

KEMKO® 050 Slump IR

Epoxy Adhesive for
Pressure Injection
Slump Pump Grouting

-
- Type:** Two-component, solvent-free, epoxy resin / hardener.
- Primary Use:** Repair of slabs and walls where the opposite side cannot be sealed.
General repair of cracks and delaminations in concrete, masonry and wood.
- Substrates:** Concrete, masonry, stone (dry, damp and wet), steel and sealed wood.
- Minimum Temp:** Installation: 40° F, Cure- 40° F (substrate temperature).
- Applications:** Cracks, voids and delaminations up to 1/4" width; greater than 1/4" using "Slump" pumping' installation techniques.
- 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® 050, Slump IR is a two-component, low viscosity, epoxy adhesive specifically designed for pressure injection grouting using KIP System automatic meter, mix and dispense application equipment. Primary uses include the repair of cracks and delaminations in concrete, masonry, stone and sealed wood particularly on-grade and vertical substrates where sealing of the opposite side (for containment of the injection adhesive) is not possible. KEMKO 050 bonds to dry and damp substrates and does not contain volatile organic compounds (VOC's).

Features: KEMKO 050 is an economical epoxy adhesive with physical properties sufficient for most general repairs. The relatively short working life and comparatively high viscosity make this adhesive ideally suited for use in on-grade and vertical applications requiring 'slump pumping' pressure injection grouting procedures. In most instances, 'slump pumped' cracks can be re-injected after 40 - 50 minutes of cure time. Unlike many other high modulus epoxy adhesives, KEMKO 050 cures to a tough, resilient polymer with excellent load transfer capability. It has a convenient 2:1 (by vol.) mixing ratio and contains special colorants for contrasting component color.

Limitations: The recommended minimum substrate temperature during installation is 40 deg F. The minimum substrate temperature for cure is 40 deg F. The maximum in-service temperature should not exceed 20 deg F below the HDT in bonding applications subjected to substantial and sustained shear stresses that may cause creep. Due to viscosity and working life, KEMKO 050 is generally not recommended for pressure injection repair of fine cracks and delaminations, particularly at low substrate temperatures. Do not add solvents or otherwise thin this material.

Packaging: Standard package sizes of Part A + Part B are 3, 15 and 150 gallon units.

Shelf Life: Three years minimum in unopened, original containers when stored between 50 and 90 deg F in a dry place away from sunlight. Remixing of components may be required upon prolonged storage.

Color Selection: The standard color of the mixed components is dark purple. A clear amber color is available and may require minimum quantities and/or slightly higher cost.

Chemical Resistance: KEMKO 050 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 temperatures, exposure times and housekeeping procedures. For information on specific chemicals and exposure conditions, contact a ChemCo Systems, Inc., technical representative.

Surface Preparation: Concrete surfaces may be dry or damp but must be sound and free of all bond-inhibiting substances. Prepare cracks by blowing clean with oil-free compressed air or by flushing clean with an appropriate cleansing solution as required to remove foreign substances and contaminants. Prepare exposed 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.

Mixing: KEMKO 050 is a two-component adhesive designed specifically for use with KIP System automatic meter, mix and dispense application equipment. The resin to hardener (Part A: Part B) mix ratio is 2:1, by volume. The KIP System Guideline Specification includes provisions for routine periodic testing of the KIP System grouting equipment to determine that it is metering the components accurately and delivering thoroughly mixed material.

Installing: The KIP System, its products and equipment are only available from KEMKO licensee/applicators. KEMKO 050 is installed in accordance with KIP System Guideline Specification procedures and ChemCo Systems, Inc.'s specific recommendations. For additional information on repair by pressure injection grouting, see *ACI 503R, Chapter 7*, 'Applying Epoxy Compounds.' -

Clean up: All tools and equipment must be cleaned before the mixed material cures. Cleaning can be facilitated with a solvent such as acetone or heavy-duty detergents. Cured material may be removed from equipment and tools by soaking in an epoxy stripper.



ChemCo Systems, Inc.
2800 Bay Road
Redwood City, CA 94063
Ph 650-261-3790 Fax 650-261-3799
www.chemcosystems.com

Typical Properties (1)

Property	Test Method	Value
Mix Ratio, A:B,	by vol	2: 1
	by wt	100:45
Color:	Part A	Clear amber
	Part B	Dark purple
	Mixed	Dark purple
Weight per Gallon, lb:	Part A	9.5
	Part B	8.4
	Mixed	9.1
Viscosity, cp:	Part A	700
	Part B	150
	Mixed	500
Viscosity @ 40° F, cp:	Part A	5000
	Part B	600
	Mixed	2000
Gel Time, 100 g, minutes:	ASTM D 2471	28
	@ 40° F	7
	@ 73° F	
Tensile Strength, psi	ASTM D 638	6000
Elongation at Break, %	ASTM D 638	2
Compressive Yield Strength, psi	ASTM D 695	16,000
Compressive Modulus, psi	ASTM D 695	500,000
Flexural Strength, psi	ASTM D 790	11,000
Flexural Modulus, psi	ASTM D 790	450,000
Heat Deflection Temp, deg F	ASTM D 648	110
Wet Slant Shear Strength, psi (Cure schedule, 7 days @ 40° F)	AASHTO T-237	Cement mortar failure (2)

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

(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.

READ CAREFULLY 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- 2 (Moderate Hazard). Contains alkaline amines. Warning! Causes eye and skin irritation. 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.

DISCLAIMER: NO EXPRESS WARRANTY IS MADE WITH RESPECT TO THE RESULTS OF ANY USE OF THIS PRODUCT. NO IMPLIED WARRANTIES INCLUDING AND NOT LIMITED TO AN IMPLIED WARRANTY OF MERCHANTABILITY OR AN IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE ARE MADE WITH RESPECT TO THIS PRODUCT. NO LIABILITIES FOR PERSONAL INJURY, LOSS OR DAMAGE RESULTING FROM THE USE OF THIS PRODUCT IS ASSUMED. CHEMCO SYSTEMS, INC., RESERVES THE RIGHT TO ALTER OR DISCONTINUE THE PRODUCT DESCRIBED HEREIN AT ANY TIME AND WITHOUT PRIOR NOTICE.

KEMKO® and KIP System are trade names of ChemCo Systems, Inc.

Publication Number: 6 EP KEM-115L, Slump IR

Publication Date: Nov. 1995