



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

| Selection and Specification   | Substrate and Surface Preparation  |             |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |
|---|--|-------------|--------|--------|-----------|------------|---|----------|----------|-------|----------------|------------|--------|------------------|-----------|----------|------------|-----------|------|---------------------|-----------|---------|------------------|------------|----|------------------|------------|----|-------------------|------------|----------|----------------------|------------|----------|
| <p><b>Description</b></p> <p><b>VersaFlex HM45</b> is a hand mixable, self-leveling, 100% solids, flexible, two-component polyurea, ambient temperature cured material. Designed for small coating applications, slab stabilization, and minor patching were mixing by hand or pumping through non-heated plural component equipment is desirable. <b>HM45</b> is flexible and accommodating to the movement of the substrate. <b>HM45</b> may be used for slab stabilization or as a low-pressure spray material designed for ambient cure on all bondable, properly prepared surfaces. <b>HM45</b> is capable of application well below freezing and is ideal for use in cold storage facilities, freezers, and food processing plants where time and temperature are serious concerns.</p> <p><b>Typical Uses:</b></p> <ul style="list-style-type: none"> <li>• Small repairs on existing polyurea membranes</li> <li>• Cures from -40°F to 130°F</li> <li>• Slab stabilization</li> <li>• Industrial facilities</li> <li>• Manufacturing facilities</li> <li>• Water &amp; waste water treatment</li> <li>• Food processing facilities</li> </ul> <p><b>Color &amp; Stability (Limitations)</b></p> <p>Standard colors are Light Gray (VF1221), Dark Gray (VF1220) and Tan (VF1223). Custom colors are available upon request. Note: Custom colors are not returnable; custom color options can be viewed at <a href="http://www.versaflex.com">www.versaflex.com</a>. The A-side (Iso) color could vary from clear to amber.</p> <p><b>Limitations</b></p> <p><b>HM45</b> is an aromatic based polyurea. Discoloration from exposure to ultraviolet light may occur, however the physical properties are unaffected.</p> | <p><b>General</b></p> <p>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 contaminants, such as oil, grease, rust, scale or deposits. In general, coating performance is proportional to the degree of surface preparation.</p> <p><b>For previously coated surfaces of Polyurea</b></p> <p>Surface should be clean and dry. Abrading the existing polyurea and wiping with VersaFlex <b>TackCoat</b> will help promote the adhesion of <b>HM45</b>. Allow <b>TackCoat</b> to flash off/dissipate prior to application. Surface should be tacky.</p> <p><b>Physical Properties (Typical) (Post cured at 225°F for 24 hours)</b></p> <table border="1"> <thead> <tr> <th>Description</th> <th>Method</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>VOC (g/l)</td> <td>Calculated</td> <td>0</td> </tr> <tr> <td>Pot Life</td> <td>Internal</td> <td>4 min</td> </tr> <tr> <td>Tack Free Time</td> <td>ASTM D1640</td> <td>45 min</td> </tr> <tr> <td>Tensile Strength</td> <td>ASTM D638</td> <td>2100 psi</td> </tr> <tr> <td>Elongation</td> <td>ASTM D638</td> <td>450%</td> </tr> <tr> <td>Die C Tear Strength</td> <td>ASTM D624</td> <td>550 pli</td> </tr> <tr> <td>Shore A Hardness</td> <td>ASTM D2240</td> <td>90</td> </tr> <tr> <td>Shore D Hardness</td> <td>ASTM D2240</td> <td>40</td> </tr> <tr> <td>Adhesion to Steel</td> <td>ASTM D4541</td> <td>&gt;500 psi</td> </tr> <tr> <td>Adhesion to Concrete</td> <td>ASTM D7234</td> <td>&gt;200 psi</td> </tr> </tbody> </table> <p>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.</p> | Description | Method | Result | VOC (g/l) | Calculated | 0 | Pot Life | Internal | 4 min | Tack Free Time | ASTM D1640 | 45 min | Tensile Strength | ASTM D638 | 2100 psi | Elongation | ASTM D638 | 450% | Die C Tear Strength | ASTM D624 | 550 pli | Shore A Hardness | ASTM D2240 | 90 | Shore D Hardness | ASTM D2240 | 40 | Adhesion to Steel | ASTM D4541 | >500 psi | Adhesion to Concrete | ASTM D7234 | >200 psi |
| Description   | Method   | Result      |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |
| VOC (g/l)   | Calculated   | 0           |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |
| Pot Life  | Internal   | 4 min       |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |
| Tack Free Time  | ASTM D1640   | 45 min      |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |
| Tensile Strength  | ASTM D638  | 2100 psi    |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |
| Elongation  | ASTM D638  | 450%        |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |
| Die C Tear Strength   | ASTM D624  | 550 pli     |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |
| Shore A Hardness  | ASTM D2240   | 90          |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |
| Shore D Hardness  | ASTM D2240   | 40          |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |
| Adhesion to Steel   | ASTM D4541   | >500 psi    |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |
| Adhesion to Concrete  | ASTM D7234   | >200 psi    |        |        |           |            |   |          |          |       |                |            |        |                  |           |          |            |           |      |                     |           |         |                  |            |    |                  |            |    |                   |            |          |                      |            |          |



