

WATERPROOF X^{®1} INJECTION HOSE SYSTEM



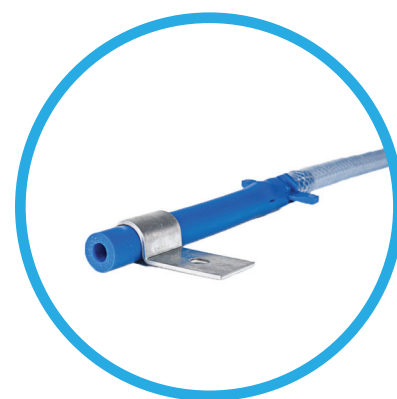
PRODUCT DESCRIPTION

Waterproof X^{®1} is the brand name of a state of art, multi-injectable injection hose system, used to seal joints in concrete against water egress.

Waterproof X^{®1} injection hose is used to transport grouting materials and then disperse them into the concrete joint via micro openings along the injection hose.

Waterproof X^{®1} injection hose is a highly resistant, robust, fully tested, single channel injection hose system that is made of specially developed PVC materials. Its expert design and state of art technology is the reason for its high performance, unique processing ability and total functionality.

Waterproof X^{®1} has the ability for multi-injectable grouting processes depending upon the grouting material used. This ability allows the system to be re-injectable for the life time of the structure, giving total peace of mind and assurance that the structure can be fully sealed and resealed, if and when required. A great advantage if movement or shrinkage occurs between concrete joint faces of the structure.



ADVANTAGES

- A perfect sealing solution
- Excellent installation features, fast and easy to install
- Economical handling due to simple, easy connection of accessory pieces
- Injection hose is supplied on handy spool that allows for uncomplicated cutting to length due to numerical markings printed at every metre along the hose
- Low consumption of grouting material due to optimum inner hose diameter
- Maximum safety features as grouting processes are performed under very low pressures
- Simple grouting process with multi-injectable capabilities
- Multiple grouting materials can be processed
- Ultimate grouting processes performed at 10m-12m intervals between injection points. Overlength injections of up to 30 metres can be achieved with special injection processes and use of correct equipment
- Highly economical through rapid laying times and rapid injection processes



AREAS OF APPLICATION

- All areas where construction joints are present and require sealing against water or require a particular joint sealing process
- Water excluding and water retaining structures
- Basements and below ground structures
- Tunnels and underground vaults
- Water and sewerage treatment plants
- Ground and elevated reservoirs and dams
- Suspended slabs and roof slabs
- Water tanks and pools

Note : The products design and performance, its intended use, installation and final confirmation and approval for use, must be provided by the project's Design Engineer and Project Manager.





GENERAL INFORMATION

Unsealed construction joints can decisively lessen the durability and utility-value of concrete structures. Nowadays, injection hose systems are being increasingly used for sealing construction joints in waterproof concrete structures. Their advantages are numerous when compared to traditional waterstop systems. It is not always required to inject the hose but usually only if the joint is leaking, thus making it a very cost effective procedure.

The area of application is usually at the construction joint (other application areas can be applied) where hardened and fresh concrete have to be joined in such a manner that the sealing effect of the construction joint is fulfilled equally.

Simple and rapid installation is achieved at all positions, levels and angles. **Waterproof X®1** can also be laid where the installation of traditional systems is constructively impossible; for example, on geometrical complicated surfaces such as sheet piling, diaphragm and contiguous pile walls and old to new construction.

Reliable sealing of construction joints, cracks in construction joints, and destroyed areas of concrete (gravel pockets and cavities) can be filled via **Waterproof X®1**. Previously this has not been possible to achieve with conventional waterstop systems.

Waterproof X®1 is used in all types of construction joints and in particular during the construction of water and sewage treatment plants, dams, barrages, underground garages, in tunnels and the construction of foundations, basements, bridges and power stations.



TECHNICAL FEATURES

PROFILE	COLOUR	OUTER DIAMETER	INNER DIAMETER	LENGTH MARKINGS
Circular	Blue	13mm	6mm	Every 1 metre

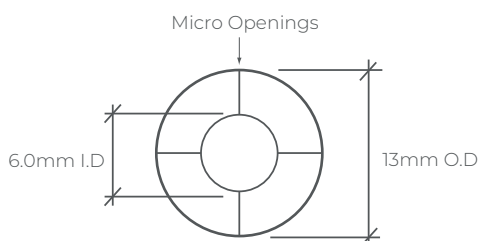


WATERPROOF X®1 MICRO OPENING DIMENSIONS

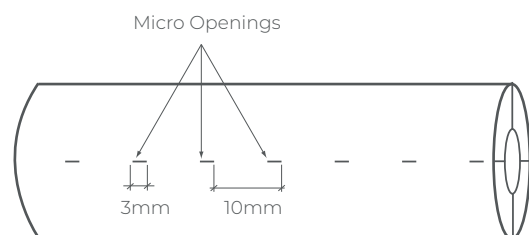
LENGTH	SPACING OF OPENINGS	LOCATION AROUND HOSE
Approximately 3mm	Approximately 10mm	4 equal positions

Waterproof X®1 injection hose is equipped with micro openings (injection ports), equally spaced over its entire circumference, which provides **Waterproof X®1** injection hose with optimum grouting characteristics. During the injection process, the microscopic ports open at 1 Bar and injected material is then allowed to perform its task of penetrating the construction joint that requires grouting. As a result, a more secure and longer lasting sealing of the construction joint is achieved.

