

TechnoFix[®] Epomast InjectoSeal 2K

Two Part Low Viscosity, High-Modules Epoxy Resin with Long Pot Life for crack injection.

Description:

TechnoFix[®] Epomast InjectoSeal 2K is a low viscosity epoxy resin based crack injection resin system long mixed pot life designed for sealing cracks in concrete and restoring its structural integrity.

TechnoFix[®] Epomast InjectoSeal 2K is a two-component, 100% solids structural epoxy resin used for deep penetration into cracks, sealing and restoring the structural integrity of concrete. Due to its very low viscosity (compared to conventional Epoxy resins) TechnoFix[®] Epomast InjectoSeal 2K is used for pore and crack filling as well as for rigidifying purposes at concrete restoration even for hair line cracks it can be used.

Application Includes:

TechnoFix[®] Epomast InjectoSeal 2K is recommended for use in the Following areas of application-

- Sealing of structural concrete cracks from 0.1mm to 10mm.
- Pressure-injection cracks in structural concrete, sealing pipes, tunnels, cable vaults, tanks and basements.
- Stabilised cracks in structural members.
- Binder for epoxy patching mortar on horizontal surfaces.
- Unfilled voids behind tiles or stone facades.
- Bonding of steel plates to concrete.
- Installation of bolts, anchors, dowels and starter bars.
- Rapid structural repair of concrete.

Features:

- High bond strength to concrete - Can restore the structural integrity of the concrete.
- Solvent free - Low VOC and non-shrink.
- Low viscosity - Easy to inject into fine cracks.
- Cures hard at low temperatures - Wide application range.
- High heat deflection temperature-Suitable for high ambient temperature environments.

Instructions for use

Under-plate grouting applications

Surface Preparation

The unrestrained surface area of the grout must be kept to a minimum. Generally, the gap between the perimeter formwork and the plate edge should not exceed 75 mm on the pouring side and 25 mm on the opposite side. Formwork on the flank sides should be kept tight to the plate edge. Air pressure relief holes should be provided to allow venting of any isolated high spots.

Formwork

The formwork should be constructed to be leak proof as TechnoFix[®] Epomast InjectoSeal 2K is a free flow grout. This can be achieved by using foam rubber strip or mastic sealant beneath the constructed formwork and between joints. For free flow grout conditions, it is essential to provide a hydrostatic head of grout.

Foundation surface

This must be free from oil, grease, or any loosely adherent material. If the concrete surface is defective or has laitance, it must be cut back to a sound base. Bolt holes or fixing pockets must be blown clean of any dirt or debris.

Typical Properties at 25°C

Mixed resin and hardener only	
Meets the requirements of ASTM C 881 Type 1 & 4 Grade 1 Class B & C.	
Colour	Clear Amber
Tensile strength (ASTMD638) 7 days	18 MPa
Compressive Strength (ASTM C579)	55 MPa @ 1 day 68 MPa @ 3 days 95 MPa @ 7days
Bond strength	>2.5 MPa (concrete failure)
Pot life	50 minutes @ 25°C 30 minutes @ 40°C
Slant shear bond strength (ASTM C 882 @ 7 days)	>18 MPa (Concrete failure)
Flexural strength (ASTM C 6319 part 3)	45 MPa @ 1 day 55 MPa @ 7 Days
Density (Mixed)	1.05 kg/L
Viscosity (25°C)	270±50 cps
Mix Ratio (Resin: Hardener)	2: 1
Application Temperature	15°C - 35°C
Tack free time	6.5 hours @ 25°C
Application Temperature	15°C - 35°C

Base plate

If delay is likely before placing steel base plates, it is recommended that the underside and edge are coated with TechnoSeal[®] PrimePlus to prevent rust formation and ensure bonding with the TechnoFix[®] Epomast InjectoSeal 2K. All metal surfaces should be cleaned to a bright finish in accordance with Swedish Standard SA 2½ or equal. TechnoSeal[®] PrimePlus can be applied directly onto newly cleaned steel surfaces even if they are damp.

Coverage

Depends on the cavity, capillary and intake of the structure.

Cleaning of Tools and equipments

Used tools and equipment must be cleaned carefully with an appropriate solvent like TechnoPur® Eco Cleaner. Once cured TechnoFix® Epomast InjectoSeal 2K can only be removed by mechanically.

Packaging

TechnoFix® Epomast InjectoSeal 2K supplied in 6 kg and 30 kg composite working packs.

Storage

The product should be stored in its original package, in a cool and dry place protected from frost. For short term storage, maximum 3 palletes should be placed on top of each other and the shipment should be made on a 'first come, first go' basis. Palletes should not be placed on top of each other during long term storage. Keep away from any fire hazards or ignition sources

Shelf Life

The shelf life is 12 months from the date of production under suitable storage conditions. Opened packages should be stored under suitable storage conditions and used within 1 week.

Health and Safety instructions

Protect your health while working with this material, always use safety goggles, gloves and safety clothing. When handling hazardous materials or pressurized materials, or during any application that may result in spills, splashes or airborne particles, a full face shield is strongly recommended. Protect yourself and others on the jobsite. Consider property in proximity of the application area to prevent loss or damage. Protect your jobsite from unauthorized persons. Store all materials and equipment safely and out of reach of children and animals.

