

ECMAGROUT PU M 640

TWO COMPONENT, LOW VISCOUS, COMBINATION POLYURETHANE INJECTION SYSTEM TO STOP WATER LEAKAGE ALONG WITH PERMANENT & STRUCTURAL SEALING OF CRACKS

Description

ECMAGROUT PU M 640 is a two component, low viscous, solvent and phthalate free, polyurethane injection system for the structural sealing of cracks in concrete structures with a dual performance:

- a. In case water is present, it will form a rigid foam
- b. In case there is no water or the water has been reacted away, the material will form a structural resin to create a permanent seal for a leaking structure.

Mixing ratio 1:1 in volume

To stop a water leakage ECMAGROUT M 640 can be used as a pre-mix and injected as a single component and a rigid foam will be formed. To create a permanent structural seal the structure can be re-injected with ECMAGROUT M 640 using the same material, the same pump and the same packer.

Advantages

- Dual function in one material – stopping small water leaks and a permanent sealing of cracks.
- High mechanical properties like compressive and tensile strength for the structural strengthening and sealing of cracks in structural constructions.
- Low viscosity allows full penetration in fine cracks and voids
- Suitable for hot and cold climates
- Good adhesion to dry, moist and wet concrete or masonry.
- Forms a rigid foam in contact with water
- Forms a structural resin in the absence of water
- Can withstands high hydrostatic pressures as the cured resin is impermeable to water
- Can be pumped as a 1 component premix but the best result will be achieved by using a 2 or 3 component pump.
- The cured material is non toxic
- The system is suitable for use in contact with potable water

Uses

- Sealing leaking cracks to create a permanent structural sealing of the crack with one material, machine and packer
- For injecting into leaking but also dry cracks in concrete or masonry.
- Sealing and stabilizing of cracks & cavities in concrete, loose rock, mountain rocks or similar constructions
- Sealing of sheet pilings, diaphragm wall, beams, columns etc.
- Soil stabilization

Packaging

11 kg packs
ECMAGROUT PU M640 (Part A) = 5 kg
ECMAGROUT PU M640 (Part B) = 6 kg



Technical Specification at 25°C and 50% R.H

Property	Typical Results
Mixing ratio p.b.v.	1:1
Mixing ratio p.b.w.	100:118
Viscosity of the Mix mPa.s	100-120
Gel time without water contact	30-40 minutes
Cream time with water contact	80-100 seconds
Gel time with water contact	300-400 seconds
Free foam expansion	500-1000%
Shore D hardness	75-85
Compressive strength	65-75 MPa
Tensile strength	45-55 MPa
Elongation at Break	4-6 %
Adhesion by Tensile Bond strength	>3 MPa
Adhesion by Slant Shear Strength	Monolithic failure
Intended use	Permanent and Structural sealing of cracks
Min. width of the crack in mm	0.1
Moisture state of the crack	Dry, wet, moist cracks
Min and max use temperature	5°C - 45°C
Corrosion behavior	Deemed to have no corrosive effect

Installation Guidelines

- ECMAGROUT PU M 640 should be applied by experienced grouting crews.
- ECMAS provides detailed method of statements on all its products for use in various applications and must be referred to prior to starting the work.
- The information below is a summary intended for guidance only.
- Detailed information and guidance of pump and packer selection for specific requirements are available from ECMAS.
- ECMAGROUT PU M 640 is carried out through packers installed in holes drilled into the concrete. The holes should be drilled at 45 degree to the concrete surface and intercept at the mid-point of the estimated crack depth.
- Large cracks should be sealed with the fast setting ECMAREP 504 prior to injection. Allow ECMAREP 504 to harden completely before injecting ECMAGROUT PU M 640
- Prior to injection the crack could be flushed with water to remove salt, dust etc. from the crack.

Mixing

- Due to the long pot life for the ECMAGROUT PU M 640 it can be pumped as a single component pre-mix. In case a 2 or 3 component machines is used the ratio is according to the packaging size (1:1 in volume)
- Pour the content of the Part A into a CLEAN, DRY plastic bucket.
- Add the required amount of Part B
- Mix thoroughly manually or with a slow speed mixer (stirrer fixed to a drilling machine) for about half a minute until the mix is homogeneous.

Injection Process

- Polyurethanes are water sensitive and to avoid pump and hose blockages they should be flushed with a suitable cleaning agent like ECMACLEAN prior to using the polyurethanes
- ECMAGROUT PU M 640 is then injected into the holes with a high-pressure pump having a covered reservoir to avoid moisture coming into the pre-mix and capable of reaching pressures up to 200 bar. This forces the ECMAGROUT PU M 640 deep into the structure and allows penetration into the smallest cracks.

- Inject the packers sequentially; on a vertical crack start the injection from the lowest packer and continue to the next packer etc.
- Once all the packers have been injected start the second injection from the first packer again with the same material, pump and packer
- Because of the long pot life for the ECMAGROUT PU M 640 will remain liquid inside the packer after the 1st injection and the packer will take a second injection or even a third injection.
- The 2nd injection should be done within 10 – 15 minutes at 25°C.
- If a pure resin comes out of the front from the crack the crack is filled with elastic resin and will be permanently sealed.

Cleaning

Injection pumps should be flushed and tools cleaned immediately after use, before the resin sets, using ECMACLEAN. Once the resin has set, it can only be removed by mechanical means.

Precautions

- Avoid skin contact.
- Do not discard unmixed or partially mixed material into the water system. If any doubts arise concerning temperature, application or substrate conditions, consult the local ECMAS office.
- To avoid condensation drums should only be opened when the material in the drum has the same or slightly higher temperature than the temperature on the working place.

Shelf Life & Storage

The shelf life is 6 months when stored between 5°C and 35°C with a less than 50% RH in a dry store in original, unopened containers. Once a pack has been opened, use immediately. Purging a part pack with nitrogen is essential. Contact ECMAS for more details.

Health and Safety

- These products are for industrial use only by trained operatives.
- Products should be disposed-off according to the local legislation. Refer to the MSDS for general recommendations.
- All persons in contact with the materials (or in the neighborhood of the injection) should wear the appropriate protective clothing, gloves and safety glasses.
- In case of spills and accidents, refer to the MSDS of the products or when in doubt contact your local ECMAS representative.
- Always wear appropriate protective gear for the job at hand according to local guidelines and regulations.
- Protective goggles should always be worn when handling chemical products.
- Please refer to the MSDS for further recommendations prior to use these products.

ECMAS CONSTRUCTION CHEMICALS PVT. LTD

7-4-124 Gaganpahad,
International Airport Road
Hyderabad, India - 500 052
Phone: +91-40-24360014, 16, 17
email: ecmas@ecmas.co.in

