



### Selection & Specification Data

#### Description

**VersaRoof EL™** is a 100% solid, fast setting, plural component, polyurea elastomer and high performance coating. **VersaRoof EL™** is primarily designed for foam, geotextile and other non-reinforced substrates due to its specially designed low shrink formulation, but will bond tenaciously to steel, concrete, masonry and other properly prepared substrates. **VersaRoof EL™** is a high performance, monolithic liquid applied roofing membrane. **VersaRoof EL™** can be applied horizontally, vertically, and overhead, making it ideal for applications with a variety of substrates, and complex geometries.

#### IDEAL FOR:

- Roofs
- Plaza and Podium Decks
- IRMA and Green Roofs
- Balconies
- Platers and Retention Tanks
- Re-Roof and Un-Reinforced Substrates

#### ADVANTAGES:

- Made in the USA at a ISO 9001:2008 Certified Facility
- 100% solid, no VOC's
- Tough, resilient, elastomeric membrane
- Fast return to service
- Extremely low curing stress shrinkage
- Dry exposure range of -20F to 250F
- Installation range of -20F to 200F
- Tenacious adhesion to concrete, masonry, and metal
- USGBC LEED, EQ Credit 4
- Will not hydrolyze or leech

#### Color Selection

**VersaRoof EL™** is an aromatic polyurea which will discolor from exposure to UV light without affecting the performance characteristics. Darker colors and earth tones may hide the color change better.

**VersaRoof EL™** standard colors are Tan (VF1222), Light Grey (VF1221), and Dark Grey (VF1220) but can be made in a variety of colors on the **ColorFlex Standard Colors Chart**. Non-standard color selections may require additional lead time.

#### Physical Properties (Typical)

Description	Method	Result
VOC (g/l)	Theoretical	0
Solid Content	Theoretical	100%
Gel Time	ASTM D1640	< 20 sec.
Tack Free Time	ASTM D1640	< 45 sec.
Light Traffic	ASTM D1640	< 120 min.
Tensile Strength	ASTM D638	> 3,000 psi
Elongation	ASTM D638	> 400%
Die C Tear Strength	ASTM D624	> 300 pli
100% Modulus	ASTM D638	> 900 psi
200% Modulus	ASTM D638	> 1,300 psi
300% Modulus	ASTM D638	> 1,800 psi
Shore A Hardness	ASTM D2240	> 85
Shore D Hardness	ASTM D2240	> 35
Adhesion to Steel <sup>1</sup>	ASTM D4541	> 500 psi
Adhesion to Concrete <sup>2</sup>	ASTM D7234	> 200 psi <sup>3</sup>

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.

#### Footnotes

1. Steel prepared in accordance with SSPC-SP 6/NACE N° 3. 2+ mil profile
2. Concrete prepared in accordance with SSPC-SP 13/NACE N° 6
3. Failure occurs in the substrate

#### Coverage Rate

**VersaRoof EL™** is designed for a variety of substrates and applications. Application method, substrate roughness, profile, and porosity will effect coverage rates. Always consult the specification and contract documents prior to installation.

Geotextile & Foam, normal exposure: 26-20 ft<sup>2</sup> per gallon  
 Concrete & Masonry, normal exposure: 26-20 ft<sup>2</sup> per gallon  
 Steel, normal exposure: 26-20 ft<sup>2</sup> per gallon

Contact VersaFlex Technical Service for more detailed coverage recommendations.



### 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 shall be free of all contaminants, such as oil, grease, rust, scale or deposits. The substrate shall be free of all dirt, dust, debris, and deleterious material. Coating performance is dependent on the degree of surface preparation.

#### Geotextile

Ensure geotextile is clean, dry, and free of dirt, dust, debris, or deleterious material. Only apply to "ironed" side of geotextile. Non-woven, or spun-woven geotextiles are recommended.

#### Concrete & Masonry

Reference SSPC-SP 13/NACE No. 6 Surface Preparation of Concrete. Minimum surface profile equivalent to ICRI CSP3 to CSP5 in accordance with ICRI Technical Guideline No. 03732.

#### *Maximum Moisture Content Concrete:*

Calcium Chloride Test – 3 lb/24 hr./1,000 ft<sup>2</sup>

5% maximum as per ASTM F2160 or ASTM F2420

#### Cement Cover Board

Ensure substrate is clean, sound, dry, and free of any dirt, dust, debris, contamination or deleterious material.

#### Wood and Lumber

Ensure substrate is clean, sound, dry, and free of any dirt, dust, debris, contamination or deleterious material. Particular care should be taken when coating over treated wood products. Only install over kiln dried, or air dried wood.

