



2870 CRESTWOOD BLVD. STE B
IRONDALE, AL 35210
205-857-0040



DEFENDER

DEFENDER AR56

TECHNICAL DATA SHEET

DESCRIPTION

Defender AR56 is a fast setting, rapid curing, 100% solids, flexible, aromatic, plural component spray polyurea that can be applied to suitably prepared concrete and metal surfaces. It has extremely fast gel time making it suitable for applications down to -20°F (-28.89°C). It may be applied in single or multiple applications without appreciable sagging and is relatively insensitive to moisture and temperature allowing application in most temperatures. Defender AR56 offers a tack free time of less than sixty seconds and exhibits 400% ± 50% elongation upon curing with 50 Shore D hardness.

FEATURES

- Coats Carbon or Mild Steel Metals without Primer
- Zero VOC (100% Solids)
- Excellent Thermal Stability
- Elastomeric
- Low Temperature Flexibility
- Good Chemical Resistance
- Meets USDA Criteria
- Installed with or without Reinforcement in Transitional Areas

TYPICAL USES

- Industrial & Manufacturing Facilities
- Landfill Containment
- Manholes
- Marine Environments
- Mining Operations
- Food Processing Plants
- Fertilizer Plants
- Cold Storage Facilities
- Paper and Pulp Mills
- Parking Garage Decks
- PenStocks
- Power Plants
- Secondary Containment
- Structural Steel
- Walkways and Balconies
- Warehouse Floors

PACKAGING

10-Gallon Kit

5 gallons Side-A (Isocyanate side) and 5 gallons Side-B (Resin side)

100-Gallon Kit

50 gallons Side-A (Isocyanate side) and 50 gallons Side-B (Resin side)



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BASED ON DRAW DOWN FILM

Mix Ratio by Volume	1A: 1B
Pot Life @ 150-160°F (65.5-71°C), 50% R.H.	4 - 8 seconds
Tack Free Time	45 - 60 seconds
Recoat Time	0 - 6 hours
Viscosity at 150-160°F (66.5-71°C) Side-A Side-B	100 ± 20 cps 50 ± 20 cps
Density (Side A & B Combined)	8.81 lbs/gal
Flash Point	> 200°F (93.3°C)
Hardness, ASTM D-2240	50 ± 5 Shore D
Tensile Strength, ASTM D-412*	3000 ± 200 psi 20.68 ± 1.37 MPa
Elongation, ASTM D-412*	400 ± 50%
Tear Strength, ASTM D-412*	450 ± 50 pli 78.8 ± 8.8 kNm
Service Temperature - Dry	-40°F to 250°F -40°C to 121°C
Service Temperature - Wet	40°F to 120°F 4.44°C to 48.89°C
Water Vapor Permeance (Procedure BJ ASTM E96)	0.88 perm-inch
Volatile Organic Compounds (Side-A & B combined) ASTM D2369-81	0 lbs/gal 0 gm/liter
Minimum Applied Thickness	1mm
Return to Service: Foot Traffic	1- 4 hours



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Return to Service: Full Service	>24 hours
Taber Abrasion Resistance, ASTM D4060 (CS17 wheel, 1000 cycles, 1 kg load) (maximum)	6 mg loss
Hydrostatic Pressure Test, ASTM D5385-93106, Para 7.0	Pass Hold 100 psi
Crack Bridging, ASTM C1305 (10 cycles @ -15°F [-25.5°C], Rate 0.125 inch/hr, Ext. -0.125 inch)	Pass
Volume Resistivity, ASTM D257	6.0x10 ¹² ohm.cm
Water Absorption, ASTM D471 (maximum 74°F or 23°C, 24 hours)	<2%
Impact Resistance @ 77°F or 25°C (ASTM G14)	> 150 in. lbs
Pull-Off Strength (minimum), ASTM D4541, Inter- Coat Adhesion (within recoat time)	Excellent
Concrete (Shot Blasted and Primed), substrate failure occurred	>500 psi (3.4MPa)
Steel (90 µm blast profile)	>900 psi (6.2 MPa)
Lineal Shrinkage	1-2%
Flexibility (1/8" 3mm Mendrel Bend Test), ASTM D1737	Pass
Resistance to Weathering, ASTM G-23 (Type OUV Weatherometer-3000 hrs exposure)	No cracking or blistering. Color change, gloss reduction & chalking are noted.
Fire Test, ASTM E108 (Non Combustible Surface)	Pass Class A

*These physical properties from sample sprayed with Graco EXP2 @ 2000 psi minimum, with Fusion Gun AR4242 @ 150-160°F (65°C to 71°C) Different machine and parameter will change these properties. User should perform their own independent testing as properties are approximate.



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COLORS

Clear/Neutral. Custom colors are available upon request. Color Packs, when used, must be added to Side-B.

Due to its aromatic composition, Defender AR56 will tend to yellow or darken in color and will become flat after exposure to UV light. A topcoat can be applied to Defender AR56 within six hours of application with an aliphatic polyurethane/polyurea coating for a colorfast finish.

SURFACE PREPARATION

In general, coating performance and adhesion are directly proportional to surface preparation. Most failures in the performance of surface coatings can be attributed to poor surface preparation. Polyurea coatings rely on the structural strength of the substrate to which they are applied. All surfaces must be free of dust, dirt, oil, grease, rust, corrosion and other contaminants. When coating previously used substrates, it is important to consider the possibility of substrate absorption, which may affect the adhesion of the coating system, regardless of the surface preparation. UMI Coatings recognizes the potential for unique substrates from one project to another. For projects specific questions, contact UMI Coatings.

MIXING

Defender AR56 may NOT be diluted under any circumstances. Thoroughly mix Defender AR56 Side-B (Resin side) with air driven power equipment until a homogeneous mixture and color is achieved.

APPLICATION

Both Side-A and Side-B materials should be preconditioned to 75-80°F (24-27°C) before application. Recommended surface temperature must be at least 5°F (3°C) above the dew point. Defender AR56 should be applied using a plural component, heated, high pressure 1:1 spray mixing equipment like a plural component equipment machine may be used. Both Side-A and Side-B materials should be sprayed at a minimum of 2000 psi and at temperatures above 150°F (66°C). Adequate pressure and temperature should be maintained at all times. Defender AR56 should be sprayed in smooth, multidirectional passes to improve uniform thickness and appearance.

STORAGE

Defender AR56 has a shelf life of one (1) year from date of manufacture in original, factory-sealed containers when stored indoors at a temperature between 60-95°F (15-35°C). Side-A and Side-B drums are recommended to be stored above 60°F (15°C). Avoid freezing temperatures. Store drums on wooden pallets to avoid direct contact with the ground. If stored for a long period of time, rotate Side-A and Side-B drums regularly.



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LIMITATIONS

Do not open until ready to use. Both Side-A and Side-B containers must be fitted with a desiccant device during use.

Warning: This product contains Isocyanates and Curative Material.

DISCLAIMER

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the user's responsibility to satisfy themselves, by their own information and test, to determine suitability of the product for their own intended use, application and job situation and user assumes all risk and liability resulting from their use of the product. We do not suggest or guarantee that any hazard listed herein are the only ones which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and UMI Coatings makes no claim that these tests or any other tests, accurately represent all environments.