ColorSet Epoxy 931

Chemical Resistant Water Cleanable Tile Setting and Grouting Epoxy

PRODUCT DESCRIPTION

ColorSet Epoxy 931 is a patented 100% solids blend of epoxies and silica fillers. It is to be used for the setting and grouting of ceramic tile and pavers over a wide variety of substrates, interior or exterior. It produces a mortar that is stain resistant, impermeable, high in strength and shock resistant. ColorSet Epoxy 931 has exceptionally high resistance to acids, alkalies and most solvents.

BASIC USE

ColorSet Epoxy 931 can be used as both a setting and grouting mortar for virtually any tile available, including green marble. It may be used for both floor or wall installations in a mortar as thin as 1/16" to 1/8" (1.6 mm to 3 mm) after tiles have been properly embedded. It is water cleanable before curing, non-flammable and easy to work. ColorSet Epoxy 931 is not affected by prolonged contact with water, but does not necessarily form a waterproof barrier unless special precautions are taken to maintain a continuous film of epoxy mortar 3/32" (2.4 mm) thick with no gaps.

AREAS OF USE

Suitable backings, when properly prepared, include plumb and true masonry, concrete, cured Portland cement mortar beds, brick, ceramic tile, cementitious backer units, steel, glass and fiberglass. Areas of particular use are in industrial plants, particularly chemical and food processing plants such as dairies, breweries, bottling plants and textile and metal finishing plants, where the use of acids, alkalies, solvents, strong detergents and other chemicals cause erosion and damage to the setting beds and grout joints. Other areas include hospitals, restaurants, food preparation areas and similar installations where clinical sanitation is maintained by harsh cleaning methods —countertops, backsplashes, tub and shower areas, sunken tile tubs and swimming pools— requiring a completely waterproof system.

LIMITATIONS

ColorSet Epoxy 931 should not be used in an environment with requirements above 250°F (121°C) for any extended period of time and must be mixed and used exactly as directed on labels. When used to install tile in an area that will be continually wet (*e.g. swimming pools, gang showers, etc.*), it is recommended that the complete installation shall be cured a minimum of three (3) days prior to water exposure. A thoroughly dry, full cure of 14 days is necessary prior to full submersion with chemically treated water. Epoxy, epoxy residue, or wash water will discolor painted or anodized surfaces upon contact. Protect or prevent these surfaces from exposure. Vertical grout joint width shall not exceed 3/16" (5 mm). ColorSet Epoxy 931 shall be tested for possible staining or slight color changes when used with porous, absorptive, textured tile and stone units such as rough textured ceramic tile, natural stone or marble.

APPLICABLE STANDARDS

Conforms to requirements for chemical-resistant, water cleanable tile setting and grouting epoxy found in ANSI A108.6 and ANSI A118.3.
Colors — 17 standard colors.
Texture — Two components (A & B) consisting of paste-like materials. Colored curing agent (hardener, Part A) and a liquid resin/ silica sand (Part B) packaged by weight to form a plastic mortar when combined. C-Cure's ColorSet Epoxy 931 is protected under the rights and privileges of U.S. patent #5362322.

PACKAGING

Contractor Unit Consists of — Part A: One 2.25 lb. (1.02 kg) container of pigmented liquid epoxy hardener; PLUS Part B: one 25.2 lb. (11.43 kg) liquid epoxy resin combined with silica filler.
1 Gallon (3.8 L) Unit Consists of — Part A: Two 0.6 lb. (0.28 kg) containers of pigmented liquid epoxy hardener PLUS Part B: one 12.6 lb. (5.72 kg) container of liquid epoxy resin combined with silica filler.
1/2 Gallon (1.9 L) Unit Consists of — Part A: One 0.6 lb. (0.28 kg) container of pigmented liquid epoxy hardener PLUS Part B: one 6.3 lb. (2.86 kg) container of liquid epoxy resin combined with silica filler.

INSTALLATION

PREPARATORY WORK

All surfaces on which tiles are to be set must be dry, structurally sound, and not subject to temperatures below 65°F (18°C) or above 95°F (35°C). Detailed installation procedures and use of epoxy mortars may be found in the TCA Handbook under F-114, F-115, F-116, F-143, F-131, F-132, TR-911 and TR-912 and in addition, in ANSI A108.6. Surfaces must be dry and free of all grease, oil, dirt, dust, curing compounds, sealers, coating, efflorescence, old adhesive residues, gypsum based underlayments and any other foreign matter.

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 superior bond. Dry porous concrete should not be pre-dampened with water before applying ColorSet Epoxy 931 mortar. Instead, skim-coat a thin layer of epoxy mortar first, then apply sufficient mortar to be notch.

