

# KEMKO® 030 HI AMB IR

HIGH AMBIENT TEMPERATURE EPOXY ADHESIVE FOR PRESSURE INJECTION GROUTING

## TECHNICAL DATA SHEET

FOR PROFESSIONAL CONTRACTOR USE ONLY

KEMKO® 030, HiAmb IR is a two-component, low viscosity, structural, epoxy adhesive specifically designed for pressure injection grouting using Kemko Injection Process (KIP™) System automatic meter, mix and dispense application equipment. Primary uses include the structural repair of cracks and delaminations in concrete, masonry, stone and sealed wood; filling of voids in porous and honeycombed concrete and grout; adhesive bonding of steel plates (external reinforcement); and, anchoring bolts, dowels and rebar into concrete, masonry, or stone when the ambient air and/or substrate temperature at the time of installation is greater than approximately 90°F. Applications requiring material thickness in excess of 1/4 inch may be facilitated by pre-placing aggregate in the void. KEMKO 030 bonds to dry, damp and wet i.e. (free of standing water) substrates. The components do not contain volatile organic compounds (VOC's).

- Meets the requirements ASTM C 881 Type IV load bearing applications.

### FEATURES

The physical properties of the product allow its use in applications requiring resistance to creep and stress relaxation, maintenance of mechanical properties at high ambient temperatures, high load bearing strength and excellent adhesion under adverse application conditions, e.g., hot, humid environments. Unlike many other high modulus epoxy adhesives, KEMKO 030 cures to a tough, resilient polymer and has excellent load transfer capability. Exceptional substrate wetting and extended working life ensure penetration and filling of fine fissures and tributary cracks in warm environments. It has a convenient 2:1 (by vol.) mixing ratio and employs special colorants for contrasting component color.

### TYPICAL USES

- Applications where the ambient installation temperature is above 90°F, including:
- Structural repair of cracks and delaminations in concrete, masonry and wood.
- Filling of porous and honeycombed concrete and grout.
- Adhesive bonding of steel (external reinforcement).
- Anchoring bolts, dowels and rebar into concrete, masonry and stone

### LIMITATIONS

KEMKO 030 is recommended for installation when ambient /substrate temperatures are above 90°F, but may be installed at temperatures down to 50°F. (For installation temperatures between 50 and 90°F, consider use of KEMKO 038, Regular IR. For installation temperatures down to 40°F or when very narrow cracks are encountered, consider use of KEMKO 068, LoVis IR.. The minimum substrate temperature for cure is 50°F. The maximum in-service temperature should not exceed 20°F below the HDT in bonding applications subjected to substantial and sustained shear stresses that may cause creep. Installed thickness in excess of 1/4 inch may require the use of pre-placed aggregate to dissipate heat generated during the cure process. Do not add solvents or otherwise thin this material.

### TECHNICAL DATA<sup>1</sup>

PHYSICAL PROPERTIES	TEST METHOD	VALUE
Mix Ratio, A:B		2:1 by volume 100:43 by weight
Color: Part A Part B Mixed	VISUAL	Part-A: Clear Amber Part-B: Dark Purple Mixed: Dark Purple
Weight per Gallon: Part A Part B Mixed	ASTM D1475	9.4 lbs 8.1 lbs 9.0 lbs
Viscosity: Part A Part B Mixed	ASTM D2393	550 cp 110 cp 350 cp
Gel Time, 100 g	ASTM D2471	25 minutes
Tensile Strength	ASTM D638	9300 psi
Elongation at Break	ASTM D638	2.5%
Compressive Yield Strength	ASTM D695	15,600 psi
Compressive Modulus	ASTM D695	405,000 psi
Flexural Strength	ASTM D790	10,600 psi
Flexural Modulus	ASTM D790	320,000 psi
Heat Deflection Temp	ASTM D648	140°F
Wet Slant Shear Strength	AASHTO T-237	Cement mortar failure psi <sup>(2)</sup>

(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.

### PACKAGING

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

### SHELF LIFE AND SHIPPING

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.

## 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 030 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' technical representative.

## SURFACE PREPARATION

Substrate surfaces may be dry, damp, wet, immersed or submerged 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' 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. In underwater and tidal zone applications where cleaning of the substrate is possible, the product may have to be applied within a relatively short period of time (30 minutes to several hours) after substrate preparation to achieve a strong bond. Contamination of the concrete surface may negatively affect the bonding capability of the product.

## MIXING

KEMKO 030 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 motoring the components accurately and delivering thoroughly mixed material.

## INSTALLING

The KIP System, its products and equipment are only available from KEMKO licensee/applicators. KEMKO 030 is installed in accordance with KIP System™ Guideline Specification procedures and ChemCo Systems' 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.

## SAFETY

This bulletin does not accompany the product when sold. For hazard warnings, safe handling, and first aid instructions. CAREFULLY READ THE 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 an 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.

## TECHNICAL SUPPORT

Additional information, technical assistance, and management services are also available from a ChemCo Systems Technical Consultant at info @ chemcosystems.com or 650-261-3790.

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. This product is available only through KIP System applicators.



**Limited Warranty:** Please read all information in the General Guidelines, Technical Data Sheets, Guide Specifications and Safety Data Sheets (SDS) before applying material. These products are for professional use only and preferably applied by professionals who have prior experience with ChemCo Systems materials or have undergone training in application of ChemCo Systems materials. Published technical data and instructions are subject to change without notice. Contact your local ChemCo Systems representative or visit our website for current technical data, instructions, and project specific recommendations.

ChemCo Systems warrants its products to be free of manufacturing defects and that they will meet ChemCo Systems' current published physical properties. Seller's and manufacturer's sole responsibility shall be to replace that portion of the product which proves to be defective. There are no other warranties by ChemCo Systems of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. ChemCo Systems shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. ChemCo Systems shall not be responsible for use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee is being issued with respect to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. ChemCo Systems reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

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