The micro openings prevent any infiltration of concrete silt and foreign bodies into the injection hose itself. After successful injection, the pressure is released, which causes the micro openings to close. The injection channel can then be flushed out with water and without the threat of any injection material seeping back into the injection hose or water injecting into the joint during the flushing process. The specially designed micro openings are designed in such a way that they act as valves, allowing the release of material out of the hose but not back into it.



CROSS SECTION VIEW



SIDE VIEW





INJECTION MATERIALS

- Acrylic Gel
- P.U Resin
- E.P Resin
- Ultra-Fine Cement

Note: Only acrylic gel or ultra-fine cement can be used for re-injectable processes.



SYSTEM COMPONENTS

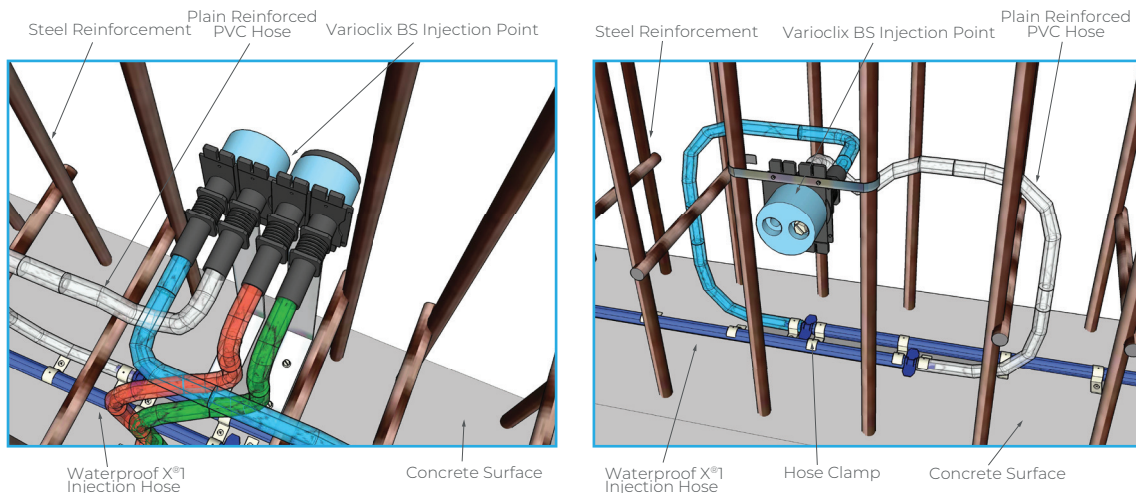
- **Waterproof X®1** injection hose - 120 metres roll - numerical markings every metre on hose.
- Plain Reinforced PVC Hose - only required for special applications to channel grouting material.
- Varioclix D Injection Point - dual injection point (can split into two single injection points).
- Varioclix BS Injection Point - dual injection point with blue spacer.
- Hose Clamp - holds hose into position on concrete surface, used in conjunction with impact plug.
- Impact Plug - securing pin for use with hose clamp.
- Hose Coupler/Joiner - joins **Waterproof X®1** hose or to join plain reinforced PVC hose to **Waterproof X®1** hose.
- Injection pumps, Injection resins & Injection nipples-used to perform the injection process.



INSTALLATION PROCEDURES

1. Installation of **Waterproof X®1** injection hose is preferably positioned in the middle of the substrate or if not possible, with a minimum of 100mm concrete cover from any outside edge.
2. **Waterproof X®1** injection hose must lie flat on the 1st concrete section with the hose clamps spaced at 150mm apart. If the concrete surface is rough, then the hose clamp spacings need to be closer so the hose is touching the surface of the concrete.
3. The standard length of **Waterproof X®1** injection hose, between injection points is approximately 10-12 metres. This will help achieve an ultimate injection process.
4. At the injection point locations where each individual hose length meets, an overlap of 150mm is required and with the two hoses laid parallel to each other at a distance of 30mm apart.
5. The Injection Points are to be installed in such a way as to allow access at all times.
6. For guaranteed security and performance, it is recommended that two layers of **Waterproof X®1** be placed if the concrete substrate is greater than 1000mm wide or thick.
7. Overlength applications of up to 30 metres are possible but the correct installation procedures, and use of SX-T Acrylic Gel injection material must be used via a 2K Pump.

