

Kesari Inject PU 1

Kesari Inject PU 1 is a high-performance, hydrophobic polyurethane-based injection grout . It is single-component, moisture-activated, and MDI-blended, designed for sealing persistent water leaks from large cracks or leaking joints in concrete structures. Upon contact with water, it reacts rapidly to produce a closed-cell, rubber-like foam that expands up to 27 times its original volume (2000-3000% expansion).

1. Product Technical Specifications

Technical Parameter	Specification Value
Form / Color	Liquid Type / Dark Brown
Solubility / Nature	Hydrophobic, Moisture-activated MDI polyurethane
Density (g/ml)	1.12 ± 0.02
Viscosity	100 - 200 mPa-s
Max. Expansion (25°C)	2000 - 3000% (up to 27 times)
Induction / Reaction Time	15 - 20 seconds
Gel Time (25°C)	80 - 90 seconds
Tensile Shear Strength (23°C)	4 N/mm²
Packaging & Shelf Life	5 kg Kit [cite: 21]; 1 year shelf life (0°C to 30°C)

2. Key Applications & Advantages

- **Applications:** Sealing active water leaks in defective concrete, cracks, honeycombs, joints, pipe penetrations, tunnels, dams, basements, and elevator pits. Also used for soil stabilization and curtain grouting.
- **Advantages:** Suitable for negative-side waterproofing, deep penetration into fine cracks, non-corrosive, chemically stable, and low-VOC/eco-friendly formulation.

3. Application Execution Protocol (PU Injection Grouting)

Step 1: Hole Drilling & Packer Installation

- Locate active water leakage cracks or joints. Drill holes at a 45-degree angle intersecting the crack path at the midpoint of the concrete structure, spaced approximately 15 to 30 cm apart.
- Clean out drill dust from the holes using compressed air or water flushing.
- Insert mechanical packers (injection ports) into the drilled holes and tighten them securely using a spanner to ensure tight sealing under injection pressure.

Step 2: Injection Process

- **Preparation:** Pour ready-to-use Kesari Inject PU 1 into the injection pump reservoir. Keep equipment moisture-free.
- **Pumping:** Connect the injection pump nozzle to the lowest packer. Pump the material steadily until resin or foamed material begins to ooze out from adjacent cracks or packers, indicating full cavity saturation.
- **Progression:** Move sequentially from bottom to top (or from one end of the crack to the other). Allow the moisture-activated resin to react and expand, cutting off water flow.

Step 3: Post-Injection Trimming & Sealing

- Allow the polyurethane foam to cure fully and reach dimensional stability.
- Remove the protruding mechanical packers by hammering or grinding them off.
- Patch and seal the packer holes and surface crack lines using a high-strength polymer mortar or epoxy repair compound.

4. Handling, Safety & Storage

- **Storage:** Store in tightly sealed containers between 0°C and 30°C. Reusable within 3 months if kept moisture-free after opening.
- **Safety:** Wear protective gloves, safety goggles, and a mask during spraying and injection to avoid skin contact and fume inhalation. Flush affected areas with plenty of water if contact occurs.