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MASTERFLEX® 900

Injection hose for waterproofing construction joints in concrete

DESCRIPTION

MASTERFLEX 900 is an advanced injection hose system for installation in construction joints, ready for subsequent injection of cementitious or polymeric compounds to ensure watertightness.

The hose construction is tough, flexible, resilient and chemically inert. It is not affected by low temperature and immersion in water.

The unique hose of 19 mm outside diameter (see Fig 1) has a solid blue inner core with a longitudinal injection hole of 6 mm diameter. 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.

FIELDS OF APPLICATION

MASTERFLEX 900 is recommended for use in construction joints in all structures which need to be injection grouted to waterproof them, such as:

- water retaining structures
- tunnels and basements
- buildings, bridge decks and other similar structures.

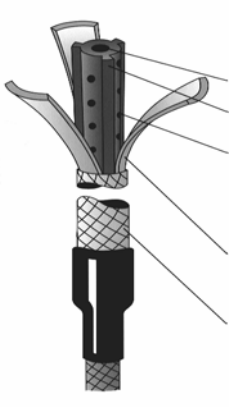
MASTERFLEX 900 is not recommended for use in expansion joints and in areas prone to significant settlements.

FEATURES AND BENEFITS

Installation allows testing for water leaks	Injection needs to take place only if the joint leaks. Avoids unnecessary injection.
Hose is re-injectible	Permits re-injection if leakage persists or reappears at a later date.
Neoprene strips act as 'one way valves'. (Fig 2)	Prevents injected material from returning even under back pressure.
Solid inner core	Does not collapse under concrete pressure. Allows smooth flow of injected material.
Chemically inert	Does not deteriorate even if exposed to such injection materials as polyurethanes, vinyl esters, epoxies and cements.
Flexible	Easy installation at corners without cutting and jointing.

PROPERTIES

Fig. 1 : Construction of **MASTERFLEX 900**



Longitudinal Injection hole.

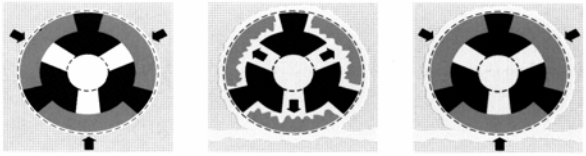
Solid core to absorb the concrete pressure.

Lateral, staggered holes for uniform discharge of injection material.

Closed cell neoprene strips in the three longitudinal grooves act as one way valves.

Nylon mesh to hold assembly intact

Fig 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.

Before injection, patch up all surface honeycombs located close to the joint to prevent injected material from leaking out of them, by using a suitable repair mortar from the MBT range.

Remove all loose materials from the surface, such as stones, dust, etc., before installing the hose.

Hose fabrication

Fabricate **MASTERFLEX 900** hose in lengths of max. 12 m. Shorter lengths are possible as required by the structure. 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 a heat

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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

Place **MASTERFLEX 900** (Fig 3) along the centreline of the concrete section. In very thick sections, position the hose approx. 200-300 mm from the water entry side. After installation, all **MASTERFLEX 900** 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.

Fixing

Drill 6 mm diameter holes, approx. 50 mm deep and 250 mm apart, along the line of the hose. Clamp the hose firmly using **MASTERFLEX 900** Clips (Fig 4), 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.

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. Contact MBT for advice if the injection has to be carried out earlier.

Use one of the following products for injection depending on the nature of job:

1. MASTERFLEX 801 (swellable vinyl ester based).
2. RHEOCEM 650 / RHEOCEM 800 / RHEOCEM 900 (micro cements).
3. Injection Resin LPL (Epoxy resin).
4. Polyurethane resins

Note : For 1,2 and 3 see separate data sheets.

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 20 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 **MASTERFLEX 900** hose to make sure that over the whole length of joint, a similar pressure distribution is achieved.

In case any material exudes from the wall surface or the joint, patch with cement mixed with RHEOMIX 410 T (see separate data sheet) - a rapid setting admixture.

Immediately after injection, clean the hose of unset injection material if MASTERFLEX 801 or a RHEOCEM microcement is used, by applying a vacuum pump and flushing with water. The hose is now ready for re-injection should it ever become necessary.

Fig 3 : Installation

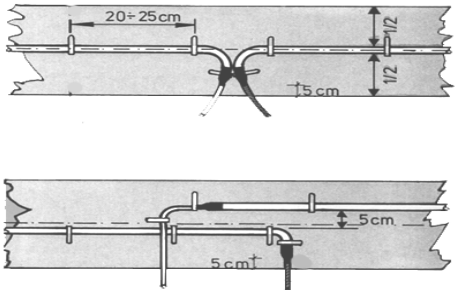
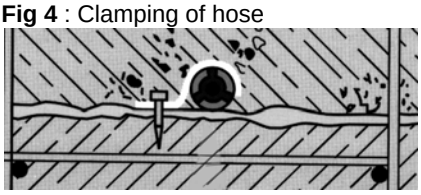


Fig 4 : Clamping of hose



PACKAGING

MASTERFLEX 900 is available in Combipacks of 200m

SHELF LIFE

Masterflex 900 can be stored in original packing, indefinitely, if stored as in a covered place to protect it from the settlement of oil, dust, concrete rubble, etc. on the hose.

PRECAUTIONS

For Health, Safety and Environmental recommendations, please consult and follow all instructions on the product Material Safety Data Sheet.

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