



MAXURETHANE[®]

INJECTION CONSOLIDATED



HIGH-STRENGTH POLYURETHANE RESIN FOR STRUCTURAL INJECTION, WATER LEAKS SEALING AND SOIL CONSOLIDATION

DESCRIPCIÓN

MAXURETHANE[®] INJECTION CONSOLIDATED is a two-component, high-strength, solvent-free polyurethane resin, applied by injection. Once components have been mixed, without the need to come into contact with water, it forms a rigid gel with very high compressive strength, designed for structural injection of dry or wet cracks and joints in concrete, sealing of active water leakages and soil stabilization in general.

APPLICATIONS FIELDS

- Structural injection of cracks, joints and cavities in concrete, with dry or wet conditions, in wastewater treatment plants, dams and hydraulic works in general.
- Soil stabilization on slopes, railway lines, roads, proximities to aquifer areas, etc.
- Filling of cavities and voids under concrete slabs and below underground constructions: tunnels, basements, galleries, metro works, underground car parks, retaining walls, etc.
- Water cut-off, sealing and filling of cracks and fissures into wet substrates or subjected to high hydrostatic pressure conditions with running water leaks for:
 - Damaged, cracked or honeycombed concrete.
 - Stone or brick masonry.
 - Below grade structures: tunnels, galleries, basements, elevator pits, foundations, etc.
 - Pipe network and retaining structures of drinking water: dams, water tanks, channels, swimming pools, reservoirs, etc.
 - Sewer system: sewers, manholes, utility boxes, wastewater tanks, etc.
- Sealing of concrete structures and masonry in general using the pre-installed **MAXURETHANE[®] INJECTION TUBE** system

composed of PVC tubes (Technical Bulletin No. 217) or using standard injection packers.

ADVANTAGES

- It forms a gel of high structural strength like or higher than concrete. High dimensional stability once cured. Does not shrink or swelling by dryness or wet conditions.
- No water for reaction. In case of contact with water, it forms a waterproof closed-cell foam expanding up to 1,5 to 2 times.
- Easy injection. Suitable for mono- or two-component injection systems.
- Very good chemical resistance to ground salts, chlorides, sulphates, nitrates, seawater, wastewater, etc.
- Solvent-free and non-flammable.

APPLICATION INSTRUCTIONS

For additional information, consult the Technical Dossier for injection procedure detailed in the "Introduction to **MAXURETHANE[®] INJECTION System**".

Mixing

Components for **MAXURETHANE[®] INJECTION CONSOLIDATED** are supplied in a two-component pre-weight sets, so they must be mixed in the appropriate ratio, see Technical Data Table.

Pour Components A and B into a clean, dry container in the right ratio (weight or volume) and mix them using a mixing disc at low speeds (200-250 rpm).

Application

MAXURETHANE[®] INJECTION CONSOLIDATED is designed to be applied by means of one-component or two-component injection equipment using a volumetric dosing in a constant ratio of 1,64:1,0. The two-component injection system must

incorporate a static mixer at the tip just where the injection takes place, which will be carried out directly in the hole made in the ground, in the foundation, wall or in the joint to be treated.

It is essential to keep the equipment dry. Prevent any contact of moisture with the mixture to avoid a premature reaction of the product. If the reaction of the batch occurs while pumping, the injection machine must be immediately shut down and flushed with **MAXURETHANE® INJECTION CLEANER** to avoid solid foam and clogging of the equipment.

Before injecting, study the initial conditions for the substrate, the type and numbers of cracks, voids, the hydrodynamic and hydrostatic conditions and the quality of water.

So, basic steps for the injection procedure are the followings:

1. Clean the substrate or concrete surface along the joint, crack or fissure.
2. Plan a pattern of the injection points and then, drill holes.
3. Clear the injection holes and place the injection packers.
4. Clear and seal the joints or cracks with a **MAXPLUG®/MAXREST®** fast-set repair mortar.
5. Inject the **MAXURETHANE® INJECTION CONSOLIDATED**.
6. Clean the surface, tools, mixing equipment and injection equipment of resin.

Application conditions

Both temperature and humidity of the environment must be observed because they will determine the pot life of the already mixed batch. The higher temperature and relative humidity, the shorter is the pot life. Do not mix more resin than can be injected in a reasonable period.

Cleaning

All tools, mixing equipment and injection pump are cleaned with **MAXURETHANE® INJECTION CLEANER** immediately after use or if works are interrupted for a long period. Circulate the cleaner through pump for several minutes. It is recommended to circulate mineral oil through the pump after the cleaning fluid if the pump is not going to be used for some time. Once polymerized, **MAXURETHANE® INJECTION CONSOLIDATED** can only be removed by mechanical means.

Do not use any solvent at all for personal cleaning. Instead use soap, detergents or special products.

