



## FLEX-A-FILL PRODUCTS

INSTALLATION INSTRUCTIONS, JULY 2014

### READ BEFORE USING THIS PRODUCT

**GENERAL:** These products are hot-applied, single component polymer modified asphalts supplied in solid block form that are used to seal or fill cracks in asphalt concrete pavements or to seal joints in portland cement concrete pavements. To use, product is removed from the package, heated in a melter and then applied. Details on product specifications, climate and usage suitability, and product selection are contained in Product Data Sheets.

**MELTING AND APPLICATION:** FLEX-A-FILL products can be melted and heated in jacketed double boiler type melting units such as the CrafcO Supershot, EZ Pour, and EZ Series 2 melters. **FLEX-A-FILL 9075 R only can also be melted in small (50 gallon (190L) maximum) direct bottom fired types of melters.** Double boiler type melters should meet requirements of appendix X1.1 of ASTM D6690. **Both types of melters must have effective agitation and temperature indicating devices to assure that the product is heated to and maintained within the specified application temperature range.** Heat transfer oil in double boiler type melters should not exceed 525°F (274°C) during melting. **During melting in direct bottom fired melters, the product must be agitated and the temperature carefully monitored to assure that it is not overheated.** If overheated to temperatures above 400°F (204°C), product may degrade, typically by softening. Melters must be capable of safely heating product to 400°F (204°C).

**CAUTION:** Do not agitate when adding product due to splashing. If there are any questions regarding appropriate types of direct bottom fired melters to use, please call CrafcO for recommendations. To use, product is heated to between the recommended pour temperature and the maximum heating temperature which is shown on product containers. These products can be applied with either pressure feed wand systems or gravity feed pour pots (CrafcO Part No.40200 or 40201).

**APPLICATION LIFE:** Application life when heated is approximately 12 to 15 hours in double boiler melters. This may be extended by adding fresh blocks as quantity in the melter decreases. Product should be agitated while being applied. Product may be reheated to application temperature once, after initial heat up. When application life has been exceeded, product will begin to thicken, become “stringy” and may then gel. If this occurs, product should immediately be removed from the melter and discarded. In direct fired melters, product should be applied quickly after melting (within 3 hours) and all heated product should be used when melted. If allowed to solidify in a direct fired melter, reheating may result in degradation of properties.

**PAVEMENT TEMPERATURES:** Apply product when pavement temperature exceeds 40°F (4°C). Lower temperatures may result in reduced adhesion due to presence of moisture or ice. If pavement temperature is lower than 40°F (4°C), it may be

warmed using a heat lance (CrafcO Part No. 45650) that puts no direct flame on the pavement. If installing at lower pavement temperatures than 40°F (4°C), extreme care should be used to insure that cracks or joints are dry and free from ice and other contaminants. Product temperature should be maintained at the maximum heating temperature. Applied product should be checked by qualified personnel to assure that adhesion is adequate.

**TRAFFIC CONTROLS:** Place traffic controls in accordance with Part 6, Temporary Traffic Controls of the FHWA Manual on Uniform Traffic Control Devices (MUTCD) to protect the work site for the duration of rep

**CRACK OR JOINT CLEANING:** For appropriate adhesion, cracks or joints must be clean and dry immediately prior to installation. After widening or debris removal, and just prior to product installation, final cleaning shall be accomplished using high pressure, oil free, dry compressed air at 90 psi (620 kpa) minimum, to remove any remaining dust. Both sides of the crack or joint shall be cleaned. Surfaces should be inspected to assure adequate cleanliness and dryness.

**ASPHALT PAVEMENT CRACK SEALING:** Crack sealing consists of installing extensible sealants into routed reservoirs in working cracks in pavements in good condition.

**Reservoir Cutting:** Based on the 98% LTPPBIND temperature range (difference from high to low), cracks are to be routed as follows:

Temperature Grade Range	Minimum Reservoir Width	Recommended Reservoir Depth
80°C or less	½” (12 mm)	¾” (19 mm)
86°C	¾” (19 mm)	¾” (19 mm)
92°C	1 1/8” (28 mm)	½” (12 mm)
98° or greater	1 ½” (38 mm)	½” (12 mm)

Reservoir width should not exceed 1 ½” (38 mm). Cutting should remove at least 1/8” (3 mm) from each side and should produce vertical, intact surfaces with no loosely bonded aggregate. The pavement should be sound enough to resist significant spalling during cutting. Final reservoir width should not exceed twice the cutter width or 1 ½” (38 mm).

**Installation and Finishing:** After cleaning, sealant at the required temperature is applied to fill the reservoir. Sealant can be applied with up to a 3/8” (10 mm) underfill, flush fill, or with an overband cap that does not exceed 1/16” (1.5 mm) above the pavement surface, or greater than a 2” (50 mm) width beyond crack edges. These configurations are achieved using appropriate wand tips, shoes or squeegees. To reduce surface tack, CrafcO DeTack or other approved material may be applied.

**ASPHALT PAVEMENT CRACK FILLING:** Crack filling consists of installing flexible, traffic resistant product into prepared, cleaned, non-working pavement cracks. Filler can be installed in either cleaned or routed cracks or in surface overbands.

***Routed Reservoir*** – Routed reservoirs are recommended for longest life. Guidelines for determining reservoir use are:

1. Cracks density should not exceed approximately 20% (linear feet of cracks per square feet of pavement area).
2. Pavement should be sound enough to resist significant spalling during cutting. (Final reservoir width should not exceed double the cutter width, or 1 ½”(38 mm)

***Reservoir Dimensions*** – Determined as follows:

1. The cut should remove at least 1/8” (3mm) from each side of crack and cut back to sound pavement.
2. Minimum width is ½” (12 mm), maximum is 1 ½” (38 mm).
3. Recommended cut depth is ¾” (19 mm).

