

# MasterSeal 909

Re-injectable hose system for construction joints in concrete

## Material Description

MasterSeal 909 is an advanced injection hose system for installation in construction joints, ready for subsequent injection of cementitious or polymeric compounds to ensure watertightness.

It is not affected by low temperature and immersion in water.

## Areas of Application

MasterSeal 909 is recommended for use in construction joints in all structures, which need to be injected to waterproof them, such as:

- Water retaining structures;
- Tunnels and basements;
- Buildings, bridge decks and other similar structures.

MasterSeal 909 is not recommended for use in expansion joints and in areas prone to significant settlements.

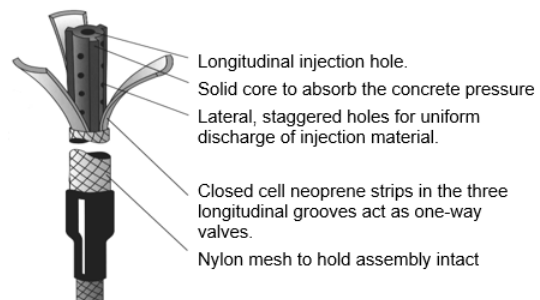
## Characteristics & Benefits

- Installation allows testing for water leaks – pre-injection with water shows areas of leakage and avoids unnecessary injection
- Hose is re-injectable – permits re-injection if leakage persists or reappears at a later date.
- Neoprene strips act as “one way valves” (fig 2) – prevents injection material from returning even under back pressure allowing for the hose to be cleaned and ready for later use.
- Solid inner core – does not collapse under concrete pressure and allows smooth flow of injected material.
- Chemically inert – does not deteriorate even if exposed to such injection materials as polyurethanes, vinyls esters, epoxies and cements
- Flexible – easy installation at corners without cutting and jointing.

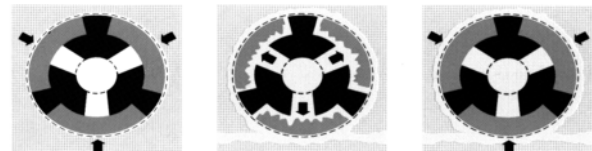
## Properties

### Figure 1: Construction

The unique hose (see Fig 1) has a solid blue inner core with a longitudinal injection hole. Three moulded grooves run along its length with a number of 3 mm diameter openings on each of them at 10 mm staggered intervals. Closed cell neoprene strips cover the three grooves and act as one way valves. The entire system is held together by a wide meshed nylon fabric sleeve.



### Figure 2 : Action of neoprene strips as non-return valves



- ❶ Due to the external concrete pressure, the neoprene strips seal the discharge holes and prevent the laitance from entering the hose.
- ❷ The neoprene strips compress due to the internal injection pressure, and allow the discharge of the injected material to fill the joint.
- ❸ With the removal of injection pressure, the neoprene strips reseal the discharge holes to prevent material from flowing back.

## Application

### Surface Preparation

The surface where the injection hose will be installed must be clean and smooth. The surface generated by an internal vibrator while compacting the concrete will usually be suitable without any need for additional trowelling.

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Before injection, patch up all surface honeycombs located close to the joint, by using a suitable repair mortar from the Master Builders Solutions range. Remove all loose materials from the surface, such as stones, dust, etc., before installing the hose.

## Hose Assembly

Fabricate **MasterSeal 909** hose in lengths of maximum 10 m. To both ends of the hose, securely fix approximately 400 mm (or as required by the structure) lengths of vent hose and cover the joints with 60mm of heat shrinkable plastic sleeve. The vent hose is used as an injection port and hence does not have discharge holes. The different colours (green and clear) of the vent hoses are to identify the function of each (input or exhaust) during injection.

## Placing

### Concrete substrate

Place **MasterSeal 909** along the centerline of the concrete section. In very thick sections, position the hose approx. 200-300 mm from the water entry side. Drill 6 mm diameter holes, approx. 50 mm deep and 250 mm apart, along the line of the hose. Clamp the hose firmly using **Master-Seal 909** clips to hold the hose in contact with the surface without allowing it to float up when fresh concrete is poured. Do not fasten the hose to reinforcement bars.

After installation, all **MasterSeal 909** hoses should be protected from oil, dirt, concrete splatter and mechanical damage and should be left clean to receive concrete cover. Ensure that the hose and at least 50 mm of the nylon vent hose are encased in at least 50 mm of concrete, with the vent ends (injection ends) clearly visible outside after pouring the concrete. The minimum distance between two parallel hose sections shall have a clearance of approximately 50mm.

Refer to the application guide for more details.

## Injection

The waiting time for injection after the pouring of concrete is dependent on the curing time of concrete. The minimum period should be 28 days.

Use **MasterSeal 901** (swellable methacrylate vinyl ester based resin) for injection depending on the nature of job.

Start injection always at one end.

Fill the hose with injection material using an injection pump until it flows out at the other end and plug that end with a special packer. Ensure the pump achieves an injection pressure of at least 2 bars and continue pumping while material is being consumed. When the pressure stabilises and no more material is being injected, increase the pressure to approximately 5 bars for 5 minutes only. When no drop in pressure is noticed, stop the injection.

Apply the same procedure from the other end of the **MasterSeal 909** hose to make sure that over the whole length of joint, a similar pressure distribution is achieved.

Immediately after injection, clean the hose of unset injection material by applying a vacuum pump and flushing with water. The hose is now ready for re-injection should it ever become necessary.

## Packaging

**MasterSeal 909** is packed in a carton including:

Hose	200 Lm
Concrete Clips	100
Vent Hose (input and exhaust)	20

## Storage

**MasterSeal 909** can be stored in original packaging, indefinitely, if stored in a covered place to protect it from settlement of oil, dust, concrete rubble etc. on the hose.

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## Disclaimer

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