Note : Please refer to the manufacturer's installation procedures and guidelines (available upon request).

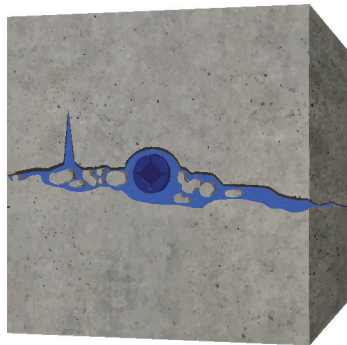




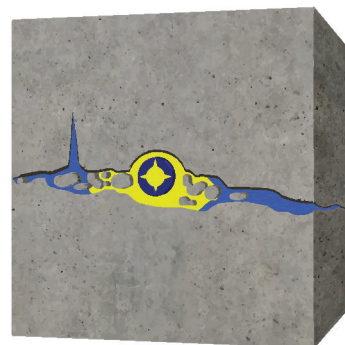
SIMPLE INJECTION PROCESS

1. Check the continuation of the hose by flushing with water or with air.
2. The hose is injected via the injection point until traces of the injected material are discharged from the vent end (opposite end of hose). This vent end is closed by means of an injection nipple as soon as the injected material flows freely (without air pockets) from the vent.
3. The flow and extent of the injection material in the concrete joint can be monitored during the injection process by means of the injection pump's pressure gauge, if using a 2K pump.
4. The injection process is continued until constant pressure has been reached. Constant pressure indicates that the concrete joint is absorbing no more injection material and thus signalling the end of the process.
5. Any injection material still within the injection hose is simply flushed out by means of a water pump or a 3K pump unit. Minimal pressure is required and it is simple and easy to achieve.
6. On completion of the flushing process, the injection channel is ready for future re-injections, if required.

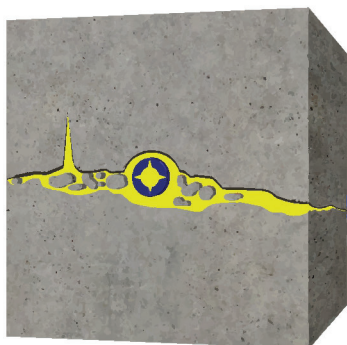
*Note: Installation and injection method processes are available upon request. Fully trained specialist contractors are available to perform the installation and injection processes for **Waterproof X®1**.*



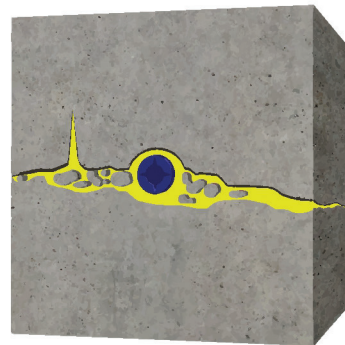
1. Water affected joint



2. Discharge of grouting material into the joint



3. Injected joint



4. **Waterproof X®1** flushed out ready for future re-injection



WRITTEN SPECIFICATION

Where shown on the drawings, the injection hose system shall be **Waterproof X®1**, multi-injectable, single channel, PVC injection hose with micro opening injection ports as supplied by **CORKJOINT**. The injection hose system must have the ability to be a multi-injectable for the life time of the structure and proof of this is to be provided by an independent laboratory test report and be submitted to and accepted by the engineer. All components of the system must be original parts supplied from the manufacturer.





HEALTH AND SAFETY INFORMATION

In confined spaces or in still air conditions, the use of a ventilation fan or suitable respirator should be used, and the advice and approval of the Site Safety Supervisor is essential. For further information or advice on health and safety precautions, safe handling, storage and correct disposal of products, please refer to the most recent product Safety Data Sheet (SDS), which is available upon request.






DISCLAIMER




The information and the recommendations relating to the application and end use of this product are given in good faith and are based on the information provided by the manufacturer of the product and/or the Company's current knowledge and experience in connection with the product when properly stored, handled and applied under normal conditions and no liability of final function at the job site is assumed. In practice, the differences in materials substrates and actual site conditions are such that no warranty in respect of merchantability of or fitness for particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any written and/or oral recommendations, or from any other advice offered by the Company. The Company also has no express or implied knowledge of any particular purpose for which the product is required and any such information given will not be taken into account in the supply of this product. No responsibility or liability by the Company will be accepted for misuse, misreading or derivation from recommended guidelines in respect of this product and the user shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith. The information contained in our brochure may change at any time without notice. Any use of this product; **Waterproof X®1** in any application should be approved as suitable for use/application by the Design Engineer and Project Manager.

Effective Date: 01 JUNE 2018

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