#### Polyurethane Foam and Extruded Foam Board

Remove any oxidation. Ensure substrate is clean, sound, dry, and free of any dirt, dust, debris, contamination or deleterious material.

#### Steel (Atmospheric/Non-Immersion Service)

Visible deposits of oil, grease, or other contaminants shall be removed according to SSPC-SP 1. Prepare in accordance with SSPC-SP6/NACE No. 3 Commercial Blast Cleaning. Provide a sharp angular anchor profile of 3.0 or greater.

#### Non-Ferrous Metals

Reference SSPC SP-16 Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals. Only use non-metallic blast media. Contact VersaFlex Technical Services for primer recommendation and additional information.

#### Fiberglass, Rigid PVC, and Modified Bitumen/Built-Up Roofing

Use a low-pressure washer to remove dirt, biologic growth, loose granules and other contaminants. Apply a de-greaser and wash clean. Clean contamination with a silicone and wax remover such as DuPont Prep-Sol™ 3919S. Sand with 40-grit paper or abrade to a dull finish. Wipe with Acetone or MEK. Consult VersaFlex Technical Service for primer recommendation. Ensure substrate is dry prior to proceeding.

#### VersaProof Membranes and other Elastomers

Ensure substrate is clean, sound, dry, and free of any dirt, dust, debris, contamination or deleterious material. Sand with 40-grit paper or abrade to a dull finish. Wipe with Acetone or MEK.

*Adhesion may vary based on the age, level of oxidation, and type of system. VersaRoof may not adhere to all existing roofing systems. Adhesion testing may be required to determine the optimal surface preparation method. Consult VersaFlex Technical Service for additional recommendations prior to beginning application.*

Contact VersaFlex Technical Services for more information



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### Recommended Primer

<b>Concrete &amp; Masonry</b>	VersaProof™ Primer S VersaProof™ Primer F VersaProof™ Primer E
<b>Cement Board</b>	VersaProof™ Primer S VersaProof™ Primer F VersaProof™ Primer E
<b>Wood &amp; Lumber</b>	VersaProof™ Primer E
<b>Foams</b>	VersaProof™ Primer S VersaProof™ Primer E

<b>Ferrous Metal (Optional)</b>	VersaProof™ Primer S
<b>Non-Ferrous Metal</b>	VersaProof™ Primer S
<b>Fiberglass, Rigid PVC, and Modified Bitumen/</b>	VersaProof™ Primer S
<b>VersaProof Membrane</b>	VersaProof™ Primer RC

Substrate composition and moisture, application temperature, exposure temperature, and site conditions may effect primer selection.

VersaFlex is part of a family of companies. Specific primers may be available for different substrates or service conditions. Contact VersaFlex Technical Service for more information and recommendations.

### Mixing, Thinning, Pre-Warming

#### Components & Mix Ratio:

Mix ratio is 1:1 by volume

#### Mixing:

B Side must be mixed prior to use. Mix using a 3-tier, collapsible blade power mixer for at least 30 minutes prior to processing. Mixer diameter should be 1/3 diameter of the vessel.

#### Thinning:

DO NOT THIN.

#### Pre-warming:

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

### Application and Equipment Guidelines

#### General

VersaRoof EL™ must be installed using plural component, direct impingement mix application equipment.

Material supply capacity should be 4x the material output of the selected spray gun configuration. Processing equipment should be capable of maintaining set temperatures and pressures at rest and during operation. Proper equipment selection and maintenance is critical to achieve material properties.

#### Recommend Equipment Operating Parameters

A Side Primary Heat	160°F
B Side Primary Heat	160°F
Hose Heat	160°F
Dynamic Pressure	2,000—2500 psi
Dynamic Pressure Differential	< 200 psi
Inlet Pressure	> 90 psi



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### Application and Equipment Guidelines

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

Apply in a uniform manner to desired thickness. Lift thickness is determined by spray gun configuration and speed of application. Lower output configurations are recommended for vertical and overhead applications to avoid runs, drips and sags. Excessive thickness does not negatively impact the material properties.

Address cracks, joints, terminations, and transitions first. Consult contract documents and installation guidelines for available details.

#### Recommended Proportioners

Graco	Reactor E-XP2
	Reactor H-XP2

#### Recommended Spray Gun Configuration

Graco	Fusion AP	AR/AF 2929
		AR/AF 3737
		AR/AF 4242
	Fusion MP	MR/MF 3535
		MR/MF 4747
	Probler P2	00 - 02

### Application & Service Conditions

#### Environmental & Substrate Conditions

Substrate temperatures must be greater than -20°F. Lower substrate and ambient temperatures will reduce ultimate cure time.

