ControlTech
Tank Linings, Containment & Corrosion Control Coatings

Certified to NSF/ANSI 61

EXPRESSTECH™
Coatings Technology for Improved Productivity.

ENVIROLASTIC® AR520 PW

PART A B81V3800
PART B B81-3800

ISOCYANATE SERIES

PRODUCT INFORMATION

Revsied 5/05

PRODUCT DESCRIPTION

ENVIROLASTIC AR520 PW is a 100% solids, spray-applied, aromatic polyurea lining system for potable water, which has extraordinary toughness and flexibility. It can be applied at thicknesses of 40.0-100.0 mils or greater in multiple passes during a single application and returned to service in four hours or less.

- Fast cure, short downtime
- No VOCs and low odor
- Seamless flexible and waterproof
- Bridges moving cracks to 1/8"
- Retains physical properties at -20°F to 250°F

- NSF approved to Standard 61 for tanks of 2,000 gallons minimum

RECOMMENDED USES

Designed for use in immersion exposure as a seamless waterproof liner for large diameter pipe and tanks conveying potable water, fresh and salt water. Ideally suited for use in facilities used for the handling, transport and storage of potable water to include:

- Elevated steel water tanks
- Concrete water tanks
- Concrete reservoirs and pipe for potable water
- Brine tanks
- Aquariums, ponds, and fish hatcheries
- Acceptable for use in USDA inspected facilities
- Conforms to AWWA D102-03 ICS #4

Not recommended for use with cathodic protection systems.

PRODUCT CHARACTERISTICS

Finish:	Semi-Gloss
Color:	Beige, Black, Light Blue, Light Green, Red
Volume Solids:	100%
VOC (calculated):	0
Mix Ratio:	1:1

Recommended Spreading Rate per application:

Wet mils:	40.0 - 100.0
Dry mils:	40.0 - 100.0*
Coverage:	16-40 sq ft/gal approximate

*60.0 mils dft minimum for immersion service over concrete

Drying Schedule @ 40.0 mils wet @ 73°F and 50% RH:

To touch:	3 minutes
To recoat:	
minimum:	3 minutes
maximum:	16 hours
Gel time:	45 seconds
Tack free:	3 minutes
Immersion (water):	12 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 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: 9 mg loss
1000 g 1000 cycles H-18: 150 mg loss

Adhesion
Method: ASTM D4541
Result: Concrete - 350 psi; Steel - 1,750 psi, Wood 250 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-50; A-95

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

Tear Strength
Method: ASTM D624
Result: 400 pli

Tensile Elongation
Method: ASTM D638
Result: 520%

Tensile Modulus
Method: ASTM D638
Result: 100% Modulus - 1,000 psi
300% Modulus - 1,600 psi

Tensile Strength
Method: ASTM D638
Result: 2,500 psi

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RECOMMENDED SYSTEMS

Steel, NSF (lining):
1 ct. EnviroLastic AR520 PW @ 40.0 - 100.0 mils dft

Steel, with hold primer, NSF Full System (lining):
1 ct. Copoxy Shop Primer @ 1.0 -1.5 mils dft**
1 ct. EnviroLastic AR520 PW @ 40.00-100.0 mils dft

Concrete, NSF (lining):
1 ct. Copoxy Shop Primer @3.0-5.0 mils dift **
1 ct. EnviroLastic AR520 PW @ 60.0-100.0 mils dft

Concrete (lining):
1 ct. Corobond HS Epoxy Primer @ 3.0 - 4.0 mils dft**
1 ct. EnviroLastic AR520 PW @ 60.0 -100.0 mils dft/ct

Concrete, low temperature or fast set (lining):
1 ct. Corobond LT Epoxy Primer @ 3.0 - 4.0 mils dft**
1 ct. EnviroLastic AR520 PW @ 60.0 -100.0 mils dft/ct

**Refer to Performance Tips section

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:	SSPC-SP13/NACE 6 or ICRI 03732, CSP 3-5.

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.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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ISOCYANATE SERIES

APPLICATION BULLETIN

Revsied 5/05

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/NACE 2. 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. 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/NACE 2. 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, or ICRI 03732, CSP 3-5. 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 8.0 and 11.0. 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 standard 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 F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete.
ICRI 03732 Concrete Surface Preparation

Immersion Service:

In addition to the above surface preparation, abrasive 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 not listed above, equivalent equipment may be substituted.

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ISOCYANATE SERIES

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

Recommended Spreading Rate per application:

Wet mils:	40.0 - 100.0
Dry mils:	40.0 - 100.0*
Coverage:	16 - 40 sq ft/gal approximate

*60.0 mils dft minimum for immersion service over concrete

Drying Schedule @ 40.0 mils wet @ 73°F and 50% RH:

To touch:	3 minutes
To recoat:	
minimum:	3 minutes
maximum:	16 hours
Gel time:	45 seconds
Tack free:	3 minutes
Immersion (water):	12 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 lining 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. Topcoat epoxy primers immediately after they become take free. "Tack free" is defined as slight to medium pressure with a gloved hand, placed on a primed surface, that when lifted shows a slight imprint or distortion to the surface, with no transfer of primer to the glove.

For Immersion Service: Spark test in accordance with ASTM D5162 for steel, or ASTM D4787 for concrete. Repair holidays found in accordance with these ASTM methods.

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) or Dowanol PM™.

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™.

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