



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



DEFENDER

DEFENDER AR55

TECHNICAL DATA SHEET

DESCRIPTION

Defender AR55 is ANSI/NSF 61 approved for direct contact with potable water. It is fast setting, rapid curing, 100% solids, flexible, aromatic, two component, spray polyurea that can be applied to suitably prepared concrete and metal surfaces. Its extremely fast gel time makes it suitable for applications down to -20°F (-29.89°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 AR55 offers a tack free time of less than 45 seconds and exhibits 400% elongation upon curing with 50 Shore D hardness.

FEATURES

- ANSI/NSF 61 Approved for Potable Water
- Coat Pipe 9" In Diameter or Greater
- Coats Carbon or Mild Steel Metals without Primer
- Excellent Thermal Stability
- Good Chemical Resistance
- Installed With or Without Reinforcement in Transitional Areas
- Low Temperature Flexibility
- Meets USDA Criteria
- No Toxic Vapors
- Odorless
- Seamless
- Suitable for 5 Gallon (18.9 liters) Tank and Larger

TYPICAL USES

- Aquatic Life Habitats and Venues
- Canals, Dams & Basins
- Cold Storage Facilities
- Industrial and Manufacturing Facilities
- Lakes, Ponds and Water Containment
- Livestock Facilities and Dairy Farms
- Marine Exposure or Submersed Applications
- Offshore Rigs and Platforms
- Paper and Pulp Mills
- Potable Water Pipes
- Potable Water Tanks - Concrete or Metal
- Tank Coatings
- Waste Water Treatment Linings
- Water Parks & Playgrounds

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°F (65.5°C), 50% R.H.	4 - 6 seconds
Tack Free Time	30-45 seconds
Recoat Time	0 - 6 hours
Viscosity at 150-160°F (66.5-71°C) Side-A	100 ± 20 cps
Side-B	50 ± 20 cps
Density (Side A & B Combined)	8.80 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-624*	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
VOC Content	0%
Recommended Applied Thickness	>2mm
Return to Service Foot Traffic	1-4 hours
Full Service	>24 hours

(*These physical properties from sample sprayed with Graco Foam Cat 200 @ 2000 psi minimum, with Gusmer Gx7-400 mechanical purge gun @ 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 Resin side.

COVERAGE

Defender AR55 may be applied at any rate to achieve desired thickness. Theoretical coverage for 1 mil (0.254 microns) thickness is one gallon per 1600 sqft (3.78 liters per 149 sqm). Estimating Formula: $(1600 \text{ sqft per gal} / \text{Dry Mil Thickness}) \times \text{Solids Content} = \text{Application Rate per gallon}$.

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. The following information is for general reference. For project specific questions, contact UMI Coatings

MIXING

Defender AR55 may NOT be diluted under any circumstances. Thoroughly mix Defender AR55 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 AR55 should be applied using a plural component, heated, high pressure 1:1 spray mixing equipment like Graco's Reactor, Glass Craft or other equivalent 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 AR55 should be sprayed in smooth, multidirectional passes to improve uniform thickness and appearance.

STORAGE

Defender AR55 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.