

## Elastomeric Dry-Set Mortar and Anti-Fracture Membrane

### PRODUCT DESCRIPTION

UniFlex® 916 is a technological breakthrough in the development of a truly elastomeric dry-set mortar for the installation of ceramic tile and dimension stone. UniFlex 916 is composed of a unique synergism of latex polymers and Portland cement. UniFlex 916 may also be used as an elastomeric anti-fracture membrane for the installation of ceramic tile, marble, slate and granite over a variety of surfaces.

UniFlex 916 is trowel applied to develop an elastic membrane that is designed to prevent existing cracks in the substrate from transferring through the tile installation. Due to its excellent flexibility, UniFlex 916 allows the installation of hard surfaces to substrates subject to vibrations and deflection up to 1/240 of the span.

### ► AREAS OF USE

UniFlex 916 can be used on floors and walls or anywhere a water resistant elastomeric setting material is desired for the installation of ceramic tile and stone surfaces on interior or exterior applications.

Suitable backings, when properly prepared include: cured Portland cement mortar beds, existing ceramic tile, concrete slabs, plastic laminate countertops, concrete block, steel decking and cementitious backer units. UniFlex can also be used to set tiles and stone over existing clean, vinyl flooring if they are well bonded to the substrate. See C-Cure Technical Bulletin #102 for application over prepared old cutback adhesives (*in dry above grade areas*). Exterior grade plywood (EGP) and gypsum board are suitable substrates in dry interior areas only. Certain high compressive strength gypsum mortar beds are also suitable substrates when properly prepared (*see C-Cure Technical Bulletin #104*).

When used as a crack suppressant elastomeric membrane, UniFlex 916 allows installations over properly prepared shrinkage cracks as described in this product information sheet.

### ► LIMITATIONS

UniFlex 916 must not be applied directly over asphalt sheeting, vinyl covered wallboard, cushion backed flooring, perimeter bonded vinyl flooring, Masonite®, cement asbestos board, metal (*excluding steel decking*) or glass. Improperly cured or wet plywood, Luan plywood, particle board or stripwood surfaces are not considered suitable substrates. Do not apply to surfaces below 40°F (4°C). Keep above 40°F (4°C) for at least 72 hours after application to allow for proper cure. Do not apply over wet surfaces or surfaces subject to hydrostatic pressure. Because of its soft nature, marble should not be installed over substrates with deflection in excess of 1/720 of the span. Never apply UniFlex 916 over

3/16" (4.8 mm) thick. UniFlex 916 is not to be used as a wearing surface. Some green or red marbles may warp when installed with setting materials containing water, causing loss of bond and/or damage to the finish. These marbles must be set with COLORSET EPOXY 931.

### ► APPLICABLE STANDARDS

UniFlex 916 may be used in installations that must conform to ANSI A108.5. Detailed installation procedures may be found in the TCA Handbook.

Colors — White or Gray.

Texture — Powder, consisting of Portland cement, graded aggregate, organic and inorganic chemicals and a free-flowing liquid.

### ► PACKAGING

**2 Gallon (7.6 L) Unit consists of:**

1 gal. (3.8 L) UniFlex 916 liquid and 12½ lbs. (5.7 kg) UniFlex 916 powder.

**4 Gallon (15.1 L) Unit consists of:**

2 gal. (7.6 L) UniFlex 916 liquid and 25 lbs. (11.4 kg) UniFlex 916 powder.

## INSTALLATION

### ► PREPARATORY WORK

All surfaces on which tiles are to be set must be dry, structurally sound, and not subject to temperatures below 40°F (4°C) or above 100°F (38°C). Surfaces must be clean, free of oil, grease, dirt, efflorescence, loose material, curing compounds, sealers and wax.

### ► CEMENTITIOUS SUBSTRATES

Cleaning may be accomplished via mechanical sanding, scraping or chipping. Surfaces may be cleaned with muriatic acid if thoroughly flushed and neutralized. (Use proper precautions.) Smooth, steel troweled concrete floors must be roughened to ensure a good bond. It is advisable to dampen dry porous concrete before installing ceramic tile with UniFlex mortar. Do not leave puddles or standing water on surfaces. Substrate deflection should not exceed 1/240 of the span.