HM45™

Hand Mix Polyurea  
Technical Data Sheet

### Substrate and Surface Preparation

#### Concrete

New concrete should be cured for a minimum of 28 days. Testing for moisture vapor emission or relative humidity according to ASTM F1869 or ASTM F 2170 is recommended. A moisture mitigating primer is recommended if:

- RH is greater than 75%
- Calcium chloride test measures greater than 3 lb. / 24 hours / 1000 sq. ft.
- Tramex concrete moisture meter reading over 5%

Provide a dry, clean, sound concrete substrate. Repair spalls and other defects with approved patching material, such as VersaFlex **QuickMender**. Prepare concrete surfaces to SSPC SP13/NACE No. 6. standards. For application direct to concrete, surface should have a profile that meets SSPC-SP3 standards or a profile suitable for the applied coating thickness as stated in ICRI guideline No. 310.2R-2013.

#### Surface Contaminants

Check for soluble salts on surfaces to be coated. Test with Chlor\*Test. If amount of soluble salts exceeds recommended limits, treat with Chlor\*Rid. Repeat process until acceptable limits are reached.

Maximum amounts of soluble salts (micrograms per square centimeter):

- Chlorides - 3 immersion, 7 non-immersion
- Nitrates - 5 immersion, 10 non-immersion
- Sulfates - 10 immersion, 20 non-immersion

#### Metal Surfaces

Provide a clean, sound metal substrate. Sand blast metal to remove laitance and other contamination and provide a suitable 2-3 mil blast profile. Prepare metal surfaces to SSPC-SP10 Near White Blast or better. Test prepared surfaces using Elcometer adhesion testing ( ASTM D 4541).

#### Primers

HM45 is a self priming product, so in general a primer is not required. For highly porous substrates, a primer such as **VF 15, VF 20, Raven 171, or Raven 175** primer is recommended. For concrete slabs with high RH or high moisture vapor emissions, a moisture mitigating primer such as **Milamar MVE1 or Raven 175** is recommended.

If use of a primer is necessary on metal surfaces, **Milamar ICO Rust Guard or Raven 190** is recommended.

### Mixing Instructions

HM45 material should be warmed to 70°F prior to mixing or dispensing cartridges.

**Hand Mixing:** Mix in small quantities, mix equal amounts of "A" and "B" components until homogeneous mix is achieved. **\*\*\*IMPORTANT : Add the 'B' side to the A, not 'A' to 'B'.** If 'A' is added to the 'B', material will have a thick, putty like consistency. Use paint paddle or low speed drill mixer; however, do not entrain air or bubbles into the mixture.

**Machine Dispensing:** Use 1:1 ratio pump, with or without heater as required for individual application. Low pressure spray head can be used for ambient cure spray applications.

**600ML Dual Component Cartridges:** See cartridge assembly instructions on page 3.



### Cartridge Assembly and Dispensing

**Cartridge Assembly and Application:** After shaking cartridge for 2-3 minutes, remove the black plug caps from the cartridge assembly. **Save and clean these caps** - They can be re-used to seal the cartridge head if there is material left in the cartridge after your work is complete.

