STOPWATER 300®

High Strength Polyurethane

Concrete Repair Reinforcement | Crack Repair
2 Component Polyurethane Resin for Cracks

■ Product Information

STOPWATER 300 is a self-reacting hydrophobic 2 Component Polyurethane Resin which is based on polyether polyol. It is applied to treat leaks in cracks and is used as a high strength reinforcement material that reinforces dry cracks caused by defective concrete structures in buildings. The foaming rate is minimized and the hardened resin is harder than normal polyurethane foam and the density is high. Therefore, it does not have defects caused by deformation and its waterstop effects last semi-permanently. It provides strong physical strength after hardening and its low viscosity and strong penetration ability brings excellent adhesive power even on a damp surface. It is a non-elastic polyurethane reinforcement material.

■ Characteristics

- Its mechanical strength is higher than that of normal concrete structures. Compressive Strength (57N/㎟), Adhesive Strength (8N/㎟) and Seal Strength (37N/㎟).
- Since it has low viscosity, it penetrates into minute cracks. It provides complete waterstop results.
- The hardened foam has excellent adhesiveness on both damp and dry surfaces of concrete.
- When the main component and hardening component are mixed you have enough pot life (about 30~100min). Therefore you can inject it by using a single component type pump.

■ Use

-Repair and reinforce of damp and dry cracks of all concrete structures.

-Cutoff and reinforcement of ground and bedrock.

-Crevice filling and reinforcement

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■ Application Area

Normally to reinforce and stop water in cracks and joint sections of concrete structures. It can be applied on following places:

- Sections of basement parking lots and underground concrete structures.
- Concrete joint sections.
- Sections where humidity exists.

■ Technical data / property

Exterior Appearance: No Color (R) / Dark Brown Liquid (H)
Mixing Rate: 100(R) : 100(H) 2 Component type
Viscosity at 25℃ (KS F 4923): 100~150(R) / 150~200(H) mPa.s
Mixxing Density at 25℃: 1.12±0.05
Pot Life at 23℃: 40 Min
Compression Strength (KS F 4923): 57 N/㎟
Seal Strength (KS F 4923): 35 N/㎟
Seal Breaking Expansion Rate (KS F 4923): 3%
Adhesive Strength (KS F 4923): 8 N/㎟
Solids: 90~91%
Flash point : >155℃
Packing: 20kg(R) : 20kg(H)
Foaming Percentage (at 25℃) : 100~200%

■ Using Materials

1) High pressure injection packer.

2)Injection equipment for PU Foams

- The packers are especially designed to endure high pressure so the injected resin won't flow backwards and leak around the fixed packer.
- This is a single component type high-pressure injection pump specially manufactured to fix leaks in voids and cracks by using polyurethane foam and epoxy injection resins.

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■ Method of Application

- Drilling

Normally when injecting Stopwater 200, it is injected through a packer. Drill around the leaking area or crack and fix the packer. During the drilling use a hammer drill and make holes with the same diameter. The external diameter of the Drill Bit could be from 10mm – 13 mm depending on the packer's diameter. The Perforation angle between the concrete surface and crack should be at a 45 degree angle or under.
If the concrete thickness is less than 10cm then drill directly through the crack. If the thickness is 10cm~50cm, drill up to 1/5 of the thickness of the concrete. Repeat the process every 20cm along the cracks in a staggered zig zag manner.

-Packer Installation

Select a suitable packer out of various kinds of packers that suits the site condition the most. Use a T-box and firmly tighten up the packer in the perforated hole and make sure not to over tighten the packer. (It might get damaged if it is tightened too hard.)

- Polyurethane Injection

Inject STOPWATER 300 by using high-pressure injection equipment. Maintain initial injection pressure at about 15kg/cm² and keep injecting until the foam material flows out through the crack. Stop injecting for a few minutes when STOPWATER 300 will flow out between the cracks during first PACKER injection, then the injected foam will foam completely and it will seal the crack.
STOPWATER 300 will fill up the cracks well enough and after 5 minutes start to re-inject and you can ignore the chemical that leaks out a little bit. If the crack is very big then seal the crack before injection.

The following steps help to see of you are injecting properly:

-Is the water inside the crack coming out because of the Polyurethane Foam Waterstop Injection?
-Is the injected Foam reacting with the water and coming out from the cracks after gradually Foaming?
-Finally, is the undiluted liquid Polyurethane Foam coming out from between the cracks before it starts foaming?

If it is so then the injection is being done properly.

- Removing the Packer

Use vice pliers as a tool or bend off or use a hammer to remove it. If there is a wet spot left then inject Polyurethane Foam again.

-Finishing Operation

Remove STOPWATER 300 that is smeared around cracked area. Spread with flexible sealing material.

■ Cleaning

All the equipment and tools that are used for this operation should be cleaned when the operation is finished. Detergents such as M.E.K, Acetone, Xylene, Toluene and urethane thinner should be used when cleaning. If the Foam is smeared on your skin during the performance, wash it immediately with flowing water. Used injection equipment should be stored by filling up the hose, pump and medical fluid container with Engine Oil and Oil Pressure Oil.

■ Cautions

-When working with chemicals, make sure you wear a protective helmet, goggles, clothes and other protective devices.
-If the chemical is smeared on your skin, wash it off immediately and clean it up with soapy water.
-All the hand tools and equipment that is used for this operation should be cleaned with thinner thoroughly.
-If you are working in a closed room make sure to use ventilation for clean air.
-If the chemical is smeared on your skin and causes skin trouble, then you should go see a doctor.
-If the temperature is below 5℃, then you must artificially raise up the temperature of the chemical. This way you can get proper Pot Life.
-If the temperature is high and the area is humid the pot life of the chemical Will be shorter. On the contrary the pot life will be longer in low temperatures.

■ Storage

Recommended temperature for storage is 5~30 ◦C with no moisture. Store it in a cool area. Storing period is about 8 months in sealed condition however it can be corrupted according to storing area and conditions. Preferably use it as soon as possible.

■ Health & safety

STOPWATER 300 should only be used as directed. We always recommend that the Health & Safety data sheet is carefully read prior to application of the material. Our recommendations for protective equipment should be strictly adhered to for your personal health. Health & Safety data sheet is available upon request.