

DOT APPROVED
ALT-671 Flex Crete™

Gray Concrete Joint and Crack Sealant

Approved by National Park Service - Complies with all V.O.C. emissions and E.P.A. standards.



GENERAL: Flex Crete™ is a gray single-component, ready-to-use, ultra-low modulus, pourable, neutral cure elastomeric emulsion which offers the performance and durability characteristics of conventional silicone **BUT** is **NOT A SILICONE OR POLYURETHANE BASED PRODUCT**. It provides a lasting and flexible seal with the ease of installation of self-leveling pourable materials.

Flex Crete™ can be used in new highway construction or as a remedial or repair sealant in old construction. In new construction, it provides a long-lasting seal that will prolong the life of the pavement and prevent water and noncompressibles from entering into the joint and damaging the pavement and foundation.

For use in repair or remedial applications where other joint sealing materials have failed because of excessive movement or poor weatherability. Envirotx' Flex Crete™ Sealant can be used to seal irregularly shaped and/or spalled joints. It offers outstanding weathering resistance, remains flexible down to temperatures lower than -20°F (-29°C), is jet-blast resistant and will maintain field serviceability when exposed to intermittent fuel and oil spills. It bonds strongly to concrete joints or asphalt without the use of a primer.

Flex Crete™ can be used in all typical concrete joint/seam or crack applications in most climates and is compatible with asphalt pavement. Flex Crete™ is easily applied to concrete joints using manual methods or bulk dispensing system units such as those available from manufacturers including Pyles/Graco and Johnstone and/or an inexpensive double-diaphragm pump with a "surge bottle" like the Allstates' Crac Shot™ Pump. The leveling characteristics insure that the required joint wetting for development of appropriate adhesion occurs during application, no tooling is required.

ADVANTAGES: Flex Crete™ has several advantages over traditional silicone or two component sealants.

- Significantly less expensive
- Used for both joints/seams and cracksealing (NO saw cutting or backer rod installation necessary on cracks)
- Meets "Rapid Cure" skin-over and complete cure time specification
- Lower cost barrier to entry with ability to use double-diaphragm drum pump or reusable "industrial-size" syringe and bulk calk gun applicators (no expensive "RAM" pumps or calking cartridges required)
- Better adhesive properties
- Greater resistance to noncompressibles including in subfreezing temperatures especially for ultra-low modulus
- Better resistance to puncture, abrasion or vandalism
- Greater Shape Factor of up to 1.5 on reservoirs up to 2" (50.8 mm) wide and significantly higher on reservoirs less than 1" (25.4 mm) wide.
- Greater ability to withstand high heat environments without breaking down
- Tolerates limited dampness of surface or reservoir (cure times will be increased)
- Pourable and pumpable
- Better adhesion to asphalt; no need to remove asphalt from concrete face before sealing
- Is self-adhesive (unlike silicone) allowing additional product to be applied to correct mistakes
- Cleaning can be completed with just water in uncured state – **NO SOLVENTS** needed before curing
- NO vapors, respiratory or extreme skin irritants
- No priming or tooling required

SPECIFICATION CONFORMANCE: Flex Crete™ is formulated for highway, airport, parking structures, bridge, driveway, walkway and saw cut joints/seams or cracks where movement occurs. Flex Crete™ is **NOT** a silicone or polyurethane based product yet it conforms to specifications for ultra-low modulus silicone for many highway departments and federal agencies. The product conforms or exceeds most requirements of ASTM D5893 - "Standard Specification for Cold-Applied Single Component, Chemically Curing Silicone Sealant for Portland Cement Concrete Pavements" for type SL sealants, ASTM C-920 – "Standard Specification for Elastomeric Joint Sealants" and DMS-6310 – "Joint Sealants and Fillers". **ASTM D-5893; ASTM C-920, Type S, Grade P, Use T, M, G.**

TYPICAL DATA:

