



CHEM-GEL R

Two Component Epoxy Adhesive for Wet Surfaces

PRODUCT DESCRIPTION

Chem-Gel R is two component, solvent free, high modulus, smooth gel consistency, and moisture insensitive epoxy adhesive. Both the resin and hardener components are formulated and filled to form a smooth paste consistency. **Chem-Gel R** meets the requirement of ASTM C881 Type I & II, Grade 3 Class B & C.

FIELDS OF APPLICATION

Chem-Gel R is designed for applications in damp or wet conditions. Due to its smooth gel nature and high strength properties, **Chem-Gel R** is extensively used in the following applications:

- Used for bonding adhesive packers and as crack sealing compound.
- Repairing vertical or overhead honeycombed concrete in bridge abutments or soffits.
- Bedding bridge beams or steel bridge bearings.
- Securing bolts into walls.
- As a gap filling adhesive.
- Bedding tiles in wet and damp areas.
- Repairing concrete posts in situ.
- Bonding new to old concrete.

PRODUCT FEATURES

- Two components ready to use work pack
- Thixotropic consistency allows for vertical and overhead applications.
- Excellent adhesion
- Can be applied in dry, damp and wet conditions.
- Excellent mechanical properties.
- Rapid shrink-free curing and early strength
- Easy to use by spatula, trowels to smooth finish.
- Can be mixed with silica sands to form a grout or mortar mixes.

PACKAGING

Product
Chem-Gel R

Packaging
3 and 15 gal/pack
(12.4 and 61.9 kg/pack)

TECHNICAL DATA

Un-mixed: Properties

	Part A Resin	Part B Hardener
Solids	100%	100%
Color	Concrete Grey Gel	Clear Gel
Density lb/gal (kg/L)	9.7 (1.16)	8.5 (1.02)
Shelf Life	2 years	2 years
Mixing ratio (A:B)	2:1 by volume	

Properties @ 25°C

Mixed Properties	Value	ASTM Method
Density lb/gal (kg/L)	9.1 (1.1)	D-1475
Viscosity	Smooth Gel	N/A
Pot Life (90 ml)	30 minutes	C-881
Gel Time (25 microns)	6 hours	N/A
Shore Hardness	84-D	D-2240
Tensile Strength Psi (MPa) 3 days	4280 (29)	D-638
Flexural Strength Psi (MPa) 3 days	5145 (35)	D-348
Compressive Strength Psi (MPa) 3 days	10290 (70)	D-695
Bond Strength Psi (MPa) (24 hrs)	620 (4.2)	C-321
Bond Strength Psi (MPa) 3 days	2060 (14)	C-882

APPLICATION DATA

Limitations:

- Applications at ambient temperature below 4°C is not recommended.
- Exposure to temperatures exceeding 65°C for prolonged periods is not recommended.

Surface Preparations:

Concrete Substrates: The substrate must be clean, dry if possible, free from oil grease or any other contaminants. Laitance and loose particles must be removed either by sand blasting or mechanical grinding from the edges of the cracks.

Concrete surfaces may be dry, damp or wet, but best bonding results are obtained on dry concrete.

Any non-structural hairline cracks or other defects can be treated without injection using **Chem-Gel R**. They should be opened by use of a masonry saw to provide a 6mm x 6mm groove.

Steel Surfaces: All steel surfaces to be bonded with **Chem-Gel R** must be clean, dry, free from rust, oil, grease, etc.. Short blasting to Swedish standard SA 2 ½ is preferable to achieve a white bright metal.

Mixing:

Stir each component separately. Mix 2 parts A with one part B by volume into a clean mixing container. Mix the epoxy with slow speed drill and a mixing paddle attachment. Carefully scrape the sides and bottom of the pail during mixing. Blend for 3 minutes.

When Preparing Grout:

Mix one part of Silica Sand 0.8 – 1.2 mm by volume to one part of **Chem-Gel R** mixed binder.

Mix only the quantities that can be used within the pot life.

- Note:**
- Large batches of epoxy will cure much faster than small batches.
 - Mixed epoxy will cure much faster in hot weather than in cold weather.

Application:

As a Crack Sealing Compound: Use **Chem-Gel R** to fix the adhesive packers and seal the length of the crack using spatula or putty knife in strips of minimum 50 mm wide and 2 mm thick.

Allow applied crack sealing compound to cure for minimum 8 hours prior to commencing injection works.

Note: **Chem-Gel R** can be applied on dry, damp and wet conditions. If there is flow of water from the crack, or current in the water, **Chem-Gel R** is not recommended.

As a Grout: Fill the cavity with prepared mortar, using a trowel, spatula or caulking gun. Tamp and strike-off level with the surrounding surface. When filling deep areas, limit each layer to 25 mm to avoid sagging on vertical or overhead applications.

As a Mortar: Place on surface, spread and rough level to desired thickness follow by toweling in one direction to a uniform surface and appearance. Do not over work the material. Keep the trowel well lubricated with solvents. Apply in maximum 13 mm lifts at a time.

Curing:

Initial setting is minimum 8 hours. Full cure in 3 days.

CLEANING

Remove uncured **Chem-Gel R** from tools and equipment with a suitable solvent such as Xylene or Toluene immediately after use. Cured material may only be removed mechanically.

STORAGE

Store in a dry area between 10°C and 25°C. Protect from direct sunlight.

SAFETY PRECAUTIONS

After full curing the product is physiologically harmless. Keep the resin and hardener away from the eyes, mouth and skin. Do not inhale vapours. Uncured mixture can cause irritation of the skin. The best precaution is to wear safety protective gloves, overall, mask and goggles while working. Skin contamination should be immediately cleaned with soap and plenty of water. The use of solvents should be avoided. If resin or hardener splashes into the eyes, wash immediately with running water. A Doctor must be visited in all cases.

TECHNICAL ASSISTANCE

Please contact International Chem-Crete Corporation for Technical Personnel.

WARRANTY

LIMITED WARRANTY: International Chem-Crete Inc. warrants that, at the time and place we make shipment, our materials will be of good quality and will conform to our published specifications in force on the date of acceptance of the order.

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