



Selection & Specification Data

Description

VersaRoof S™ is a 100% solid, fast setting, plural component, ultra-low shrink, polyurea elastomer and high performance coating. **VersaRoof S™** 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 S™** is a high performance, monolithic liquid applied roofing membrane. **VersaRoof S™** can be applied horizontally, vertically, and overhead, making it ideal for industrial 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 S™ 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 S™ 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 | < 25 sec. |
| Tack Free Time | ASTM D1640 | < 180 sec. |
| Light Traffic | ASTM D1640 | < 120 min. |
| Tensile Strength | ASTM D638 | > 2,200 psi |
| Elongation | ASTM D638 | > 500% |
| Die C Tear Strength | ASTM D624 | >300 pli |
| 100% Modulus | ASTM D638 | 620 psi |
| 200% Modulus | ASTM D638 | 810 psi |
| 300% Modulus | ASTM D638 | 1,070 psi |
| Shore A Hardness | ASTM D2240 | > 90 |
| Shore D Hardness | ASTM D2240 | > 50 |
| Tabor Abrasion (C-17, mg loss) ¹ | ASTM D4060 | < 40 mg |
| Tabor Abrasion (H-18, mg loss) ¹ | ASTM D4060 | < 250 mg |
| Adhesion to Steel ² | ASTM D4541 | > 500 psi |
| Adhesion to Concrete ³ | ASTM D7234 | > 200 psi ⁴ |

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. 1000 g, 1000 revs.
2. Steel prepared in accordance with SSPC-SP 6/NACE N° 3. 2+ mil profile
3. Concrete prepared in accordance with SSPC-SP 13/NACE N° 6
4. Failure occurs in the substrate

Coverage Rate

VersaRoof S™ 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 ft² per gallon
 Concrete & Masonry, normal exposure: 26-20 ft² per gallon
 Steel, normal exposure: 26-20 ft² 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 ft²

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

| | |
|-------------------------------|--|
| Concrete & Masonry | VersaProof™ Primer S VersaProof™ Primer F VersaProof™ Primer E VersaProof™ Primer EWB |
| Cement Board | VersaProof™ Primer S VersaProof™ Primer F VersaProof™ Primer E VersaProof™ Primer EWB |
| Wood & Lumber | VersaProof™ Primer E VersaProof™ Primer EWB |
| Foams | VersaProof™ Primer S VersaProof™ Primer EWB |

| | |
|--|---|
| Ferrous Metal (Optional) | VersaProof™ Primer S |
| Non-Ferrous Metal | VersaProof™ Primer S Vinyl Wash Primer |
| Fiberglass, Rigid PVC, and Modified Bitumen/ Built-Up Roofing | VersaProof™ Primer S |
| VersaProof Membrane | 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 S™ 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 |



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 |
| | Reactor H-XP-3 |

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 S™ 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 S™ 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>Cure Time</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>Top Coating</p> <p>VersaRoof S™ can be built to thickness or touched up immediately during application. VersaRoof S™ 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, VersaProof systems, and application recommendations</p> <p>Re-coat Time</p> <p>VersaRoof S™ 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 VersaRoof S™ shall be clean, dry, and free of all dirt, dust, debris, contamination, or deleterious material. Use VersaProof Primer RC as a re-activating primer. Consult VersaFlex Technical Service for product and application recommendations.</p> |
| Cleanup & Safety | |
| <p>Cleanup</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>Caution: VersaRoof S™ contains isocyanate. All safety precautions must be followed including proper skin protection and breathing protection. Consult SDS for proper safety suggestions.</p> | <p>Safety</p> <p>Read, understand, and follow all recommendations on the SDS. Review SDS at www.versaflex.com</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>PACKAGING:</p> <p>One Hundred Ten Gallon Kit: 55 gallons of ‘A’ side and 55 gallons of ‘B’ side. Drums filled by weight.</p> <p>Ten Gallon Kit: 5 gallons of ‘A’ side and 5 gallons of ‘B’ Side</p> | <p>SHELF LIFE AND STORAGE:</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> | |