

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	<u>Material</u>	<u>Supplier</u>	<u>Pounds</u>	<u>Gallons</u>
	Formulation			
	Resin Portion			
	EPI-REZ Resin WD-510	Westlake Epoxy	100.0	10.36
	Converter Portion			
	EPIKURE Curing Agent 3046	Westlake Epoxy	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 Table 1 / Handling Properties

Generated: March 29, 2024
Issue Date:
Revision:

© and ™ Licensed trademarks of Westlake Inc.

DISCLAIMER

The information provided herein was believed by Westlake. ("Westlake") to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Westlake are subject to Westlake's terms and conditions of sale. WESTLAKE MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY WESTLAKE, except that the product shall conform to Westlake's specifications. Nothing contained herein constitutes an offer for the sale of any product.

Properties

	Units	Value
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

¹ Time after mixing during which the adhesive mortar may be dispensed easily from a barrel-type caulking gun equipped with 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

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

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 faces, centering the blocks with the long axis at right angles. A tensile bond force was applied to the 4 square inch bonded area.

³ Tested wet.

⁴ Cooled and tested at 25 °C.

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

Generated: March 29, 2024
Issue Date:
Revision:

© and ™ Licensed trademarks of Westlake Inc.
DISCLAIMER

The information provided herein was believed by Westlake. ("Westlake") to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Westlake are subject to Westlake's terms and conditions of sale. WESTLAKE MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY WESTLAKE, except that the product shall conform to Westlake's specifications. Nothing contained herein constitutes an offer for the sale of any product.

Storage Recommendations regarding storage conditions can be obtained by visiting our web site at www.westlakeepoxy.com

General Information

These are starting formulations and are not proven in the user's particular application but are simply meant to demonstrate the efficacy of the products and to assist in the development of the user's own formulation. It is the user's responsibility to fully-test and qualify the formulation, along with the ingredients, methods, applications or equipment identified herein ("Information"), by the user's knowledgeable formulator or scientist, and to determine the appropriate use conditions and legal restrictions, prior to use of any Information.

Safety, Storage & Handling

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

Exposure to these materials should be minimized and avoided, if feasible, through the observance of proper precautions, use of appropriate engineering controls and proper personal protective clothing and equipment, and adherence to proper handling procedures. None of these materials should be used, stored, or transported until the handling precautions and recommendations as stated in the Material Safety Data Sheet (MSDS) for these and all other products being used are understood by all persons who will work with them. Questions and requests for information on Westlake Epoxy products should be directed to your Westlake Epoxy sales representative, or the nearest Westlake Epoxy sales office. Information and MSDSs on non-Westlake Epoxy products should be obtained from the respective manufacturer.

Contact Information

For product prices, availability, or order placement, please contact customer service:

www.westlakeepoxy.com/Contacts/

For literature and technical assistance, visit our website at www.westlakeepoxy.com

Generated: March 29, 2024
Issue Date:
Revision:

® and ™ Licensed trademarks of Westlake Inc.

DISCLAIMER

The information provided herein was believed by Westlake. ("Westlake") to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Westlake are subject to Westlake's terms and conditions of sale. WESTLAKE MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY WESTLAKE, except that the product shall conform to Westlake's specifications. Nothing contained herein constitutes an offer for the sale of any product.