Contite ® G600

A HYDROGEL FOR SHUTTING OFF HEAVY WATER LEAKAGES WITH HIGH TENSILE ADHESION TO WET & DRY SUBSTRATES

DESCRIPTION

Contite G600 is a hydrogel injection grout to be used as a water stopping system producing depending on the amount of water a tough flexible foam or an elastomeric gel. It provides an effective means of stopping water seepage and consists of a solvent free material that only reacts when it comes into contact with water.
Complies to EN1504 Part 9 and EN1504 Part 5 Class S
- Principle 1 : Protection Against Ingress (PI).
  Method 1.5 – Filling Cracks.

USES & ADVANTAGES

Contite G600 is a hydrophilic prepolymer that reacts with water over a range from 1:1 (polymer to water) forming an impermeable elastic foam and at a ratio 1:5 (polymer to water) a highly resilient elastomeric gel.
Properly applied **Contite G600** adheres to the surface and forms a tough, rubbery gasket that immediately stops water.
Depending on the amount of water it may be injected direct as a single component system into the leaking crack or joint or as two component system by means of a mixing/metering machine using water as a second component.
Typical areas of use include shutting off water seepage, forming a positive side waterproof membrane with below grade structures injected from the negative side, for reinjectable hoses & soil stabilization, prevention of water leakage in sewerage and drainpipes, ground stabilization, prevention of water leaks through expansion or construction joints, etc.
In areas where the water is saline such as undersea tunnels **Contite G600S** can be used to replace standard **Contite G600**. The final performance characteristics will be the same as **Contite G600**.
Advantages include:-

- One part easy to handle on the jobsite.
- In the reaction with water a foam or a gel will be formed depending on the amount of water.
- None of the ingredients are corrosive, the hydrogel based on **Contite G600** is non corrosive in liquid or in cured form.
- If the cured material dries out it will remain flexible; when water returns it will return to its original shape picking up the same amount of water.
- Solvent free.
- Reacts with water.
- May use as a single or two component system.
- Good adhesion on wet as well as on dry concrete.
- Low viscosity; therefore, good penetration.
- The curing time can be adjusted by changing the amount of water.
- Can be used as foam or as gel.
- Cured material is non-toxic.
- Eco friendly. No VOCs.
- Saltwater version available.

PROPERTIES

Colour :	Clear Yellowish Liquid
SG :	1.09-1.12
Viscosity at 25ºC : (77ºF) (#62/60 r.p.m.)	350-650 mPa.s
pH:	7 - 9

SUBSTRATE PREPARATION

Remove debris, old or failed sealant from joints, clean up the injection holes by using a blower and then flush out with water. If application is over a joint, remove all old or failed sealant, then clean up and flush the joints with water.

MIXING

To prevent condensation on the liquids at the start of work, the temperature of the components should be at least as high as the ambient temperature.
All opened drums of **Contite G600** should be capped when not in use.
The below table shows the dependence of the cream & gel time on the **Contite G600** to water ratio.

Time & Foam formation Depends on the Ratio G600/Water

Ratio hydrogel /water	Cream (sec.)	Gel (sec.)	End product**
1:1	15-20	20	Exp. foam
1:5	20-25	25	Gel

G600S/Seawater (3.5% NaCl Solution)

Ratio hydrogel /water	Cream (sec.)	Gel (sec.)	End product**
1:1	30-35	35	Exp. foam
1:3	32-37	37	Gel

The times were measured at 20ºC (68ºF).
** Exp. foam: Expansive foam.

APPLICATION

<u>Injection System</u>

Drilling Injection Holes

It is recommended to use packers not surface injection ports. Surface ports do not adhere well to wet surfaces nor tolerate high pressures.
Metal & rubber packers are made to withstand high pressures up to 5,000 psi in wet & dry conditions.
Before drilling holes locate rebar.
Use a rotary hammer. The diameter shall be 13 or 16 mm. depending on the packer. Drill at 45 degrees or less to the surface toward the crack.
The drill hole depth should be to approximately the middle of the structure. Holes deeper than 45 cm are not normally required as long as adequate pressure is available. Holes should be staggered from one side of the crack to the other. The distance between drill holes

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as a rule of thumb is 30 cm. If the concrete is less than 15 cm thick drill holes straight into the face of the crack to avoid spalling.

Packer Insertion

Place the packer into the hole so that the top of the rubber sleeve is below the concrete surface.

Tap in the packer if it cannot be pushed in. Tighten as much as possible.

Flushing of Crack

In thicker walls flushing the crack first with water may aid injection. Start at the lowest packer on vertical walls or at the narrowest point of horizontal cracks.

Crack Injection

Ensure all equipment is dry. Active water flow at a high rate is best stopped by **Contite G600**. Start at the highest point of resistance normally the lowest point on a vertical crack & the narrowest on a horizontal.

Monitor the pressure level. If free flow of resin is apparent at the cracks surface pause for a few minutes. The resin should heal the crack so as to contain the material. Restart pumping after 3-5 minutes. If resin continues to flow from the crack stop pumping & apply a surface seal with a rapid setting cement or oakum/foam rubber soaked in reactive material jam into place, allow a few minutes to cure & start pumping again.