Do not install over damp, wet, or saturated substrates.

Concrete and masonry substrate moisture shall be less than 5% when measured with a Tramex CME meter. If the substrate is below freezing, traditional methods of determining moisture content are not effective. Additional steps should be taken to validate moisture readings.

Force drying the substrate with artificial methods may result in inaccurate moisture readings.

The substrate must be 5°F above dew point and rising before application of coating materials.

#### Service Temperatures (Temperature Resistance):

Dry temperature resistance is -40°F to 250°F.

#### Limitations:

**VersaRoof EL™** is not recommended for direct contact with extremely high or low pH chemicals.

Refer to the VersaFlex Chemical Resistance Technical Bulletin or contact Technical Services for more information and recommendations. Chemical concentration and temperature will effect aggressiveness of exposure.

**VersaRoof EL™** is an aromatic based polyurea. Discoloration from exposure to ultraviolet light may occur without affecting the performance characteristics.



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Curing Schedule, Re-Coat Windows, and Top Coats	
<p><b>Cure Time</b></p> <p>Full cure is achieved in 14 days at 72°F.</p> <p>Return to service is determined by ambient temperature, the service environment and exposures. Foot and light vehicle traffic can typically be allowed within 2 hrs.</p> <p><b>Top Coating</b></p> <p><b>VersaRoof EL™</b> can be built to thickness or touched up immediately during application. <b>VersaRoof EL™</b> may be top-coated with non-solvent based coatings after curing for 30 minutes.</p>	<p>Consult VersaFlex Technical Services for more information on available top coats, <b>VersaProof</b> systems, and application recommendations</p> <p><b>Re-coat Time</b></p> <p><b>VersaRoof EL™</b> can be re-coated up to 24 hrs after application at 72°F. Warmer temperatures will reduce the re-coat window. If the re-coat window is exceeded, additional preparation is required. Prior to coating <b>VersaRoof EL™</b> shall be clean, dry, and free of all dirt, dust, debris, contamination, or deleterious material. Use <b>VersaProof Primer RC</b> as a re-activating primer. Consult VersaFlex Technical Service for product and application recommendations.</p>
Cleanup & Safety	
<p><b>Cleanup</b></p> <p>Cured product may be disposed of without restriction. Excess material should be mixed together and allowed to cure and disposed of in a normal manner. Product containers that are “drip free” may be disposed of according to local, state, and federal laws.</p> <p><b>Caution: VersaRoof EL™</b> contains isocyanate. All safety precautions must be followed including proper skin protection and breathing protection. Consult SDS for proper safety suggestions.</p>	<p><b>Safety</b></p> <p>Read, understand, and follow all recommendations on the SDS. Review SDS at <a href="http://www.versaflex.com">www.versaflex.com</a></p> <p>Wash thoroughly after handling, and before eating, drinking, or smoking. Have proper First Aid and PPE on site prior to opening or processing the material. Use chemical safety glasses, or goggles with splash shields. Use impervious body coverings including long sleeve clothing and boots. Use neoprene or nitrile chemical resistant gloves. Use a combination particulate filter and organic vapor respirator.</p>
Packaging, Handling, & Storage	
<p><b>PACKAGING:</b></p> <p><b>One Hundred Ten Gallon Kit:</b> 55 gallons of ‘A’ side and 55 gallons of ‘B’ side. Drums filled by weight.</p> <p><b>Ten Gallon Kit:</b> 5 gallons of ‘A’ side and 5 gallons of ‘B’ Side</p>	<p><b>SHELF LIFE AND STORAGE:</b></p> <p>One year from date of shipment, in original, unopened factory containers, stored in a sheltered area between 60°F - 95° F. Seal tightly after use to prevent introduction of moisture laden air. Store open ‘A’ side with a nitrogen cap after each use.</p>
Warranty	
<p>During a period of one (1) year from date of shipping, VersaFlex Incorporated will refund the price of or replace, at its election, a product it finds to be defectively manufactured, provided the product has been stored and used properly. Except as expressly stated herein, the company makes no warranty of merchantability and no warranty of fitness for any particular purpose, nor does it make any <u>warranty</u>, expressed or implied, of any nature whatsoever with respect to the product or its use. In no event shall the company be liable for delay caused by defects, for loss of use, for indirect, special or consequential damages, or for any charges or expenses of any nature incurred without its written consent.</p>	