

MasterSeal 901

Methacrylate vinyl ester resin for crack injection

Material Description

MasterSeal 901 is a multi-component, solvent free, water swelling methacrylate vinyl ester based injection system that cures to form a flexible yet solid material with an excellent bond even to wet substrates. Depending on the degree of availability of moisture, the cured system swells reversibly up to 120% of its volume to act as an effective and permanent seal against ingress of water.

Areas of Application

MasterSeal 901 is recommended for sealing cracks, joints and crevices in concrete, rock and masonry to prevent water ingress. Applications include injection of:

- stabilised cracks and non-moving joints in structural concrete
- concrete construction joints (excluding expansion joints) using MasterSeal 909 injectable hose system. Please refer to MasterSeal 909 for more information.

Characteristics & Benefits

- Swells in contact with water by up to 120% - prevents water ingress even when the crack width varies.
- Water molecules held by molecular attraction – captured water does not get transported through capillaries.
- Unaffected by cycles of swelling and shrinking – continues to perform over long time, despite exposure to wetting and drying cycles.
- Good bond to damp surfaces – advantage in damp structures.
- Adjustable reaction time - between 20 and 60 minutes to allow for deep penetration.

Properties

	Mixture of resin
Viscosity at 20°C (mixture of components)	30-40 mPa.s
Density at 20°C	Approx. 1.07 g/ml
pH-value at 20°C	>8.5
Colour:	Yellow
Solids content:	68%
Chloride content:	<0.01%

Application

Surface Preparation

When being used in conjunction with MasterSeal 909, refer to MasterSeal 909 technical datasheet for correct surface preparation and application.

Cracks or Cold Joints

Clean the concrete surface along the crack or joint to 2 cm on either side, free from dust, oil, fungus, moss and other such contaminants to expose a clean substrate. Vacuum clean the surface free from dust and remove any standing water. Mask the crack at locations where injection ports are to be glued and seal the rest of crack or joint using MasterBrace 1444. The interval between ports depends upon the severity and extent of crack, the type of structure etc. In the case of a cold joint and that of a crack with openings on both faces of the structural element, seal the openings on all the sides.

Glue the injection ports at the predetermined locations directly on to concrete surface across the crack or joint using MasterBrace 1444. Alternatively use injection nipples in drilled holes instead of glue-on ports for injection of the resin system. Drill approximately 50 mm deep holes on the crack or joint at required intervals depending on the complexity of the job. Where the crack opens out on the opposite faces of a structural element more than 500 mm thick, injection holes should be drilled on both these faces. The diameter of the holes should accommodate the injection nipple.

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Fix injection nipples in each of the drilled holes using MasterBrace 1444 or if they are the injection packer type tighten with the nut provided.

Mixing

For partial quantities < 10kg:

- 1 litre of resin (Component A) is filled in a mixing container.
- Add the necessary quantity of accelerator, see the application guide for details
- Dissolve one bag of hardener powder (50ml) in 500ml of water and thoroughly mix all components.

For quantities of ≥ 10kg

- Dissolve one bag of hardener powder in 500ml of water. The hardener powder cannot be directly dissolved in the resin.
- Mix the 500ml of hardener solution (500ml) and the 10kg unit of resin.
- Add a partial quantity into a mixing container.
- Add the necessary quantity of accelerator, as set out in the application guide and thoroughly mix all components

Pot Life Chart

Pot-life Required (in minutes)					
Application Temperatures	20 min	30 min	40 min	50 min	60 min
5°C			120	105	
10 °C		142	105	80	
15°C		82	72	65	62
20°C	77	65	55	47	42
25°C	68	55	45	37	25
30°C	50	35	30	27	25
35°C	42	30	25	22	20
40°C	32	25	20	20	
45°C	27	22			
Amount of (in mls) accelerator per 1 litre of Resin					

Placing

Do not inject when the **MasterSeal 901** is under severe hydrostatic pressure. Reduce the pressure to minimise the washout of material before injecting. Where hydrostatic pressure exists, it is suggested to increase the accelerator content to achieve the shortest practical gel time (under these circumstances, it may be possible to use only a two line pump). Due to its long workability time of 20 to 60 minutes, **MasterSeal 901** can be easily injected with single component pumps. **MasterSeal 901** will react independently of the used material quantity and the ambient temperature. The data given in the metering chart are laboratory results, which may differ from actual results on site. Master Builders Solutions therefore recommends carrying out a test to determine the exact accelerator level before injection work is commenced.

For sealing existing cracks, joints and seams, inject the mixed resin system into the crevices starting from its wid-est part through the installed ports or nipples. In the case of vertical cracks start from the lowest level. Inject in each port or nipple (keeping all others except the next one closed) until the pressure is built up to the required level. If resin starts flowing out of the open port or nipple, close it.

Maintain the injection pressure for 5 minutes to allow total penetration and close the port before releasing the pressure. Continue until all the ports or nipples are injected. 24 hours after the injection, remove all the nipples or ports and fill in the resulting cavities with MasterBrace 1444.

Estimating Data

The quantity of **MasterSeal 901** required is dependent on the total volume of the void to be grouted, absorption of the substrate, loss and wastage. A trial may be conducted on a typical area to get an approximate estimation.

Cleaning

Tools and equipment contaminated with uncured **MasterSeal 901** can be easily cleaned using water. Hardened material should be softened by swelling with MasterSeal 955 and can then be removed mechanically without any great difficulty.



MasterSeal 90I

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Packaging

MasterSeal 90I is supplied as a 22.066kg kit:

Resin 2 x 10.0kg
 Accelerator 2 x 1.0kg
 Hardener Powder 3 x 22g

Shelf Life

MasterSeal 90I can be stored in tightly closed original containers for 12 months. Store in a cool dry place, under cover, out of direct sunlight and protect from extremes of temperature.

Precautions

For the full health and safety hazard information and how to safely handle and use this product, make sure that you obtain a copy of the Safety Data Sheet (SDS) from our office or website.

Disclaimer

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