Place the static mixing wand over the plug cap openings. Slide the cartridge lock nut over the mixing wand and screw on to the dual cartridge. (Do not over-tighten). Next insert the cartridge set into the dual component cartridge gun. **The cartridge set must be held vertically with the wand facing up to make sure material does not leak out.**

With the cartridge gun held in an upright position, slowly trigger material allowing it to fill the static mix wand. Then change positions, holding the wand pointed downward and discharge a small amount of material into a small container. This will ensure the cartridge gun plungers are applying even pressure, and the material is being properly mixed.

Begin triggering material into the repair zone using consistent and continuous pressure. Avoid sporadic pressure, as this may cause uneven dispensing and mixing of the material. Continue triggering the material into the repair zone until the cartridge is completely dispensed.

**Clogging:** If you have to stop dispensing the material, it will begin to gel inside the mixing wand very quickly and will make it more difficult to squeeze material through the wand. If this occurs, quickly remove the mix wand and replace it with a new one. Follow the cartridge assembly procedure to refill the new wand and continue dispensing .

If there is leftover material in the cartridges, remove the mixing wand and discard it, then replace the black plugs into the cartridge head and save for future use. **THE MIXING WAND CAN BE USED ONLY ONCE, BUT SAVE THE THREADED LOCK NUT—IT CAN BE RE-USED WITH A NEW MIX WAND.**

### Application

The working time for **HM45** is very short—approximately 3—5 minutes depending on the temperature. Be sure to have an application plan before mixing.

Apply **HM45** directly to properly prepared surface using trowel , brush, roller or dual component cartridges. Product can be applied to horizontal surfaces at virtually any thickness. For Vertical applications, sagging will begin to occur at thicknesses over 30 mils. In most cases, brushes and rollers will need to be cleaned or replaced after each batch.

**Machine Dispensing:** Use 1:1 ratio pump, with or without heaters as required for individual application. Low-Pressure spray head can be used for ambient cure spray applications.



| <b>Application Equipment</b>  |  |
|---|--|
| <p><b>Plural Component Pumps</b><br/>AST GMP-025<br/>AST GMP-050<br/>AST GMP-075<br/>Static Mixer: 1/2 or 3/8-inch, 30 element<br/><b>Airless Spray:</b> N/A</p>  | <p><b>Albion 300/300ML Dispensing Guns For Cartridge Sets</b><br/>B26T600 Manual Gun<br/>AT600 Pneumatic Gun<br/>E18T600 18-Volt Battery Gun<br/><b>Static Mix Wand</b><br/>Nordson 7701028, 14 x 1/2-inch, 30 element</p>   |
| <b>Packaging, Handling, and Storage</b>   |  |
| <p><b>HM45</b> is available in <b>600 ML Cartridges, 2-gallon, 10-gallon, 60-gallon, and 110-gallon kits.</b> The containers are filled by weight.</p>  | <p><b>Shelf Life</b><br/>One year from shipment date, in original, unopened factory containers.<br/><b>Storage Temperature &amp; Humidity</b><br/>Under normal storage conditions of 60°F to 95°F (18°F - 35°C).</p>   |
| <b>Cleanup &amp; Safety</b>   |  |
| <p><b>Cleanup</b> Cured product may be disposed of without restriction. Excess liquid ‘A’ &amp; ‘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.<br/><br/>Use disposable plastic tools and buckets wherever possible. Disposable tools may be thrown away after use. Cured material may be stripped or peeled from plastic tools and containers. Steel mixers or other metal tools are more difficult to clean. They may need to be soaked in a solvent such as MEK to soften and peel cured material.</p>   | <p><b>Safety</b><br/>Review complete SDS data at <a href="http://www.versaflex.com">www.versaflex.com</a>.<br/><b>Basic safety recommendations for personal protection are:</b></p> <ul style="list-style-type: none"> <li>• Rubber gloves</li> <li>• Splash shield or safety glasses with splash guards</li> <li>• Rubber or leather boots</li> <li>• Do not use near high heat or open flame</li> <li>• Do not take internally</li> <li>• Keep out of reach of children</li> </ul> |
| <b>Warranty</b>   |  |
| <p><b>Limited Warranty.</b> 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><b>Limitation of Liability.</b> 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> |  |