***Cleaned Cracks*** – Cracks may be cleaned and filled, without reservoir cutting, however longer life is achieved with reservoirs. Cleaning consists of using high-pressure compressed air, or bushing techniques to remove debris.

***Surface Overbands*** – Product can be applied in overbands after crack and surface cleaning with compressed air. Overbands should not exceed 1/16” (1.5 mm) high above the pavement surface or extend greater than 2” (50 mm) beyond each crack edge.

***Filler Installation and Finishing*** – Same as sealant installation and finishing.

**PCC JOINT SEALING AND RESEALING:** Joint sealing consists of installing extensible sealants into sawn and cleaned joint reservoirs in PCC pavements.

***Reservoir Cutting*** – Joint should be formed or sawn to required size. Joints should be at least ¼” (6mm) wide, and should not exceed 1 ½” (38mm) wide. Reservoir depth should allow for a sealant depth to width ratio of 1:1 to 2:1, sufficient depth for backer rod, and specified surface recess. Reservoirs shall be cut no deeper than required. Old sealant can be removed by knives, plows or sawing. When resealing, sawing should remove all traces of old sealant to produce cut, clean surfaces.

***Reservoir Cleaning*** – After sawing, joints shall be flushed with water to remove slurry and then allowed to dry. Just prior to installing sealant, both joint surfaces shall be cleaned using sandblasting, brushing or other means to remove remaining of sawing residue. Final cleaning is then done with high-pressure compressed air. Joints are to be inspected to assure cleanliness by rubbing a finger along each face to spot dust or other contaminants. If found, recleaning should occur until joints are clean and dry.

***Backer Rod*** – After cleaning, heat resistant backer rod (ASTM D5249, Type I) approximately 25% larger than the joint width shall be installed uniformly to the required depth and without damage or puncturing.

***Sealant Installation*** – Sealant heated to the required temperature is applied to the joint. Sealant can be applied using a recess, flush, or with a surface overband (maximum 1/16” (1.5 mm) above the surface, and 2” (50 mm) maximum beyond each joint edge).

**APPLICATION PRECAUTIONS:** In certain situations, additional consideration needs to be given to product selection and application geometries.

***Parking lots and other areas subjected to slow moving traffic and pedestrians:*** Product must be stiff enough at hot summer temperatures to resist pick up and should not be applied on top of the pavement surface. Product should have a high temperature grade at least one step above the grade for the climate. For even better pick-up resistance, increase by two grades.

***Pavement to receive an Overlay, Surface Treatment, or Seal Coat:*** Product will be subjected to overlay heat effects and carriers for surface treatments and seal coats. If product is applied on top of the pavement, and an overlay is then placed, bumps may occur during compaction.

***High Severity Cracked Areas:*** Highly cracked areas (fatigue cracks in wheel paths) should not be treated by covering cracks because pavement friction may be affected. These cracks can be filled if followed by a surface treatment or overlay to restore friction.

***Fuel or Oil Spill Areas:*** These products should not be used in fuel or oil spill areas due to softening that may occur.

***Crack Sealing or Filling in Pavements with Surface Treatments:*** When crack sealing or filling pavements with chip seals, slurry seals, and open graded friction courses, routing should be deep enough to extend through the surface treatment layer into the underlying asphalt concrete. This anchors product into solid pavement for better bonding.

**CLEAN OUT:** If equipment used requires clean out, follow the manufacturer’s instructions. If solvent is used, insure that it does not contaminate product because dilution and flash problems may occur.

**STORAGE:** Pallets of product are protected with a weather resistant covering. During storage, this covering must be intact to prevent boxes from getting wet. If wet, boxes may lose strength and crush. Rips in the pallet covering should be repaired to maintain packaging integrity. Pallets should be stored on a dry, level surface with good drainage. Pallets should not be stacked because crushing of bottom boxes may occur. Product properties are not affected by packaging deterioration.

**SAFETY PRECAUTIONS:** Since these products are heated to elevated temperatures, it is essential that operations be conducted safely. All personnel need to be aware of hazards of using hot applied materials and safety precautions. Before use, the crew should read and understand product use and safety information on the box and the product MSDS. User should check D.O.T. requirements for transportation of product at elevated temperatures above 212°F (100°C).

#### **HAZARDS ASSOCIATED WITH HOT APPLIED**

**MATERIALS:** Skin contact with hot materials causes burns. Over exposure to fumes may cause respiratory tract irritation, nausea, or headaches. Precautions are to be taken to prevent contact with hot material and to avoid inhalation of fumes for everyone in the vicinity. Safety precautions should include:

1. Protective clothing to prevent skin contact with hot material.
2. Care when adding product to melters to reduce splashing.
3. Careful operation of wands or pour pots used to apply product.
4. Traffic and pedestrian control measures which meet or exceed local requirements to prevent access to work areas while product is in a molten state.
5. Avoidance of material fumes.
6. Proper application configurations with a minimum amount of material excess.
7. Appropriate clean up of excessive applications or product spills.

**ADDITIONAL INFORMATION:** Additional information regarding these products is available by contacting your distributor. This information includes:

1. Product Data Sheets,
2. Material Safety Data Sheets,
3. Safety Manual,
4. Sealing Cracks and Joints in Parking and Pedestrian Areas,
5. “Bump Formation & Prevention In Asphalt Concrete Overlays Which Have Been Crack Sealed”
6. Sealant Selection Guide