During cleaning process, provide a good ventilation in the working area site.

CONSUMPTION

Consumption will vary depending on the use and volume to be refilled. Consider an estimated consumption of 1,1 kg of product for 1 l of volume to be filled. An on-site test is recommended to determine consumption according to construction conditions.

IMPORTANT INDICATIONS

- Observe the safety precautions during both the handling and the resin injection process.
- Avoid premature contact of resin (A+B) with water before injection to prevent any reaction of the product.
- For further information and other uses not specified in this Technical Bulletin consult our Technical Department.

PACKAGING

MAXURETHANE® INJECTION CONSOLIDATED

is supplied in a 44 kg pre-weight two-component sets (25 kg Component A and 19 kg Component B) and 8,8 kg pre-weight sets (5 kg Component A and 3,8 kg Component B).

MAXURETHANE® INJECTION CLEANER is supplied in 5 and 25 l metal drums.

Accessories

DRIZORO® supplies injection equipment consisting of manual pumps (**DRIZORO® B1**) or electric-drill powered pumps (**DRIZORO® A2**), injection packers and pressure hoses, etc.

STORAGE

Twelve months in its original unopened containers in a dry and covered place, with temperatures between 5°C and 35°C. Protect against humidity, direct sunlight and frost.

SAFETY AND HEALTH

During the mixing and injection do not work without protection of safety rubber gloves, safety clothing, safety goggles and full-face shields permanently. Spills and blow outs may happen due to the pump pressure. In case of skin contact, wash with abundant water and soap. If one of the components or mixture comes in contact with the eyes, rinse immediately with clean water but do not rub. If irritation persists, seek medical assistance. If ingested, seek immediate medical assistance. Do

MAXURETHANE® INJECTION CONSOLIDATED



not induce vomiting. Provide suitable ventilation in the working area.

Observe the usual precautions necessary for the use and applications of this type of products.

For further information, refer to Safety Data Sheet for **MAXURETHANE® INJECTION CONSOLIDATED**.

Disposal of the product and its empty packaging must be made by the final user and according to official regulations.

TECHNICAL DATA

Product characteristics			
<i>CE Marking, EN 1504-5</i> Description: injection product for filling cracks, voids and gaps in concrete, transferring the stresses. Principles/Methods. Filling cracks (Method 1.5.) Injection into cracks, voids or gaps (Method 4.5.) Filling cracks, voids or gaps (without pressure) (Method 4.6.)			
Appearance	<i>Component A</i>		<i>Component B</i>
	Viscous liquid		Viscous liquid
Colour	Transparent		Brown
Density at 20°C, (g/cm ³)	1,00		1,23
Storage temperature, (°C)	> 5		> 5
A:B mixing ratio, (by weight)	1,31:1,00		
A:B mixing ratio, (by volume)	1,64:1,0		
Solids content A+B, (% by weight)	100		
Application and curing conditions			
Gelling time at 23°C, 50 % R.H., (min)	5		
Total cure time at 23°C, 50 % R.H., (min)	45		
Expansion ratio with water	1,5-2		
Characteristics for cured product			
Compressive strength, UNE EN 12190 (MPa)	49,5		
Flexural strength, UNE EN 12190 (MPa)	46,4		
Adhesion by tensile strength (crack width of 0,8 mm) UNE EN 12618-2 (MPa)	> 2,5 (cohesive failure of concrete)		
Adhesion by tensile strength after thermal and humidification-drying cycles (crack width of 0,8 mm), UNE 12618-2 (MPa)	> 2,5		
Time for tensile strength of polymers of 3 N/mm ² , UNE EN 1543 (min)	5°C	21°C	35°C
	250	75	60
Determination of viscosity, UNE EN ISO 3219 (MPa·s)	97,1		
Volumetric shrinkage, UNE EN 12617-2 (%)	2,4		
Non-volatile matter content, UNE EN 3251 (%)	98		
Solubility in water	Null		
Dry retraction	Null		
Chemical Resistance	Excellent against ground salts, chlorides, sulphates, nitrates, seawater and wastewater		

GUARANTEE

The information contained in this leaflet is based on our experience and technical knowledge, obtained through laboratory testing and from bibliographic material. **DRIZORO®**, **S.A.U.** reserves the right to introduce changes without prior notice. Any use of this data beyond the purposes expressly specified in the leaflet will not be the Company's responsibility unless authorised by us. We shall not accept responsibility exceeding the value of the purchased product. The data shown on consumptions, measurement and yields are for guidance only and based on our experience. These data are subject to variation due to the specific atmospheric and jobsite conditions so reasonable variations from the data may be experienced. To know the real data, a test on the jobsite must be done, and it will be carried out under the client responsibility. We shall not accept responsibility exceeding the value of the purchased product. For any other doubt, consult our Technical Department. This version of bulletin replaces the previous one.



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