THE SHERWIN-WILLIAMS COMPANY

ControlTech
Tank Linings, Containment & Corrosion Control Coatings

INDUSTRIAL & MARINE COATINGS

ENVIROLASTIC® AR200 HD

PART A **B81V3300** **ISOCYANATE**
PART B **B81-3300** **SERIES**

PRODUCT INFORMATION

Revsied 11/04

PRODUCT DESCRIPTION

ENVIROLASTIC AR200 HD is a 100% solids, spray-applied, aromatic polyurea coating and lining system, which exhibits extraordinary toughness and elastomeric performance characteristics. It can be applied at thicknesses of 30-250 mils or greater in multiple passes during a single application or as low as 10 mils for spatter texture applications.

- Fast cure - short down time
- No VOCs and low odor
- Seamless flexible and waterproof
- Impact, tear,and abrasion resistant
- Chemical resistant
- Bridges moving cracks to 1/8"
- Retains physical properties at -20°F to 250°F
- Acceptable for use in USDA inspected facilities

RECOMMENDED USES

Designed for use in immersion and atmospheric exposure as a tough, hard, abrasion resistant waterproof coating and lining system. Ideally suited for use in areas including:

- Water & wastewater linings
- Tank linings
- Loading docks
- Cold storage areas
- Mechanical rooms
- Marine bridge and deck
- Offshore platforms
- Pipeline coating and lining
- Basins and reservoirs
- Deck coatings
- Theme parks
- Secondary containment
- Marine bilge and tanks
- Fuel storage & containment

Also used as a spatter coat for textured topcoats on pedestrian walking surfaces.

PRODUCT CHARACTERISTICS

Finish:	Semi-Gloss
Color:	White, Light Gray, Medium Gray, Dark Gray, Black, Beige, Tile Red Silver Metallic, Caribbean Green
Volume Solids:	100%
VOC (calculated):	0
Mix Ratio:	1:1
Recommended Spreading Rate per application:	
Wet mils:	20.0 - 250.0
Dry mils:	20.0 - 250.0
Coverage:	6 - 80 sq ft/gal approximate
Drying Schedule @ 30.0 mils wet @ 73°F and 50% RH:	
To touch:	12 seconds
To recoat:	
minimum:	12 seconds
maximum:	16 hours
Gel time:	6 seconds
Tack free:	12 seconds
Light traffic:	1 hour
Vehicular traffic	2 hours
To cure:	24 hours

If maximum recoat time is exceeded, abrade surface and solvent wipe before recoating. Drying time is temperature, humidity, and film thickness dependent.

Pot Life:	None
Sweat-in Time:	None
Viscosity (mixed):	550 cps
Flash Point:	200°F
Shelf Life:	12 months, unopened Store indoors at 70°F to 90°F.
Reducer:	Not recommended
Clean Up:	Butyl Cellusolve™ (R6K25) or Dowanol PM™

PERFORMANCE CHARACTERISTICS

Abrasion Resistance
Method: ASTM D4060
Result: 1000 g 1000 cycles CS-17: 4 mg loss

Adhesion
Method: ASTM D4541
Result: Concrete - 350 psi; Steel - 1,750 psi

Coefficient of Linear Thermal Expansion
Method: ASTM C531 (in/in/°F)
Result: 4×10^{-5}

Crack Bridging (@ -26°C (-15°F) @ 1/8")
Method: ASTM C836
Result: Pass

Durometer Hardness
Method: ASTM D2240
Result: Shore D-55

Gardner Impact
Method: ASTM D2794 (1/32" steel panels)
Result: >160 in-lbs, direct and indirect

Mandrel Bend
Method: ASTM D522 Conical Bend (1/32" steel panel)
Result: Pass

QUV Weatherometer
Method: ASTM G53, 3,000 hrs, UVB 313 bulb
Result: Property Retention >90%

Salt Spray Corrosion
Method: ASTM B117, 3000 hrs
Result: Blisters - None
Corrosion from scribe - 5.0 mm
Elcometer Adhesion - 1,900 psi

Tear Strength
Method: ASTM D624
Result: 480 pli

Tensile Elongation
Method: ASTM D638
Result: 200%

Tensile Modulus
Method: ASTM D638
Result: 100% Modulus - 1,280 psi
300% Modulus - 1,965 psi