Wide cracks should have surface seals to contain the resin. Under normal conditions with active leaks the following should be observed (in this order).

a) Water displaced from the crack

b) Water & resin mix appearing at the crack (foamy)

c) Pure resin from the crack

Continue pumping until resin is observed oozing from the next packer. Shut off the resin flow disconnect the pressure line & proceed to the next packer. After injecting several packers disconnect & return to the first packer & inject again.

Joint & Wide Cracks Sealing by Oakum Technique

Leaking expansion joints, wide cold joints, and extra wide moving cracks may be sealed using **Contite G600.**

Contite G600 is especially effective to repair failed waterstops the expansion of **Contite G600** allows it to stay in compression ensuring no bond failures. Outer confinement can be the soil or waterstop, inner temporarily by a backer rod or hydraulic cement.

Alternatively use strips of oakum, foam rubber or other absorbent material soaked in resin & packed into the joint/recess. If water flow is at a very high-rate small diameter pipes may be inserted in the packing material which serve to relieve pressure & divert flow away while the packing material cures. Once cured inject resin into the pipe to seal it, the pipe can then be removed.

The reactivity with water of **Contite G600** can be used in the activated oakum technique where oakum or any other kind of carrier material is soaked in **pure Contite G600**

The oakum and the **Contite G600** are applied into any void where small water leakages can be a problem (pipe outlet through walls etc.)

The foaming capability of **Contite G600** in combination with a good flexibility of the end product as well as a good adhesion to the substrate is used for expansion joints. The ratio to be used of **Contite G600** to water is 1:1.

Soil / Dust Stabilization

Contite G600 sprayed in light concentrations with water can be used for stabilization of soils, sand dunes, stockpiles, etc. Either injection method can also be used wherever applicable. Generally, the ratio to be used of **Contite G600** : Water can be 1:1 to 1:5.

Backfill Grout or Membrane Forming

The high reactivity in combination with the water solubility of **Contite G600** is used for shutting off heavy water leakages (up to 5 m^3 (176 ft^3) per minute). The ratio to be used is 1:1 or pure resin.

The low viscosity of the water/polymer mixture allows it to be used as a liquid, but solidifying gel membrane applied to the positive side of a concrete structure from the negative side, the maximum ratio to be used of **Contite G600** to water is 1:5. The gel mixture will fill the voids behind the wall to stop water.

The procedure is drill through the wall and pump the **Contite G600** - water mixture via packers.

Contite G600 to be used in masonry walls as a vertical barrier to fill the voids/joints to stop water coming through to the surface of the wall. The ratio to be used of **Contite G600** to water is 1:5.

The procedure is drill holes to 80% of the wall thickness or until 5 cm (2 in.) from the back of the wall and pump the **Contite G600** water mixture via packers into the wall.

The low viscosity in combination with a good adhesion allows **Contite G600** to be used for the gel encapsulation method where voids are filled with a gelly material (e.g. delaminated concrete slabs etc.). The ratio to be used of **Contite G600** to water is 1:5.

Reinjectable Hoses

The low viscosity of **Contite G600** makes it perfect for use in conjunction with reinjectable hoses, immediate waterproofing or for later waterproofing; the ratio to be used of **Contite G600** to water is 1:5. See **Contite Injection Hoses**.

Note :

Depending on the situation **Contite G600** can be pumped by the use of a single component injection pump equipped for higher pressures to withstand the water pressure or in cases where water is used as the second component **Contite G600** should be pumped with a two-component injection pump.

After the injection is completed flush the mixing head with water first and then with **Contite Purge**.

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a) To check the reaction, we advise free foaming conditions.
100 parts by weight **Contite G600** x parts by weight water (see the table in mixing section as a guideline)
Add water according to the above to the **Contite G600** and mix.

b) To measure the cream, the gel and the rise use the following procedure.
- The start time (point 0) is the time after the water is added and mixing starts.
- The cream time is the time at which the mix starts foaming.
- The gel time is the time the material is no longer able to flow.
- The rise time is the time where no further expansion is noted.

c) **Contite G600** only needs water:
- To achieve the final product like foam or gel.
- To control the reaction speed.

PACKAGING

Contite G600: 10 kg, 20 kg in a steel pail and 210 kg in steel drum. Other packaging units on request.

STORAGE & SHELF LIFE

Contite G600 is very stable when properly handled. To avoid problems, it is very important to understand that these materials are both temperature and moisture sensitive. Therefore, materials should be stored in an area with temperatures not exceeding 35ºC (95ºF) or not lower than 5ºC (41ºF), the shelf life is approximately 9 months in unopened drums. All part used drums should be re-sealed to prevent the ingress of moisture.

HEALTH & SAFETY

Ordinary hygienic principles, such as washing the compounds from the hands before eating or smoking should be observed. Hands should be washed with a waterless cleaner followed by soap and water. Avoid breathing of vapours, prolonged contact with the skin, contact with open breaks in the skin, and ingestion. Use **Contite G600** with adequate ventilation.

TECHNICAL SERVICE

The Cormix International Technical Service Department is available to assist you in the correct use of our products and its resources are at your disposal entirely without obligation.

QUALITY ASSURANCE

ISO 9001: 2015 verified by TUV Nord.
ISO 14001 : 2015 verified by Lloyd's Register International.

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