Observe container labels, SDS, applicable laws and regulations and all instructions before using the product and equipment. In case one of the components comes in contact with the skin, wash thoroughly with soap and water. Provide adequate ventilation in volume and pattern in working area.

*Further protection: emergency showers and eyewash stations. Get immediate medical attention as needed.

Mixing

The entire contents of the hardener can should be poured into the base container and mixed for 2- 3 minutes or until uniform colour is achieved. Once mixed, the material must be used within the specified pot life (see under Properties). After this time, unused material will have stiffened and should be discarded.

Note: Immediately prior to placement, all surfaces must be dry.

Placing

Ensure that the grout can be placed within its pot life. Continuous grout flow is essential. Sufficient grout must be available prior to starting and the time taken to pour a batch must be regulated to the time taken to prepare the next one. Pouring should be from one side of the void to eliminate air entrapment. The hydrostatic head must be maintained at all times so that a continuous grout front is achieved.

Crack injection applications

Fixing Injection Packers

The injection packers shall be inserted into pre-drilled holes at intervals along the length of each crack. The distance between each packer will depend upon the width and depth of the crack.

Spacing shall be close enough to ensure that the resin will penetrate along the crack to the next point of injection. The surface of the cracks between the packers shall be sealed with TechnoSeal® EPA 1500, 30 to 40mm wide and 2 to 3 mm thick. Both sides of any cracks which go all the way through a wall or slab shall be sealed in this way. In the case of a wall or slab cracked all the way through, packers shall be located on both sides with those at the back placed at midway points between those at the front.

The TechnoSeal® EPA 1500 shall be allowed to cure for 8 hours at 35°C. At low ambient temperatures (5°C to 12°C) the curing time will be extended and the applicator shall ensure that the surface adhesive has adequately cured prior to continuing. One end of the injection hose shall be attached to the lowest packer on vertical cracks or to either end of the horizontal cracks.

Resin Application

Thoroughly mix the entire hardener and base resin contents until the liquid becomes clear. TechnoFix® Epomast InjectoSeal 2K should be used with standard injection equipment having closed containers. The injection pressure should be at least 0.4N/mm² (4 bar). Only mix sufficient resin that can be used within the pot life of the material. Following completion of the injection works the injection system shall be allowed to cure for 24 hours and shall be left undisturbed for this time. Final Repair Remove the packers and make good any holes or voids with TechnoSeal® EPA 1500 and allow to cure. The TechnoSeal® EPA 1500 can be ground off or softened with a blow lamp and peeled off.

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Cautions & Important Watch Points

The reaction and workability times of resin based systems depend on the ambient and substrate temperatures as well as the relative humidity. Under lower temperatures, the chemical reaction times are prolonged and this increases the pot life, coating interval and the working time. In addition to this, the consumption is increased as the viscosity increases. High temperatures ignite stronger chemical reactions and the above mentioned times decrease accordingly. For the material to be cured properly, the ambient and the substrate temperatures should not fall below the specified limits.

TechnoFix® Epomast InjectoSeal 2K as ready-to-use kits. No solvent etc should be added during application. The empty packs should be consolidated and disposed properly in order to prevent reusing of the packages. Epoxy and polyurethane based floor coatings should be applied by specialists Applicators.

Additional Information: Techno Builders Solutions® By Sterling Technotrade India Pvt.Ltd -The Specialist Construction Chemicals Company® range of associated products includes high performance concrete Admixtures, Adhesives, Protective Coatings, Concrete Repairs, Industrial Flooring, Grouts & Anchors, Joint Sealants, Surface Treatments, curing compounds, repair mortars, release agents, Grinding Aids & Waterproofing.

*Separate datasheet are available on these products.

DISCLAIMER: The product information & application details given by the company & its agents has been provided in good faith & meant to serve only as a general guideline during usage. Users are advised to carry out tests & take trials to ensure on the suitability of products meeting their requirement prior to full scale usage of our products. Since the correct identification of the problems, quality of other materials used and the on-site workmanship are factors beyond our control, there are no expressed or implied guarantee / warranty as to the results obtained. The company does not assume any liability or consequential damage for unsatisfactory results, arising from the use of our products.

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Please note that this datasheet supersedes all previous versions.

Application in Horizontal cracks

In case of horizontal cracks in excess of 2mm TechnoFix® Epomast InjectoSeal 2K can be applied through gravity flow, without the use of injection packers. However such application need to be verified for suitability through a site trial.

Hot weather working

Whilst the performance of TechnoFix® Epomast InjectoSeal 2K at elevated temperatures is assured, application under such conditions can sometimes be difficult. It is therefore suggested that, for temperatures above 35°C, the following guidelines are used:

Store unmixed materials in a cool (preferably temperature controlled) environment, avoiding exposure to direct sunlight.

Keep mixing and placing equipment cool, arranging shade protection if necessary. It is especially important to keep cool those surfaces of the equipment which will come into direct contact with the material itself.

Try to eliminate application in the middle of the day, and certainly avoid application in direct sunlight. Ensure that there are sufficient operatives available to complete application within the material's pot life.