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AquataFlex® 506

Technical Data Sheet



Selection & Specification Data

Description

AquataFlex® 506 is a 1A:1B by volume, “Bio-based”, 100% solids, zero V.O.C., Patented “Tri-Hybrid novolac epoxy/polyurethane” coating designed for use in applications that require the increased chemical resistance of an epoxy and the speed of cure that a polyurethane provides. AquataFlex 506 is surface tolerant and is hydrophobic to provide excellent waterproofing properties and adhesion. AquataFlex 506 adheres well to properly prepared concrete, steel, aluminum, wood, composites and many other substrates. Contact Technical Services for Chemical Resistance information.

Typical Uses

- Concrete or Steel Water/Waste Water Lining
- USDA BioPreferred® certified bio based product
- Primary and Secondary Containment
- NSF /ANSI Standard 61 Potable Water Tanks, Reservoirs, Basins and Pipes
- Meets AWWA 222
- U.S.D.A. - FSIS Acceptable

Color & Stability (Limitations)

The standard colors: Relaxed Khaki and Graphite Gray.

This product is an aromatic polyurethane and is not UV-stable for color or gloss retention. Discolorations and yellowing can and will occur upon exposure to UV (exterior applications). Discoloration or down-glossing does not affect performance. If you require a UV color stable product, please contact your sales representative. AquataFlex 506 should not be used for direct contact with extremely high or low pH levels.

Theoretical Coverage Rate

Theoretical coverage is 1604 square feet per gallon at 1 mil DFT. Actual surface coverage will depend on substrate porosity and roughness.

Dry Film Thickness

Recommended thickness will vary from 40-300+ mils per coat based on service conditions.

Recommended Dry Film Thickness (Typical)	
Concrete, New/Smooth:	80-300+ mils DFT.
Concrete, Rough:	100-300+ mils DFT.
Concrete, Resurfaced:	80-300+ mils DFT.
Masonry/Brick:	125-300+ mils DFT.
Masonry/Brick, Resurfaced:	80-300+ mils DFT.
Steel (Carbon):	40-60 mils DFT.

Physical Properties (Typical) (Post cured at 225°F for 24 hours)

Description	Method	Result
Tensile Strength	ASTM D412/638	2,110 psi
Elongation	ASTM D412/638	>70%
NSF/ANSI 61 Potable Water Certification	ANSI 61.5	Certified for Tanks & Pipe
Pickle Jar	Greenbook section 211-2 (Internal)	Pass
Adhesion to Steel	ASTM D4541	>1,500 psi
Taber Abrasion, CS-17 wheel 1KG, 1000 Revs	ASTM D4060	44 mg loss
Die “C” Tear	ASTM D624	158 pli
Water Absorption	ASTM 570	0.17 %
Shrinkage	Internal Test	0.4 %
Hardness, Shore A	ASTM D2240	95
Hardness, Shore D	ASTM 2240	50
Viscosity A-Side (75°F)	Brookfield	500 - 800
Viscosity B-Side (75°F)	Brookfield	1700 - 2200
Moisture Vapor Transmission	ASTM D1653	25 Grams/m ²

The value ranges stated in this Technical Data Sheet are based on system processing under controlled laboratory conditions. Equipment configuration and/or field application conditions may produce variances in the final system values.



Substrate and Surface Preparation

General

Prior to coating, the substrate must be prepared in a manner that provides a uniform, clean, sound, neutralized surface suitable for the specified coating. The substrate must be free of all surface contaminants, such as soluble salts, oil, grease, rust, scale or deposits. In general, coating performance is proportional to the degree of surface preparation.

Steel (Immersion Service)

Clean the surface prior to surface preparation in accordance with "Solvent Cleaning" (SSPC SP- 1) to remove oil, grease, and other soluble contaminants. Surfaces to be coated should then be prepared according to SSPC SP-10/NACE No. 2 Near-White Metal Blast Cleaning for immersion service. The resulting angular anchor profile shall be 3.0-5.0 mils and be relative to the coating thickness specified.

Steel (Atmospheric/Non-Immersion Service)

Visible deposits of oil, grease, or other contaminants shall be removed according to SSPC-SP 1 followed by SSPC SP-6/NACE No. 3 Commercial Blast Cleaning, resulting in a sharp angular anchor profile of 2.5-4.0 mils.

Ductile Iron Pipe (Atmospheric and Immersion Service)

All oils, small deposits of asphalt paint and grease shall be removed by solvent cleaning (see NAPF 500-03-01). Abrasive blast to accordance with NAPF 500-03-04. More information on cleaning ductile iron pipe can be found at www.napf.com

Concrete & Masonry

Reference SSPC SP-13/NACE No. 6 Surface Preparation of Concrete. Surfaces must be sound and contaminant-free with a surface profile equivalent to a minimum CSP3 to CSP5 in accordance with ICRI Technical Guideline No. 310.2R-2013. This can generally be achieved by abrasive blasting, shot blasting, high-pressure water cleaning, water jetting, or a combination of methods. The pH of the concrete must be >7.

Primers (Suggested)	
Concrete:	Raven 175 Raven 171FS VF20
Carbon Steel (blast holding):	AquataPoxy 190* Raven 490*
Non-Ferrous Metals:	AquataPoxy 190

PVC, PE, PP, PS, & HDPE- Contact Raven Tech Service

*Do not use this primer if immersion temperatures will exceed 140°F

Mixing, Thinning, Pre-Warming

Mixing:

B Side component must be thoroughly agitated prior to use. Mix using a manufactures recommended 3-tier, collapsible blade power mixer through the center bung hole. Mixer diameter should be ½ diameter of the container. Mix for at least 30 minutes prior to processing. Color should be a consistent uniform color without striations.