### ► PLYWOOD SUBSTRATES

All wood flooring, when placed over conventional floor joist or other systems should be of a design and thickness so as to maintain a substrate of deflection not to exceed 1/360 of span, including live and dead load. Further, the flooring to receive the UniFlex mortar should be exterior grade plywood only, secured with screw-type nails and glued where possible. A gap of 3/16" (4.8 mm) shall be left between sheets of plywood and between the plywood edges and all materials which they abut to allow for expansion. These gaps shall remain empty when the installation is complete. All wooden surfaces must be for interior use (floor and countertop) only and protected from exposure to water.

### ► NON-CEMENTITIOUS SUBSTRATES

Surfaces such as stripwood and old plaster or painted surfaces that provide bonding problems should be covered with a cleavage membrane topped with a 3/8" to 3/4" (9.5 to 19 mm) reinforced mortar bed for walls and a 1¼" (31.8 mm) reinforced mortar bed for floors. After a minimum of 20 hours, the dry-set mortar may be applied to the mortar bed. Plastic laminate shall be sanded and well bonded to its substrate. It is also necessary to abrade the surface to assure proper bonding.

### ► STEEL DECKING SUBSTRATES

Surfaces must be dry, clean, free of oils, grease, coatings, rust and any other foreign matter. Cleaning may be accomplished via mechanical sanding, scraping, chipping, sand or shot blasting.

### ► CERAMIC TILE SUBSTRATES

It is absolutely essential that the existing tile be well bonded. The surface must be prepared in accordance with the requirements for cementitious surfaces. It is also necessary to abrade the surface to assure proper bonding.

## APPLICATION

### ► MIXING

The correct mixing ratio is 1 gallon (3.8 L) of UniFlex 916 Liquid for each 12½ lbs. (5.7 kg) of UniFlex 916 Powder. Add the liquid to a clean bucket first, then add the powder very slowly. The powder should be added at a very slow rate, as if it were being poured through a funnel while mixing. Let the mix slake for 10 minutes, then remix. Do not use mechanical mixers at speeds greater than 300 RPM to avoid entrapment of air. Do not add water, more liquid, powder or any other material to this mix.

### ► CRACK TREATMENT

For isolation of shrinkage cracks less than 1/8" (3 mm) wide proceed as follows:

UniFlex 916 can be used to bond tile directly over the crack. First fill the crack by compressing the UniFlex 916 Mortar into the cracks with the flat side of the trowel. Then follow the directions for usage as a dry-set mortar.

When used as a crack isolation membrane, compress the UniFlex 916 into the crack. Then with a flat trowel, key-in the UniFlex 916 into the adjacent substrate. Next, comb the UniFlex 916 with a 1/4" x 1/4" x 1/4" (6 x 6 x 6 mm) square-notch trowel and smooth with the flat side of trowel. Occasionally check to be sure the UniFlex 916 is being applied to a minimum thickness of 1/16" (1.6 mm) or 62 mils. Allow to cure 24 hours, then use one of C-Cure's polymer-modified dry-set mortars such as

MULTI-CURE® 905, PRO M-FLEX STRATA® 914, QUICK-CURE 908, PERMA-BOND® 902 mixed with CURE-CRYLIC® PREMIUM 939 or more UNIFLEX 916 over the UNIFLEX as the tile bonding mortar.

For crack isolation, using either of the above methods, UNIFLEX 916 shall be applied over the crack and extending a minimum of the diagonal measurement of the tile to be installed or one (1) foot (30 cm), whichever is greater on both sides of the crack.

For cracks greater than 1/8" (3 mm), treat the same as construction joints.

**► CONSTRUCTION/EXPANSION/CONTROL JOINTS/ ISOLATION JOINTS**

Do not bridge these types of joints. Carry these types of joints through any subsequent finishing material. Follow installation procedures as outlined in the section EJ 171 in the TCA Handbook and ANSI A108.5.

