



FE-100[®]

Sanitary System

Technical Data Sheet

686 S. Adams St. | Kansas City, KS 66105 | (913) 321-9000 | www.versaflex.com

Selection & Specification Data

Description

VersaFlex FE-100 is a 100% solids, two-component bisphenol A epoxy system, designed as a hand-applied coating/liner for Pre-Cast concrete manholes, pipe, and secondary containment applications. **FE-100** is provided in a convenient pre-measured, two-package kit complete with mixing container for use in field applications. **FE-100** provides excellent adhesion to concrete. **FE-100** provides good resistance to sulfuric acid, sodium hydroxide, detergent, bleach, gasoline, and other common waste water containments.

Typical Uses:

- Pre-Cast Sanitary and Storm manholes, box culverts, and piping.

Color & Stability (Limitations)

Standard color is beige.

Do not use when ambient or operating temperatures that come in contact with the installed lining system exceed 120°F.

The use of a **VersaFlex VF 30** Primer is recommended to reduce pinhole formations and improve adhesion values.

Theoretical Coverage Rates

Theoretical coverage is 26 square feet per gallon at 60 mils wet film thickness. Actual surface coverage will depend on substrate porosity and roughness. A wet film thickness gauge may be used to determine actual coating coverage.

Dry Film Thickness

Recommended thickness will vary from 60 – 150 mils DFT based on service conditions.

Recommended Dry Film Thickness (Typical)

Concrete, New/Smooth:	60-100 mils DFT.
Concrete, Rough:	80-150 mils DFT.
Concrete, Resurfaced:	60-100 mils DFT.
Masonry/Brick:	60-100 mils DFT.
Masonry/Brick, Resurfaced:	60-100 mils DFT.

Physical Properties (Typical)

Description	Method	Result
Tensile Strength	ASTM D 638	2,560 psi
Tensile Elongation	ASTM D 638	0.31 %
Compressive Strength	ASTM D 695	6,170 psi
Flexural Strength	ASTM D 790	4,580 psi
Hardness, Shore D	ASTM D 2240	80
Volume Ratio (A:B)	Calculated	1.5 A to 1 B
Adhesion, Steel (SSPC-10)	ASTM D 4541	>2500 psi
Adhesion, Concrete	ASTM D 7234	Concrete Failed
Working Time		~45 minutes (2.5 gallons kit)
Gel Time - Tack Free		~6 - 7 hours

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.



FE-100[®]

Sanitary System

Technical Data Sheet

Substrate and Surface Preparation

Surface Prep: 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 following 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. Concrete surfaces must be primed with VF 30 Primer according to manufacturer instructions. Please consult **VersaFlex** for details.

Primers (Suggested):

Concrete	VF 30 Primer
Carbon Steel (optional)	AquataPoxy 190* AquataPoxy 90*
Non-Ferrous Metals	AquataPoxy 190*

Mixing and Thinning

Carefully open each pre-packaged bag and add to mixing pail. Do Not add any other material to this mix, including components of the VF 30 Epoxy Primer. Mix contents of part 'A' and part 'B' using a Jiffy type mixer until thoroughly mixed.

Do not thin with solvents. If lower viscosity is needed, heat unmixed material by placing the containers in hot tap water until the desired flow properties are obtained. Unmixed material should not be heated above 150°F (66°C).

Application

Apply the **FE-100** Epoxy System using a Masonry Brush or Steel Trowel, with 1-coat up to 60 mils (1.5 mm). For thicker lining work, multiple coats may be applied, within a recoat window of 4 hours.

If the 4-hour re-coat window is exceeded, the surface of the existing **FE-100** will require abrading / sanding and wipe with a solvent, such as acetone, MEK or **VF TackCoat** prior to reapplication of the **FE-100**. Allow the solvent to flash off before application of the **FE-100**.

Use in Pipe Penetration Sealing and Repair Work:

Clean the area around the penetrations. For existing **FE-100**, abrade / sand the surface of the **FE-100** to remove gloss and roughen. Wipe the surface with a solvent, such as acetone, MEK, or **VF TackCoat**. Allow to flash off.

For repairs to existing **FE-100**, abrade, sand the surface area around the repair spot. Wipe the surface with a solvent, such as acetone, MEK or **VF TackCoat**. Allow to flash off. Apply the **FE-100 ONLY** to the area or penetrations and repairs that have been properly prepared as noted above.



FE-100[®]

Sanitary System

Technical Data Sheet

Application and Service Conditions

Environmental & Substrate Conditions

Minimum recommended substrate temperature: 65°F (18°C) Maximum recommended substrate temperature: 120°F (49°C)

Cure Time

Thin film set time varies with substrate temperature and application thickness. Generally, the coating will be tack-free in 6 hours at 72°F (22°C) and dry-hard in about 8 hours.

Cure to Service

Municipal wastewater: 24 hours at 70°F (21°C)

Recoat Time

This product may be recoated as soon as it becomes tacky but does not transfer to the finger. When applying multiple coats, do not allow more than 4 hours at 72°F (22°C) substrate temperature to pass between coats, higher temperatures will shorten this window. Before recoating; visually inspect, clean and dry surface thoroughly to remove all contamination, including amine blush or condensation. If the recoat time is missed, abrade and clean surfaces prior to recoating.

Cleanup and Safety

Cleanup

Cured product may be disposed of without restriction. Excess liquid 'A' & 'B' material should be mixed together and allowed to cure, then disposed of in the normal manner. Product containers that are "drip free" may be disposed of according to local, state, and federal laws.

Safety - Review SDS at www.versaflex.com.

- Wear Long sleeve overalls or disposable Tyvek suit
- Rubber gloves
- Protective eye wear
- Rubber or leather boots
- Organic cartridge respirator
- Do not use near high heat or open flame
- Do not take internally
- Keep out of reach of children

Packaging, Handling, and Storage

Packaging

Two and One-half Gallon Kit: Individual, pre-measured bags of 'A' and 'B' in a 5 gallon pail.

Shelf Life

One year from shipment date, in original, unopened factory containers.

Storage Temperature & Humidity

Under normal storage conditions of 60°F to 95°F (16° - 35°C).

Warranty

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.

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.