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 deflection not to exceed 1/360th of the span, including live and dead load. Further, the flooring to receive the ColorSet Epoxy 931 mortar should be exterior grade plywood only, secured with screw-type nails and glued where possible. A gap of 3/16" (5 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. Force epoxy between edges of plywood sheets to completely fill the gaps. Treat perimeters and abutments as expansion joints. In addition, all wooden surfaces must be for interior use only and protected from exposure to water.

MISCELLANEOUS SUBSTRATES

Other substrates like existing ceramic tile, steel, glass and fiberglass must all be free of all oils, coatings, dust and moisture. In addition, these surfaces should be roughened to ensure a good bond. It is also absolutely essential that the existing surface be structurally sound and firmly attached to the supporting structure..

CONSTRUCTION/EXPANSION/ CONTROL/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 EJ171 in the TCA Handbook ANSI A108.5.

MIXING

For all units, open Part B and stir to eliminate the effects of settling due to shipping. Add the entire contents of the pigment Part A to Part B and stir to produce a homogeneous consistency eliminating any color streaks from appearing in the mixed unit. If a power mixer is used, it must be 300 RPM or less to avoid entrapping air bubbles which cause pinholes in the grout. Do not overmix as this will cause the epoxy to flash set.

APPLICATION FOR SETTING

Spread mortar with flat side of trowel to key into substrate. Then, reapply additional mortar to a depth sufficient to be notched with a suitable trowel that will leave only enough mortar to give 100% contact with back of the tile and a subsequent mortar bed of 1/16" (1.6 mm) for ceramic mosaic tile to 1/8"(3 mm) for quarry tile. Temperature affects set time; therefore, it is advisable to occasionally remove a tile to be sure mortar has not skinned over and sufficient transfer is being made. Approximate tack time is 30 minutes at 75°F (24°C). Pot life is approximately 45 minutes at 75°F (24°C). It is also required that tiles be embedded to obtain good transfer of mortar to tile and for proper alignment. Should epoxy mortar get on surface of tile, it will be necessary to remove it with a damp sponge before it cures.

NOTE: As a practical test, it is recommended that three (3) or more separate 12" square (.3m²) areas of tile be bonded to the properly prepared surface with the actual tile and bonding materials that will be used on the finished installation. These should be allowed to cure for three (3) to seven (7) days and then removed with a hammer and chisel. At this point, one can determine if adequate bond has been obtained or if a problem exists. Epoxy residue should not be allowed to cure on unintended surfaces (*e.g. painted, wall papered, carpeted, wood, concrete, masonry and stucco surfaces*).

APPLICATION FOR GROUTING

It is important to achieve 100% coverage with no voids when setting tiles to prevent pin holes and slumping of epoxy grout joints. Allow tiles to set firmly before grouting (1 - 2 days). Mix grouting mortar in same fashion as outlined for setting mortar. Remove grout from container and spread out over surface to be grouted as soon as mixing is completed. Apply grout using a hard rubber float filling all joints full and

evenly with surface of tile. Grout vertical surfaces as soon as possible after mixing. Remove all excess epoxy from surface of tile with the rubber float before it begins to set by turning the float perpendicular to the tile surface and using it as a squeegee. Clean the remaining grout off the surface of the tile using clean water only (*e.g. do not use any acid based products*) and a Scotch-Brite™ pad or a stiff sponge with rounded edges. Special care should be taken to avoid removing excessive material from the grout joint during cleaning as ColorSet Epoxy 931 will still be very soft. As a final step, clean any remaining film off the tile surface by dragging with a clean, damp terry cloth towel.

NOTE: On porous or rough tiles, sealing with a grout release may be necessary to prevent staining. Try a test patch to be sure. Epoxy and epoxy wash residue should not be allowed to dry on painted, anodized and thin metal-plated surfaces. Clean uncured materials from these s urfaces immediately with soap and water.

CURING

Protect setting material and grout one (1) day from light traffic and three (3) days from heavy traffic. Protect from harsh industrial cleaners for seven (7) days and from chemicals for 14 days. Initial maintenance for the first seven (7) days shall be accomplished using clean water only. If haze is present the day following grouting, it must be removed with clean water only. All grouting and cleaning should be completed within 80 minutes. Contact Technical Services or refer to the website for instructions regarding removal of cured or hard epoxy. (Technical Bulletin 118.)

WARRANTY

ColorSet Epoxy 931 is included in C-Cure's Five and Ten Year System Warranties. For terms and conditions see Warranty Documents #WRTDS and #CCW10.

GUARANTEE

The recommendations, suggestions, statements and technical data are based on the best knowledge available to C-Cure and are given for informational purposes ONLY and without any responsibility for their use.