.Components & Mix Ratio:

Mix ratio is 1:1 by volume

Thinning:

DO NOT THIN.

Pre-warming:

A and B components should be warmed to a minimum of 70°F prior to processing.



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Application & Equipment Guidelines

AquataFlex 506 has been specifically developed for use with high pressure plural component spraying equipment capable of maintain 2,500 psi and 160°F temperatures at all times. Heated hose is required. It is recommended to recirculate for 15-30 mins prior to application. If recirculation is not available, Iso drum (Part A) should be warmed using heated drum blankets to a temperature of 85°F prior to spraying. Contact VersaFlex for details on material delivery systems and options.

Processing Properties	Units	Results
Gel Time	Seconds	5 - 10
Tack Free Time	Seconds	15 - 20
Recoat Time (minimum)	@ 72°F	Immediate
Recoat Time (maxim w/o prep.)	@ 72°F	8 hours

Recommended Settings

Static Pressure	2200 psi
Dynamic Pressure (spraying)	1,800 psi
Heat Settings	160°F - 170°F
Hose Heat Settings	160°F - 170°F
Spray	Gun
Fusion Air Purge Chamber	AR 4242
Fusion Mechanical Purge	Many
Probler P2	01 Round

Additional equipment manufacturers and set-ups are acceptable. Contact VersaFlex/Raven Technical Services for additional information and recommendations.

Application & Service Conditions

Environmental & Substrate Conditions

Material and equipment temperatures must be kept at 70°F or above. Lower substrate and ambient temperatures will reduce cure time.

Substrate temperatures during application must be greater than 40°F and up to 140°F. The substrate must be 5°F above dew point and rising before application of coating materials.

Service Temperatures

Dry Continuous	-20°F—200°F
Maximum Surge	350°F
Immersion-Max	140°F
Relative Humidity	90% Maximum

Curing Schedule, Re-Coat Windows, and Top Coats

Cure Time

Full cure is achieved in 14 days at 72°F.

Top Coating

AquataFlex 506 can be top-coated immediately. Consult Raven Technical Services for more information and product recommendations for UV stable or chemical resistant topcoats. Prior to coating, the surface shall be clean, dry, and free of all dirt, dust, debris, and other contamination. Use VF TackCoat or Raven 161 as adhesion promoters if the recoat window has been exceeded.

NSF/ANSI 61 PROCEDURES/REQUIREMENTS

Certified to NSF/ANSI 61 for potable water tanks and pipes. Minimum of 24 hours cure prior to use. AWWA C652 disinfection rinse required before use.

Tank Size	>= 300 gallons
Pipe Diameter	>= 4 inches
Total DFT	300 mils
Cure to Service	24 Hours @ 72°F



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Equipment Clean Up and Safety	
<p>Clean Up</p> <p>If storage of the spray equipment is desired, it is recommended that the applicator completely purge out of the machine, hoses, and drum pumps. The A Side (isocyanate) will react with moisture or humidity and set up in the filters, hoses, pump balls, and drum pumps as early as 12 hours if left unattended. Therefore, it is recommended to flush the equipment with a minimum of 2 gallon of MEK for each side and then run several gallons of Raven 950 thru the equipment. Raven 950 should be left in the machine when not in use.</p>	<p>Safety</p> <p>SDS's are available on the website, (www.ravenlining.com) or upon request. Consult the Safety Data Sheet for this product concerning health and safety information before using. Strictly follow all notices on the Safety Data Sheet and container label. If you do not fully understand the notices and procedures provided on the SDS or if you cannot strictly comply with them, do not use this product. Actual safety measures are dependent on application methods and work environment. Keep uncured product away from children at all times.</p>
Packaging, Shelf Life, Storage and Disposal	
<p>Available Packaging</p> <p>AquataFlex 506 is available in 10, 60 and 110-gallon kits. The containers are filled by weight.</p> <p>Shelf Life and Storage</p> <p>The product can be stored for six months in factory delivered, unopened drums. Keep away from extreme heat, freezing, and moisture. Proper storage temperature is between 60°F and 95°F. Ideal material storage temperature is between 60°F and 80°F.</p>	<p>Disposal</p> <p>Cured product may be disposed of without restriction. The un-cured isocyanate and resin portions should be mixed together and disposed of in a normal manner. "Drip free" containers should be disposed of according to state, local, and federal laws.</p>
Warranty	
<p>Limited Warranty. Company warrants its goods to be free of manufacturing defects. Goods manufactured by Company will comply with all applicable federal, state and local laws and regulations. Company makes no warranty as to any parts or equipment manufactured by others. Customer shall look solely and only to the manufacturer of such parts or equipment with respect to any warranty claims. Company hereby assigns to Customer the original manufacturer's warranties to all such equipment and parts, to the full extent permitted. THE AFORESAID IS THE EXCLUSIVE WARRANTY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. SPECIFICALLY, THERE ARE NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.</p> <p>Limitation of Liability. COMPANY'S LIABILITY FOR DEFECTIVE OR NON-CONFORMING GOODS SHALL BE LIMITED TO, AND SHALL IN NO EVENT EXCEED, THE AMOUNT PAID BY CUSTOMER FOR SUCH DEFECTIVE OR NON-CONFORMING GOODS. UNDER NO CIRCUMSTANCES SHALL COMPANY BE LIABLE FOR ANY SPECIAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR FOR LOST PROFITS. In no event may any claim by Customer arising from or relating to any sale of any goods or services referenced herein be brought more than one year after the date of delivery of such Goods.</p>	