VersaFlex®
INCORPORATED
686 South Adams Street, Kansas City, KS 66105

SPECIFICATION

Section 03317
Concrete Floor Joint Fillers

PART 1 – GENERAL

1.1 GENERAL DESCRIPTION OF WORK

A. Provide all labor, products and equipment required to properly install semi-rigid filler in joints for interior concrete floor slabs.

1.2 SCOPE OF WORK

A. Fill all contraction (control) and construction (formed) joints in the interior concrete floor slab where the joints will be exposed to material handling vehicle wheels.
B. Refer to drawings for additional joints possibly requiring filler, such as joints under racks, joints at column diamonds and pads, etc.

1.3 RELATED WORK

A. Division 3, Section 03300 – "Cast-In-Place Concrete"
B. Division 3, Section 03930 – "Concrete Floor Crack and Joint Repair"
C. Division 7, Section 07900 – "Joint Sealants"

1.4 APPLICABLE INDUSTRY STANDARDS & BEST PRACTICES

A. Products and installation shall be in compliance or exceed the joint filling criteria established in the latest ACI 302 and ACI 360 Committee published documents.

1.5 CONTRACTOR QUALIFICATIONS

A. Installer shall have a minimum of three (3) years experience or be a Certified VersaFlex installer for the installation of semi-rigid fillers on industrial floors.
B. Use only Manufacturer Approved Applicators for work covered by this section.
C. Approved Applicator shall use tools and equipment specifically designed for the preparation and placement of industrial joint fillers.

1.6 SUBMITTALS

A. Joint Filler Materials: Submit Manufacturer's data describing joint filler proposed for use on the project.
B. Submit Manufacturer's Approved Applicator Certificate.

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PART 2 – PRODUCTS

2.1 CONTROL JOINT FILLER:

A. Provide semi-rigid, rapid curing, two-part, self-leveling, 100% solids pure polyurea for control and construction joints intended for each condition listed.
B. Utilize products with physical properties meeting the following minimum values.

(Typical) 1:1 Mix Ratio		
Cured Film Properties	**Test Method**	**Typical Value**
VOC	Theoretical	Zero
Solids content	Theoretical	100%
Gel time		~1 minute
Tack free		2 – 3 minutes
Light foot traffic		60 minutes
The following properties are typical after maintaining cured product at 70°F - 77°F for seven days:		
Tensile strength (psi)	ASTM D638	600 – 1200
Tensile elongation (%)	ASTM D638	240 – 500
Modulus of elasticity (psi)	ASTM D638	400 – 900
Tear strength (lb/in)	ASTM D624	150 – 250
Shore A hardness	ASTM D2240	≥75
Tabor abrasion, mg wt loss (1000 g, 1000 revs, H-18)	ASTM D4060	375 – 500
The value ranges stated in this Technical Data Sheet are based on system processing under laboratory conditions. Equipment configurations and/or field application conditions may produce variances in final system values.		

Acceptable for use in USDA/FDA/CFIA regulated facilities.

C. Products: Subject to compliance with requirements, utilize products manufactured by VersaFlex Incorporated, Kansas City, KS 913-321-9000.
   1. Joint filler for all areas with operating temperatures of -40□F or higher, shall be "VersaFlex SL/75 Polyurea Joint Filler".
D. No joint filler substitutions will be allowed.

2.2 ACCESSORIES

A. Silica sand may be used at contractor's option to choke-off shrinkage cracks beneath filler. Silica must be dry, bagged, 20 to 30 mesh size.
B. The use of compressible foam backer rod is not recommended in saw-cut control joints. Contact VersaFlex for deviations or questions.
C. Compressible foam backer rod may be used in through slab construction joints only but shall be placed at a minimum depth of 2". No other use of backer rod will be allowed. Refer to installation section and product technical data for additional information.
D. Joint cleanout and preparation should be done utilizing dust-free, diamond blade equipped cleanout saws such as those manufactured by Sawtec/US Surface Preparation, (800)624-7832, Joe Due Equipment, (877)563-3383, or equivalent.

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PART 3 – EXECUTION

3.1 PROJECT CONDITIONS

A. Work area should be free of obstructions and other trades.
B. Slab should be visibly dry and all floor scrubbing/washing activities should be suspended at least 48 hours prior to filler installation.
C. Store material indoors in warm, dry condition.
D. Do not apply to horizontal surfaces with greater than 3% slope.
E. Ambient installation temperature for this specification is 60 degrees F and higher. For use below 32^0 F contact manufacturer for special instructions for below freezing installations.
F. Allow no ponded water on surfaces receiving joint filler. Surface must be dry

3.2 TIMING OF INSTALLATION

A. For ambient temperatures a 90-120 day slab cure is advisable. Deferring filling until after facility is under permanent temperature control is best, if possible. At a minimum slab cure time should exceed 28 days per ACI 302.
B. The American Concrete Institute (ACI) recommends that filling be deferred as long as possible to allow for maximum slab shrinkage and joint widening. Deferring filler installation as long as possible will help to minimize the occurrence of joint filler separation due to excessive joint widening during concrete cure (and shrinkage).