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life 12 months in original unopened container. A product skin may form in pails and drums, remove prior to use.
Storage Conditions Store in unopened containers at temperatures below 100°F (37.8°C) out of direct sunlight. **KEEP FROM FREEZING.**
Packaging 55 gal. (208.3 L) drum; 5 gal (18.9 L) pail; 1 gal (3.8 L) jug/6 per case
Physical **Non-volatile** 69%; **Penetration** (ASTM D1850) 25 dmm; **Viscosity** ~90 Krebs Stormer Units

ASTM D5893, C920, DMS-6310 Physical Requirements

Cure Evaluation, 21 days; Rapid Cure, 2 days
Rheological Properties, (C639 Type I)
Extrusion Rate, mL/min (C1183A); ≥10
Specific Gravity, 25°C
Hardness, Type A-2 Durometer, -29°C (C661)
Hardness, Type 00 & A-2 Durometers, 23°C (C661, Use T₁); 30 & 25 min
Effects of Heat Aging, 21 days, %, 70°C (C1246, C792); 7, 10 max
Tack Free Time, hours (C679); 5, 72 max
Skin-Over Time, at 25°C (77°F), 50% R.H., 60 mins max
Adhesion in Peel, lbf (C794); Dry 5 min
Adhesion in Peel, 200 hrs UV Exposure, lbf (C794); 5 min
Stain and Color Change, (C510)
Flow, 93.3°C; No Flow
Ultimate Elongation %, 23°C (D412, Die C)
Tensile Stress at 150%, 23°C (D412, Die C)
Tensile Strength (Joint Modulus) at 150%, DMS 6310 Silicone and Polyurethane Properties (TEX-525-C):
 Strength after air curing, 96 hrs @ 25°C, 50% R.H.; Standard; After 24 hr. extension; 3-30 psi
 Strength after water immersion, 96 hrs @ 25°C; 3-30 psi
 Strength after oven aging, 96 hrs @ 70°C; 3-30 psi
Effects of Accelerated Weathering, 250 hrs (C793); No Cracks; No Cracks on Bend
Effects of Accelerated Weathering, 5000 hrs (D5893)

ALT-671 Flex Crete™ Results

Complete cure w/i 2 days
Smooth & Level, No Bubbling
1,930
1,224
41
87 & 39
0.84; No Cracking or Chalking
4
20 minutes
11.9
15.7 Dry; 12.4 Saturated
No Visible Change
No Flow
328
52.4
6.7; 9.1
3.5
5.0
No Cracks; No Cracks
No flow, tackiness, oil like film, blister, voids, loss of rubber like properties; No cracks on bend

INSTALLATION:

Joint Design: May be used in any joint design in accordance with accepted highway/ engineering practice. The number of joints and the joint width should be designed for a recommended joint movement of +25% and -25% at time of installation. The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 2 inches (50 mm) and the minimum is 1/4 inch (6.4 mm). **Sealant should be completely filled to pavement surface.** After curing sealant will be recessed 3/8-1/4" below pavement surface.

Joint Backing: Closed cell polyethylene backer rods are preferred as joint backing to control depth of sealant bead. Where depth of joint will prevent use of joint backing, an adhesive backed polyethylene tape must be installed to prevent three side adhesions.

Surface Preparation: For good adhesion, the joint interface must be sound, clean, dry, frost free, free of any oils, greases or incompatible sealers, paints or coatings that may interfere with adhesion. Portland cement joints should be fresh saw cut or sand blasted and blown clean with oil free compressed air. **For cracks,** remove all loose debris, including dirt, sand, dust and chunks of concrete. Use forced air and/or a broom or hand brush to sweep the area down. Before attempting to seal joints in new asphalt, the asphalt must be given sufficient time to cool and to "cure," so that damage will not result from sawing. The time will depend upon a number of factors, such as mix design, time of year for placement, geographic location and past experiences. In repair or remedial work where previous sealant materials have failed, care should be taken to completely remove the failed sealant from the joint faces. A standard joint design is recommended in which the backer rod is slightly above the shelf. Oil contaminated cracks or when a primer is desired, can be treated with Allstates' **Poly Oil Sil® (ALT-602)** to improve adhesion.

