard color is almond. Call regarding other colors.

CURE SPEED

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

QUALIFICATIONS

- Meets AWWA C222
- FDA approved for dry bulk applications

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; great impact resistance

HIGH BUILD CHARACTERISTICS

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

LOW COEFFICIENT OF FRICTION

Supports the development of maximum head pressure

NO EXTENDING FILLERS

Solid, unfilled film provides optimal properties – excellent long-term adhesion

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.

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TECHNICAL DATA

SOLIDS VOLUME

100 percent

MIX RATIO BY VOLUME

2 : 1 (Resin : Activator)

HEALTH AND SAFETY

Consult the *DuraShield 210 Material Safety Data Sheet* (MSDS) for handling and safety information.

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/gallon @ 20 mils
- Typical Application: ≈ 70 ft²/gallon @ 20 mils

NET WEIGHT PER GALLON (ALMOND)

- Resin: 8.8 ± 0.2 lbs/gallon
- Activator: 10.3 ± 0.15 lbs/gallon
- Mixed: 9.3 ± 0.2 lbs/gallon

CURE TIME*

Designation	Interior	Exterior	Patch
Tack Free	8-15 min.	2-3 min.	30-45 min.
Recoat Time	< 2 hours	< 1 hour	4 hours
To Immersion	6 hours	4 hours	12 hours
To Handling/Traffic	20-30 min	5-10 min.	1.5-2 hours

* Varies by application technique, thickness, & temperatures

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: Min 40°F, Max 120°F
- Containers must be kept sealed in a dry environment.

SHIPPING INSTRUCTIONS

Unheated trailer, no special requirements. Keep dry.

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	3030 psi
Elongation	ASTM D412	10%
Flexibility	ASTM D522	No cracking or delamination – 1” Mandrel
Cathodic Disbondment	ASTM G95, mtd A	0 mm
Water Absorption	ASTM D570	0.464%
Impact Resistance	ASTM G14	180 in-lbs
Hardness, Shore D	ASTM D2240	75±3
Abrasion Resistance	ASTM D4060, CS17	17.5 mg
Water Vapor Permeability	ASTM E 96 Procedure BW-Inverted Water Method	0.049 inch-pounds @ 33 mils
Dielectric Strength	ASTM D149	470 V/mil
Chemical Resistance	ASTM D543	10% H ₂ SO ₄ < 1% 30% NaCl < 1% 30% NaOH < 2% #2 Diesel 2 weight, <2% length/width

APPLICATION

SURFACE PREPARATION

Preparation requirements vary with application. Refer to the *DuraShield 210 and DuraShield 210-61 Application Specification Sheet – Steel Pipe* 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 not needed.

GEL TIME

Patch: ≈ 120 seconds; Interior: ≈ 50 seconds; Exterior: ≈ 20 seconds

SPRAY TEMPERATURE*

Resin: 110°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 *DuraShield 210 and DuraShield 210-61 Application Specification Sheet – Steel Pipe* for recommended spray equipment and setup. **Spray equipment must be approved by LifeLast.**

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