C-Cure MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE PRODUCT SOLD HEREIN except that the quality of the ingredients shall be in accordance with C-Cure specifications. It is expressly understood and agreed that the buyer's sole and exclusive remedy shall be replacement of defective products and under no circumstances shall C-Cure be liable for incidental or consequential damages. C-Cure neither assumes nor authorizes any others to assume for it any liability with respect to furnishing of the product. Handling and use of the product are beyond the control of C-Cure, therefore, no warranty is made, expressed or implied, as to the results obtained from the use of the product or against any claims for infringement of patents resulting from the use of the product.

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COLORSET EPOXY 931 TECHNICAL DATA

TEST		REQUIREMENT	TYPICAL VALUES
A. Water Cleanability		80 Minutes	>80 Minutes
B. Initial Set at 75°F (24°C)		>2 1/2 hours	>2 3/4 hours
C. Shrinkage	7 Days	<0.25%	<0.20%
D. Sag (Vertical joint)		NONE	NONE
E. Bond Strength Vitreous Tile	14 Days	>1000 psi (70.3 kg/cm²)	>1800 psi (126.6 kg/cm²)
F. Compressive Strength	7 Days	>3500 psi (246.1 kg/cm²)	>10,000 psi (703.2 kg/cm²)
G. Tensile Strength	7 Days	>1000 psi (70.3 kg/cm²)	>2500 psi (175.8 kg/cm²)
H. Thermal Shock	7 Days	>500 psi (35.2 kg/cm²)	>950 psi (66.8 kg/cm²)
I. Chemical Resistance—Excellent for most solvents, acids, and alkalies. C-Cure can provide specific chemical resistance on request.			
J. Safety—CAUTION: 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. For continuous work, wear rubber gloves or other protective clothing as required. Avoid contact with skin where possible and wash exposed skin areas promptly with water.			
KEEP OUT OF REACH OF CHILDREN.			
K. Storage Life—One year if kept in sealed containers. Keep from freezing.			

COVERAGE

PRODUCT	SQUARE FEET (M²) PER 1 GALLON (3.78 L)	
	3/16" x 1/4" (5 x 6 mm) V-Notch Trowel	1/4" x 1/4" x 1/4" (6 x 6 x 6 mm) Square-Notch Trowel
ColorSet Epoxy 931	36 (3.34)	22 (2.04)

GROUT COVERAGE REQUIREMENTS

TILE TYPE	TILE SIZE	JOINT WIDTH	NUMBER OF UNITS OF ColorSet Epoxy REQUIRED PER 100 SQ. FT. (9.29 M²)		
			1/2 Gal. (1.9L)	1 Gal. (3.8L)	2 Gal. (7.6L)
Wall Tile	4 1/4" x 4 1/4" x 5/16"	1/16" (1.6 mm)	1.1	0.6	0.3
Ceramics	1" x 1" x 1/4"	1/16" (1.6 mm)	6.5	3.3	1.6
	1" x 2" x 1/4"	1/16 "(1.6 mm)	5.1	2.5	1.3
	2" x 2" x 1/4"	1/16" (1.6 mm)	3.6	1.8	0.9
Floor Tile	4" x 4" x 1/2"	1/4" (6.4 mm)	7.1	3.6	1.8
		3/8" (9.5 mm)	10.2	5.1	2.6
	4" x 8" x 1/2"	1/4" (6.4 mm)	5.4	2.7	1.4
		3/8" (9.5 mm)	7.8	3.9	2.0
	6" x 6" x 1/2"	1/4" (6.4 mm)	4.8	2.4	1.2
		3/8" (9.5 mm)	7.1	3.6	1.8
	8" x 8" x 3/8"	1/4" (6.4 mm)	2.8	1.4	0.7
		3/8" (9.5 mm)	4.1	2.1	1.1
	10" x 10" x 3/8"	1/4" (6.4 mm)	2.3	1.1	0.6
		3/8" (9.5 mm)	3.3	1.7	0.9
	12" x 12" x 3/8"	1/4" (6.4 mm)	1.9	0.9	0.5
		3/8" (9.5 mm)	2.8	1.4	0.7
	13" x 13" x 3/8"	1/4" (6.4 mm)	1.6	0.8	0.4
		3/8" (9.5 mm)	2.6	1.3	0.7
	16" x 16" x 3/8"	1/4" (6.4 mm)	1.5	0.7	0.4
		3/8" (9.5 mm)	2.0	1.0	0.5
Floor Brick	3 7/8" x 8" x 3/4"	1/4" (6.4 mm)	8.0	4.0	2.0
	3 7/8" x 8" x 1 3/8"	1/4" (6.4 mm)	15.0	7.5	3.8

This chart is for estimating how much product is needed for a given tile installation. These figures are based on filling the joints to their full depth with no waste.

Members of National Tile Contractors Association, Materials & Methods Standards Association, Ceramic Tile Distributors Association.

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