

Starting Formulation

SF 5009

Epoxy Modified, Portland Cement Adhesive Mortar for Concrete EPI-REZ™ Resin WD-510 / EPIKURE™ Curing Agent 3046

Introduction This adhesive mortar formulation illustrates the use of a water-dispersible epoxy resin system in conjunction with Portland Cement to combine superior adhesion in thin mortar joints with long working life, ease of application, and water clean-up. The components are easily mixed on the job-site by either hand or motor-powered agitation and applied from a conventional barrel-type caulking gun. Two 3/16 inch beads will bond precision ground masonry block firmly and permit one worker to lay approximately three times the number of blocks laid with conventional mortar. This adhesive may be applied in slightly thicker beads to bond self-aligning (interlocking) block.

Formula	Material	Supplier	Pounds	Gallons
Formulation				
Resin Portion				
	EPI-REZ Resin WD-510	Hexion	100.0	10.36
Converter Portion				
	EPIKURE Curing Agent 3046	Hexion	48.0	6.14
Water Portion				
	Tap Water		74.0	8.89
Cement Portion				
	White Portland Cement, Type 1		<u>360.0</u>	<u>13.00</u>
	Total Formulation		582.0	38.39

Mixing Instructions Combine the resin and converter in the designated ratio and blend thoroughly. Add the water and mix with the resin/converter blend to form a uniform emulsion. Mechanical agitation, such as provided by an electric drill motor equipped with a "Jiffy" agitator, is preferred. Add the cement to the emulsified epoxy system and disperse thoroughly with continued agitation. Load the soft paste mix into a barrel-type caulking gun for convenient dispensing.

Application Instructions Bed the first course of precision-sized block in conventional mortar and level to 1/16 inch maximum tolerance. Place the masonry blocks on end, butted together, and apply two 3/16 inch beads of this formulation to the head joints, approximately 3/4 inch from the outer edge. A barrel-type caulking gun equipped with a 3/16 inch nozzle works well for dispensing this adhesive mortar.

Apply 3/16 inch beads to the bed joints on the first course in a similar manner, and place the second course of blocks tightly into position. The resulting bed and vertical joints will be 1/16 inch or less. Continue to lay additional courses of block in this manner. Once the mortar has attained an initial set, the excess can be removed from the face of the block with the edge of a trowel.

Typical Handling Properties Table 1 / Handling Properties

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	<u>Units</u>	<u>Value</u>
Denisty	lbs/gal	15.2
Form		Soft Paste
Expected Pot Life at 25 °C, 1 quart ¹	hrs	3
Curing Schedule at 25 °C ²		
Coating Set Time	hrs	6
Initial Cure	hrs	16
Full Cure	hrs	72

equipped with ¹ Time after mixing during which the adhesive mortar may be dispensed easily from a barrel-type caulking gun a 3/16 inch nozzle and form a strong bond.
² Cured at 25 °C with 1/16 inch thickness.

Typical Cured State Properties Table 2 / Cured State Properties ¹

	Age of Mortar Prior to Application, minutes	Rupture Force, psi
Crossed-Brick Bond ²		
After 24 hours at 25 °C and 50% R.H.	5	250
	60	250
	180	250
Plus 7 Days Water Immersion ³	5	210
Plus 7 Days at 49 °C ⁴	5	220
Double Compressive Shear ⁵		
After 24 hours at 25 °C and 50% R.H.	5	550
Plus 7 Days Water Immersion ³	5	480

under a variety of application was also ¹ Bond Strength of the adhesive mortar to concrete (1/16-inch thick joints) was evaluated by two test methods of environmental conditions. Bond strength as a function of elapsed time from mixing of the mortar until evaluated, and the results demonstrate a useful working life in excess of three hours at 25 °C.

faces, ² Modification of ASTM C-321-64 in which two 2" x 2 1/4" x 3 5/8" blocks were bonded on the two inch wide uncut bonded area. centering the blocks with the long axis at right angles. A tensile bond force was applied to the 4 square inch

³ Tested wet.

⁴ Cooled and tested at 25 °C.

raised to form ⁵ Three 2" x 2 1/4" x 3 5/8" blocks were bonded on the two inch wide parallel, uncut faces with the center block

66-F-44). ²" overlaps. A compressive load was applied to the center block (reference California State Highway Specification

Storage Recommendations regarding storage conditions can be obtained by visiting our web site

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Safety, Storage & Handling

Please refer to the MSDS for the most current Safety and Handling information.

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