3.3 EXAMINATION OF CONDITIONS

A. It is the responsibility of the installer to inspect project and joint conditions and notify on-site management in writing of any deficiencies that may adversely affect the quality or durability of the work performed or his contract price. Documentation of project is recommended, including written documentation and photos displaying prepped and completed joints.
B. Start of work by the installer implies acceptance of conditions.

3.4 PRE-INSTALLATION SAMPLE - if required

A. Before start of actual work, the applicator shall install samples to demonstrate his intended procedures and finished product. Sample shall include at least 25' each of both contraction and construction joints and be performed in the presence of on-site management.
B. If procedures and finished product are approved they will be considered a standard for the entire project.

3.5 JOINT PREPARATION

A. Prior to installation of joint fillers, all saw-cut joints shall be thoroughly cleaned to their full original depth. Typically 1 ¼ - 1 ½" in a 6" slab, 2" in an 8" slab. Where the

original saw-cut depth exceeds 2", joint preparation and filling must be performed to a minimum depth of 2".

B. Construction (formed, through slab) joints that are not saw-cut shall be cleaned to a minimum depth of 2".
C. Preparation shall be performed using a vacuum-equipped saw that will reach the base of the saw-cut joint or to a depth of 2" in the case of through slab construction joints, and shall be used in a manner that takes both joint walls back to bare concrete, removing all saw laitance, curing compounds, sealers, debris, etc. Joint cleaning may be performed using two cleaning passes, one along each side of the joint. Or, if only one cleaning pass is performed, the diamond blade width must be slightly wider than the joint to be cleaned.
D. Where joints have minor edge chips or spalls, areas may be "squared off" or filled along with the joint itself, or repaired with VersaFlex QuickMender®, concrete repair products. Consult VersaFlex for questions.
E. Keep prepared joints free of dust, moisture, and debris prior to filling.
F. Concrete moisture ≤5% at or near surface. Provide clean and dry concrete joint surfaces.

3.6 CHOKING-OFF JOINT BOTTOM

A. Compressible backer rod is prohibited in saw-cut joints unless 2" depth is exceeded.
B. Compressible backer rod may be used in through-slab (non-sawn) construction joints, but shall be recessed at least 2" below the slab surface.
C. Contact VersaFlex for deviations or questions.

Caution: The use of backer rod in any saw-cut joints to be approved by Owner. Consult Plans & Specifications.

3.7 JOINT FILLER INSTALLATION

A. Installation of VersaFlex SL/75 Polyurea Joint Filler:

1. Drill mix well Part "B" component to distribute any pigment settlement that may have occurred during shipping or storage.
2. SL/75 must be dispensed using dual-component power dispensing equipment (AST .025 minimum) or through dual-component cartridge units. Pump, reservoir tanks and dispensing hoses should be heated for all freezer work. When changing mixing wands, check product flow equalization prior to installing new wand by pumping small amount of material into a waste bucket.
3. Fill joint in one pass for shallow depths and fill in two pass system for joints over 1" in depth from bottom to top, slightly overfilling the joint.
4. After SL/75 has fully cured, razor off excess to leave a flush filler profile. Timing of the shaving (30 min. to 1 hour typically) can affect flushness; test for shave time that will result in flush shave. Two hours or next morning is best practice.
5. If low spots exist or if the finish profile is not flush, abrade the filler surface with a wire brush, wire wheel, or other means and apply an additional cap bead of SL/75 filler. Allow to cure and shave flush to the floor surface.
6. Prevent surface etching and staining. Use a thin film of Ivory bar soap along joint surface edges approximately 3 to 4 inches on each side. Use Stain

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Preventive Film product where specified. VersaFlex joint filler will not stain if allowed to cure for 2 hours or more prior to shaving.

7. Cold/Freezer Applications. Operating temperatures shall be maintained for a minimum of 10-14 days prior to installing filler to allow for concrete shrinkage and joints to open and reduce separation. Material shall be kept at 70^{0}F prior to using and while installing. Keep product in a warm room when storing. Use heat blankets on the tanks and electrical heat tape on hose lines to help maintain material temperature. If product is below 60^{0} F while installing, the mixed material may go off ratio from not mixing properly, and the joints may either be soft and/or sticky. Contact VersaFlex for details.

PART 4 -QUALITY ASSURANCE

4.1 JOINT FILLER DEFICIENCIES:

A. Installer is advised that significant deficiencies in workmanship, including: less than proper filler depth, inadequate joint cleaning, high moisture, concave filler profile, etc., shall be removed and properly replaced.

END OF SECTION