Joint Application: Lightly stir or shake if in pail or jug being careful not to create air bubbles. In drums, circulate product for 5 minutes with dispensing equipment before application. Ready to use; apply using manual methods, syringe type apparatus, professional bulk caulking gun or dispensing equipment. A double diaphragm pump such as the Envirotx' Crac Shot™ is recommended for large volume applications. Do not open product container until preparation work has been completed. Apply sealant using consistent, positive pressure to force sealant into the joint from the bottom of reservoir ensuring no voids or air is trapped. Ensure a nozzle sized for the width of the joint reservoir is used to allow pumping to the bottom. Fill reservoir completely and apply the sealant so that it is flush with the pavement surface. **Flex Crete™** is self-leveling therefore, no tooling is needed (although tooling may improve ultimate seal and performance). Conduct a field test to document and confirm adhesion under actual jobsite conditions. At 77°F (25°C), 50% R.H. a durable skin will form within 20 minutes. **Flex Crete™** will cure under good conditions in 8 hours to 24 hours, depending on weather and size of reservoir. Additional curing time or a second application may be required for deeper reservoirs. **Flex Crete™** will stick to itself, making corrective repairs quick and easy. Just add additional product where you may have cohesive issues (be sure to fill the fissure completely) or need more sealant. Most products can't do that. In particular, silicone won't stick to itself (and nothing will stick to silicone).

Crack Application: Lightly stir or shake if in pail or jug being careful not to create air bubbles. In drums, circulate product for 5 minutes with dispensing equipment before application. Ready to use; apply using manual methods, syringe type apparatus, professional bulk caulking gun or dispensing equipment. A double diaphragm pump such as the Envirotx' Crac Shot™ is recommended for large volume applications. Do not open product container until preparation work has been completed. **Flex Crete™** does not require the use of saw cutting or backer rod installation on cracks. However it is imperative that the crack reservoir is filled from the bottom up and is completely full of sealant to avoid air pockets and cohesion loss. The use of a rubber V or U shaped squeegee will help ensure the complete filling of the reservoir and promote better adhesion. Fill crack completely. Before it sets up, scrape excess from surfaces using a rubber V or U-shape squeegee. Traffic can be returned to surface within 10-20 minutes. It is not necessary for product to be cured before releasing vehicular traffic. **Flex Crete™** will cure under good conditions in 8 hours to 24 hours, depending on weather and size of reservoir. Additional curing time or a second application may be required for deeper cracks. **Flex Crete™** will stick to itself, making corrective repairs quick and easy. Just add additional product where you may have cohesive issues (be sure to fill the fissure completely) or need more sealant. Most products can't do that. In particular, silicone won't stick to itself (and nothing will stick to silicone).

HANDLING AND LIMITATIONS:

- Keep from freezing.
- Do not use when temperature is below 45°F (7.3°C), raining (or in forecast), or when there is a chance of temperatures below 0°C (32°F) within twenty-four (24) hours of placement.
- Not recommended for continuous water immersion.
- Do not allow sealant to come in contact with solvent during cure.
- Do not store in direct sunlight or where temperatures exceed 100°F (37.8°C).
- Wash tools in water. Use paint thinner if material has dried.
- Do not apply to substrates other than concrete or asphalt.
- Envirotx' Crac Shot™ drum pump with "surge bottle" is highly recommended for use in large volume applications.
- For **COVERAGE estimation** purposes – up to 80 linear feet (24.38 M) of ½" X ½" (12.7 mm X 12.7 mm) depth reservoirs.
- **Prior to use, the user should read and follow Envirotx' CONCRETE Joint and Crack Sealing Basics to verify proper product selections, application equipment, pavement preparation procedures, application geometry, usage precautions and safety procedures. These instructions may be obtained from Envirotx Co.**

WARRANTY: This information is to assist customers in determining if this product is suitable for the proposed application. Envirotx Co. warrants its Sealants to be free of defects in material, but makes no warranty as to appearance or color. Since method of application and on-site conditions are beyond our control and can affect performance, Allstates makes no other warranty, expressed or implied, including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, with respect to Sealants. Envirotx' sole obligation shall be at, its option, to replace, or to refund the purchase price of the quantity of Sealant proved to be defective and Allstates shall not be liable for any loss or damage.