

KEMKO® 059 LoMod Paste

Low Modulus,
Toughened Epoxy
Paste Adhesive for
Bonding

Type:	Two-component, solvent-free, epoxy resin / hardener.
Primary Use:	Filling spalls, cracks, gaps and voids in concrete, masonry, stone and steel. Fairing and leveling uneven surfaces. Bonding preformed or elastomeric polymer products to rigid construction materials. Applications requiring resistance to thermal cycling and mechanical shock. Meets ASTM C881, Type III, Grade 3.
Substrates:	Concrete (dry, damp and wet), masonry, stone and steel. Suitable for horizontal, vertical and overhead application.
Minimum Temp:	Installation: 40° F, (substrate temperature).
Color:	Opaque amber (unpigmented).
Shelf Life:	Three years minimum in sealed containers (see below for conditions).

The properties listed in this bulletin are typical and descriptive of the product and should not be used for specification purposes. For specification preparation, reference the specification of this product available from ChemCo Systems, Inc. This product is available only through KIP System (KEMKO Injection Process) licensee/applicators.

Description: KEMKO® 059, LoMod Paste is a two-component, low modulus, epoxy paste adhesive designed for application on horizontal, vertical and overhead surfaces. Primary uses include the filling of spalls, cracks, gaps and voids in and bonding of dissimilar materials to concrete, masonry, stone and steel. The product is ideally suited for bonding preformed polymer materials, e.g., polyurethane and rubber mats, neoprene pads and PVC sheets to rigid construction materials. KEMKO 059 bonds to dry, damp and wet substrates and can be applied up to 1/4 inch thick without sag or flow. The components do not contain volatile organic compounds (VOC's).

Features: The low modulus and stress relaxation properties of KEMKO 059 allow its use in bonding and spall repair applications requiring resistance to freeze/thaw and thermal cycling and large changes in ambient temperatures. Exceptional substrate wetting makes possible the adhesion of many difficult to bond materials (e.g., preformed polymer products) to rigid construction Substrates. The product has a convenient 2:1 (by vol.) mix ratio and similar component viscosities for ease of proportioning and mixing.

Limitations: The recommended minimum substrate temperature during installation and cure is 40 °F. KEMKO 059 is not recommended for use as a rigid materials bonding agent in applications subjected to substantial and sustained shear stresses that may cause creep. Do not add solvents or otherwise thin this material.

Packaging: Standard package sizes of Part A + Part B are 15 and 150 gallon units.

Shelf Life: Three years minimum in unopened, original containers when stored between 60 and 90 °F in a dry place away from sunlight. Remixing of components may be required upon prolonged storage.

Chemical Resistance: KEMKO 059 has excellent resistance to a wide range of commonly encountered chemicals including acids and bases, aircraft and automotive fluids, petroleum fuels, cutting oils, etc. It has limited resistance to hydrocarbon solvents. Performance is a function of the specific chemical and concentration, ambient and solution temperature, exposure time and housekeeping procedures. For information on specific chemicals and exposure conditions, contact a ChemCo Systems, Inc., technical representative.

Color Selection: The standard color of the mixed components is opaque amber. Custom colors are available and may require minimum quantities and/or slightly higher cost.

Surface Preparation: Concrete surfaces may be dry or damp but must be sound and free of all bond-inhibiting substances. Prepare surfaces for bonding in accordance with *ASTM D 4259, "Standard Practice for Abrading Concrete,"* or *ACI 503R, Chapter 5, "Preparing Surfaces for Epoxy Compound Application,"* and ChemCo Systems, Inc.'s specific recommendations. Properly prepared concrete surfaces should have a minimum strength of 250 psi in direct tension. Steel surfaces should be cleaned to white metal according to SSPC SP 5. Successful bonding of dissimilar materials, particularly preformed polymer materials may require special surface preparation procedures to remove mold release agents and surface skins. Contact ChemCo Systems, Inc., for recommended procedures for bonding dissimilar materials.

Mixing: KEMKO 059 is a two-component adhesive. The resin to hardener (Part A:Part B) mix ratio is 2:1, by volume. Premix the individual components before drawing from bulk packaging. Wear safety glasses and rubber gloves when handling the material. Transfer the appropriate quantities of Part A and Part B into a mixing container. Use quantities that can be applied before the potlife of the material expires. Blend thoroughly using a Jiffy mixer blade attached to a low speed (350 - 750 rpm) electric or pneumatic drill. Proper mixing will take 2 - 3 minutes.

Installing: For spall repair, fairing and leveling applications, apply mixed material on the prepared substrate using a margin or finishing trowel. Fill wide cracks, gaps and voids by pumping or caulking the material into place. When bonding two solid surfaces, apply bonding agent to both surfaces. Establish contact between the surfaces using positive contact pressure. Maintain pressure until the adhesive has set. Remove excess material (squeeze-out) before the material sets. For additional application information, see *ACI 503R, Chapter 7, "Applying Epoxy Compounds."*

Clean Up: Excess mixed product is best removed from the work area and tools before it hardens. Use of rags and solvents such as acetone or heavy-duty detergents facilitate cleaning. Cured material may be removed from equipment by soaking in an epoxy stripper.



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Typical Properties (1)

Property		Test Method	Value
Mix Ratio, A:B,	by vol		2:1
	by wt		100:43
Color:	Part A	VISUAL	Opaque amber
	Part B		Opaque amber
	Mixed		Opaque amber
Weight per Gallon, lb:	Part A	ASTM D 1475	9.4
	Part B		8.2
	Mixed		9.1
Viscosity, poise:	Part A	ASTM D 2393	220
	Part B		80
	Mixed		175
Non-Sag Thickness, inches		ASTM D 2730	1/4
Gel Time, 200 g, minutes		ASTM D 2471	30
Bond Strength to ASTM C 109		ASTM D 4541	
Cement Mortar, psi:	dry substrate		Cement mortar failure (2)
	damp substrate		Cement mortar failure (2)

(1) Cure schedule, 7 days at 73° ± 4° F and test temperature, 73° ± 4° F.

(2) Compressive strength of cement mortar, 4500 psi.

Handling and Toxicity: This bulletin does not accompany the product when sold. For hazard warnings, safe handling and first aid instructions. **CAREFULLY READ THE MATERIAL SAFETY DATA SHEETS AND CONTAINER WARNING LABELS.**

Part A: Liquid epoxy resin, HMIS Health Hazard Rating- 2 (Moderate Hazard). Warning! Causes eye and skin irritation. May cause allergic skin reaction, Harmful if swallowed. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling, Avoid prolonged or repeated contact with skin.

Part B: Liquid epoxy hardener, HMIS Health Hazard Rating- 3 (Serious Hazard). Contains alkaline amines. Danger! Causes severe eye and skin burns, May cause allergic skin and respiratory reaction, Combustible, corrosive. Do not get in eyes or skin or on clothing, Avoid breathing vapor, keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Keep away from heat and open flame.

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