Tensile Strength
Method: ASTM D638
Result: 3,000 psi

Water Vapor Transmission
Method: ASTM E96
Result: 0.02 perm

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RECOMMENDED SYSTEMS

Steel (lining):
1 ct. EnviroLastic AR200 HD @ 60.0 - 80.0 mils dft*

Steel, with hold primer (lining):
1 ct. Copoxy Shop Primer @ 1.0 -1.5 mils dft
1 ct. EnviroLastic AR200 HD @ 60.0 - 80.0 mils dft*

Concrete (linings):
1 ct. Corobond HS Epoxy Primer @ 3.0 - 4.0 mils dft
1 ct. EnviroLastic AR200 HD @ 60.0 - 80.0 mils dft*

Concrete (containment and flooring):
1 ct. Corobond HS Epoxy Primer @ 3.0 - 4.0 mils dft
1 ct. EnviroLastic AR200 HD @ 40.0 - 60.0 mils dft
1-2 cts Sher-Tuff Urethane @ 3.0 - 5.0 mils dft/ct
Note: When topcoating with Sher-Tuff Urethane or Cor-Cote HCR FF, allow AR200 HD to cure for one hour.

Concrete (mechanical equipment room):
1 ct. Corobond HS Epoxy Primer @ 3.0 - 4.0 mils dft
1 ct. EnviroLastic AR425 @ 30.0 - 40.0 mils dft
1 cts. EnviroLastic AR200 HD (texture) @ 10.0 - 20.0 mils dft

Concrete (pedestrian deck coating):
1 ct. Corobond HS Epoxy Primer @ 3.0 - 4.0 mils drt
1 ct. EnviroLastic AR520 SS @ 30.0 - 40.0 mils dft
1 ct. Broadcast Aggregate 40 - 60 mesh sand @ 0.2 lbs per sq ft
1 ct. EnviroLastic AR200 HD @ 10.0 - 20.0 mils dft

Concrete (vehicular deck coating):
1 ct. Corobond HS Epoxy Primer @ 3.0 - 4.0 mils dft
1 ct. EnviroLastic AR520 SS @ 40.0 - 50.0 mils dft
1 ct. Broadcast Aggregate 40 - 60 mesh sand @ 0.2 lbs per sq ft
1 ct. EnviroLastic AR200 HD @ 10.0 - 20.0 mils dft

Concrete, low temperature or fast set:
1 ct. Corobond LT Epoxy Primer@ 4.0 - 8.0 mils dft
1 ct. EnviroLastic AR200 HD @ 30.0 - 40.0 mils dft*

*When used as a lining in immersion service, a minimum total dry film thickness of 60.0 mils is required.

The systems listed above are representative of the product's use. Other systems may be appropriate.

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:
Steel:
Atmospheric: SSPC-SP10/NACE 2, 2 mil profile
Immersion: SSPC-SP10/NACE 2, 3 mil profile
Concrete & Masonry:
Sandblast or shotblast to remove all laitance and achieve a profile equal to 80-100 grit sandpaper. Refer to SSPC-SP13/NACE 6 or ICRI Guide 03732.

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature:
Material: 150°F minimum, 170°F maximum
Air and surface: -20°F minimum, 120°F maximum
At least 5°F above dew point

Relative humidity: 80% maximum

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

Packaging:
Part A: 53 gallon drums
Part B: 53 gallon drums

SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

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APPLICATION BULLETIN

Revsied 11/04

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel (immersion service)

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (3 mils). Remove all weld spatter and round all sharp edges by grinding to a minimum 1/4" radius. Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Iron & Steel (atmospheric service)

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils).Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Poured Concrete

New

For surface preparation, refer to SSPC-SP13/NACE 6. Surface must be clean, dry, sound, and offer sufficient profile to achieve adequate adhesion. Minimum substrate cure is 28 days at 73°F. Remove all form release agents, curing compounds, salts, efflorescence, laitance, and other foreign matter by sandblasting, shotblasting, mechanical scarification, or suitable chemical means. Refer to ASTM D4260. Rinse thoroughly to achieve a final pH between 10.0 and 13.0. Allow to dry thoroughly prior to coating.