**► AS A DRY-SET MORTAR**

UNIFLEX 916 may be used as a dry-set mortar to bond ceramic tile, stone, slate, and marble directly over acceptable substrates previously described while simultaneously providing an elastomeric, anti-fracture membrane. UNIFLEX may also be used over precast or prestressed concrete slabs in high-rise buildings.

Mix the UNIFLEX 916 as described previously and spread a thin layer of mortar with the flat side of the trowel to key mortar into the substrate; then apply additional mortar to a depth sufficient to be notch with a suitable trowel to give 100% contact with the back of the tile and subsequent mortar bed of 3/32" to 3/16" (2.4 to 4.8 mm) after embedding. With high lug tiles, "back buttering" may be required to ensure 100% coverage of back of tile. During the setting of tile, it is advisable to occasionally remove a tile to be sure the UNIFLEX 916 has not skinned over and sufficient transfer is being made. Do not adjust tiles after they have been set past 20 minutes.

When using as a mortar for marble, set several pieces in the UNIFLEX 916 and allow to dry 16 hours to test for any bleed through or discoloring.

NOTE: When setting vitreous or impervious tiles over non-porous substrates, use Fast Setting UNIFLEX 916 Powder to prevent extended time needed for curing.

**► CLEANING**

Tools and tiles should be cleaned as soon as possible with water while the UNIFLEX 916 is fresh.

**► WARRANTY**

UNIFLEX 916 is included in C-Cure's 5 Year and 10 Year System Warranties. For terms and conditions see Warranty Documents #WRTDS and #CCW10.

# UniFlex 916

## Elastomeric Dry-Set Mortar and Anti-Fracture Membrane

UNIFLEX 916 TECHNICAL DATA		
TEST	TYPICAL VALUES	
A. Appearance	White or gray sanded powder with off white liquid	
B. Density	10.4 lbs./gal. (4.7/3.78 L)when mixed	
C. Pot Life	6 Hours	
D. Skin Time	20 Minutes	
E. Working Time	Approximately 60 minutes	
F. Open to Traffic	48 hours for grouting; 72 hours for light foot traffic; 7 days for heavy traffic.	
G. Curing Temperature	40 - 120°F (4 - 50°C)	
H. Hardness	30 Shore "D"	
I. Elongation ASTM D751	>190%	
J. Tensile Strength ASTM D751	>120 psi (8.44 kg/cm <sup>2</sup> )	
K. Bond Strength to Paver Tile ANSI A118.4* 28 Day	400 psi (28.13 kg/cm <sup>2</sup> )	
L. Safety—CAUTION: LIQUID: Avoid inhalation of vapors, use in well ventilated areas. Avoid contact with eyes, flush with water and call physician immediately; for skin contact, wash with warm, soapy water. If material is swallowed, call physician immediately. POWDER: May cause eye, skin or lung injury. Contains free silica. Prolonged exposure to dust may cause delayed lung disease (silicosis). Eliminate exposure to dust. Use NIOSH approved mask for Silica dust. Contains Portland cement. If any cement or cement mixtures get into eye, flush immediately and repeatedly with water, and consult a physician promptly. Freshly mixed cement, mortar, concrete or grout may cause skin injury. Avoid contact with skin where possible and wash exposed skin areas promptly with water.		
KEEP OUT OF REACH OF CHILDREN		
M. Storage Life—One year if kept dry in sealed containers in temperatures of 40°F - 90°F (4°C - 32°C). Keep UNIFLEX LIQUID from freezing.		

\*ANSI A118.4 Shear Bond Test cannot be completed to bond failure as directed due to the unique elastomeric properties of UNIFLEX 916.

COVERAGE		
PRODUCT	SQUARE FEET (M <sup>2</sup> ) PER GALLON (3.8 L)	
	1/16" Thickness (1.6 mm)	3/32" Thickness (2.4 mm)
UNIFLEX® 916	25 (2.32)	17.5 (1.63)

**GUARANTEE**

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Materials & Methods Standards Association, Ceramic Tile Distributors Association.

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