Old

Surface preparation is done in much the same manner as new concrete; however, if the concrete is contaminated with oils, grease, chemicals, etc., they must be removed by cleaning with a strong detergent. Refer to ASTM D4258. Form release agents, hardeners, etc. must be removed by sandblasting, shotblasting, mechanical scarification, or suitable chemical means. If surface deterioration presents an unacceptably rough surface, Steel-Seam VSE epoxy filler is recommended to patch and resurface damaged concrete.

Fill all cracks, voids and bugholes with Steel-Seam VSE.

Always follow the ASTM methods listed below:

ASTM D4258 Standard Practice for Cleaning Concrete.
ASTM D4259 Standard Practice for Abrading Concrete.
ASTM D4260 Standard Practice for Etching Concrete.
ASTM F 1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete

Immersion Service:

In addition to the above surface preparation, Brush Blasting of the concrete surface is required.

APPLICATION CONDITIONS

Temperature:	
Material:	150°F minimum, 170°F maximum
Air and surface:	-20°F minimum, 120°F maximum
	At least 5°F above dew point
Relative humidity:	80% maximum

APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

Reducer ..... Not recommended

Clean-up ..... Butyl Cellusolve™ (R6K25) or Dowanol PM™

Plural Component Heated Spray Equipment:

Equipment ..... Gusmer H-20/35
Gun ..... GX7 DI,GX7-400, or GX-8
Fluid Pressure ..... 2,200 psi
Air Pressure ..... 100 psi
Inlet Strainer Screen .... 30 mesh
Gun Screen ..... 80 mesh

If specific application equipment is listed above, equivalent equipment may be substituted.

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APPLICATION BULLETIN

APPLICATION PROCEDURES

Surface preparation must be completed as indicated. Route and seal all cracks greater than 1/16" with EnviroLastic JS80 SL.

Mixing Instructions:
Agitate resin blend (B) component thoroughly with a drum mixer before use to disperse pigment and assure homogeneity. Do not thin. Do not mix "A" and "B" resins together. **Caution: Do not agitate in air and moisture.**

Apply coating/lining at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per application:

Wet mils:	20.0 - 250.0
Dry mils:	20.0 - 250.0
Coverage:	6 - 80 sq ft/gal approximate

Drying Schedule @ 30.0 mils wet @ 73°F and 50% RH:

To touch:	12 seconds
To recoat:	
minimum:	12 seconds
maximum:	16 hours
Gel time:	6 seconds
Tack free:	12 seconds
Light traffic:	1 hour
Vehicular traffic	2 hours
To cure:	24 hours

If maximum recoat time is exceeded, abrade surface and solvent wipe before recoating. Drying time is temperature, humidity, and film thickness dependent.

Pot Life: None

Sweat-in Time: None

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

PERFORMANCE TIPS

For concrete, always perform Calcium Chloride test as per ASTM F1869. Do not proceed with MVE >3 lbs.

Where primers are used, do not fill the profile on concrete or steel with excess primer. Allow epoxy primers to cure tack free prior to application of EnviroLastic polyurea.

For immersion applications, a minimum total dry film thickness of 60 mils is required. Always apply lining material in at least two applications. Spark test in accordance with ASTM D5162 for steel or ASTM D4787 for concrete after application of the first coat. Repair holidays found prior to application of second coat

For steel, stripe coat all chine, welds, bolted connections, and sharp angles to prevent early failure in these areas. For concrete, all cracks must receive a 6" wide by 30 mil dft detail coat.

Use only heated, plural component equipment capable of producting 2,500 psi at 160°F and 2 gallon/minute output consistently.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Butyl Cellusolve™ (R6K25), Dowanol PM™, or Propylene Glycol.

While spraying, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle.

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

Do not agitate in air and moisture.

Consult your Sherwin-Williams representative for specific application and performance recommendations.

Refer to Product Information sheet for additional performance characteristics and properties.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Butyl Cellusolve™ (R6K25) or Dowanol PM™. Clean tools and equipment immediately after use (including both "A" and"B" sides of plural component spray system) with Butyl Cellusolve™ (R6K25), or Dowanol PM™.

SAFETY PRECAUTIONS

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