

MasterFill PR 1400

Penetrating polyurethane water stopping Injection system

Material Description

MasterFill PR 1400 is a two-component catalysed polyurethane liquid which requires only mixing to form a high foaming very fast setting water-reactive injection resin.

MasterFill PR 1400 is designed to stop water seepage, consolidate loose rock formations, grouting for ground seepage and grouting in running water.

Areas of Application

- Construction pits - effective in sealing and protecting against water ingress during excavation.
- Embankments - provides structural reinforcement and water resistance for soil stabilization.
- Dams - ideal for preventing seepage and ensuring long-term durability of dam structures.
- Foundations - ensures reliable waterproofing and structural stability.
- Retaining walls - protects against hydrostatic pressure and potential water damage.
- Tunnelling - ensures waterproofing and structural integrity in underground environments.

Characteristics and Benefits

- Fast reacting, effective water stopping properties
- Excellent adhesion properties with both mineral and metallic surfaces
- Superb elastic properties that accommodate considerable movement between construction components
- Easy penetration into wet sand, giving high hardness
- Large volume, no shrinkage, makes it a very cost-effective product

Properties

Viscosity	@ 100 cps
Mix Ratio	0-10% Part B addition
Colour	Amber

Tested Characteristic / Standard	Result
Density ASTM D 1622	64 kg/m ³
Water Absorption ASTM D 2127	< 1%
Shear Strength ASTM C 273	135 kPa
Tensile Strength ASTM D 1623	186 kPa
Elongation ASTM D 1623	50%

Reaction Times

Initial Temperature	5°C	10°C	15°C	25°C
Reaction Times Measured with 5% MasterFill PR 1400 Part B				
Start of Foaming (Seconds)	10	9-10	9-10	8-9
End of Foaming (Seconds)	56	58	47	45
Foaming Factor*	35-50	35-50	35-50	35-50

Initial Temperature	5°C	10°C	15°C	25°C
Reaction Times Measured with 10% MasterFill PR 1400 Part B				
Start of Foaming (Seconds)	10-11	10-11	9	8
End of Foaming (Seconds)	47	45	38	32
Foaming Factor*	35-50	35-50	35-50	35-50

* The reaction is started by addition of 10% water to the fresh blend

MasterFill PR I400

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Application

For information about application, please obtain a copy of the "Polyurethane Injection MasterFlux PR systems" application guide from your local Master Builders Solutions Technical Sales Representative or download a copy from the website.

Preparation

Evaluate joint or rock fissure for injection. Drill holes either side of the defect, sloping towards the defect at an angle of approximately 45°.

The depth and distance from the crack will vary depending on water flow rates and site conditions. Insert packer at a depth which will allow resin to enter the defect without impediment. Consult Bluey for additional information.

Mixing

Calculate the required volume of MasterFill PR I400 Part B to be combined with MasterFill PR I400 Part A within the range specified on this data sheet. Measure the required quantity and add the two components together. Mix together using a slow speed mixer (400rpm) for at least 3 minutes or until a uniform mixture is achieved.

Application

Commence from the widest part of the crack or fissure and proceed injecting outwards along the crack or fissure in each direction. Turn on pump and slowly increase pressure to a maximum of 30 bar. Stop pumping for every litre injected and allow 1 - 2 minutes for reaction. Start and stop injection until the packer will no longer accept material or if the specified pressure has been reached. Move to the next packer and repeat injection process. Continue injection until crack is full and has been adequately sealed. Monitor the effectiveness of the work and allow to settle for 2 - 3 days before returning to site and completing additional injection if required.

Packaging

MasterFile PR I400 is available as a two-component system available in a 21 kg kit comprising:

Part A	20kg
Part B	1 kg

Storage & Shelf Life

Store in cool and dry warehouse conditions. Shelf life in these conditions is 12 months in unopened original bags.

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.

Specification Clause

A two-component catalysed polyurethane liquid which requires only mixing to form a high foaming very fast setting water-reactive injection resin.

It is used to stop water seepage, consolidate loose rock formations, grouting for ground seepage and grouting in running water. The suitable system to meet the technical performance requirement mentioned in properties section of this document.

MasterFill PR I400 from Master Builders Solutions or equivalent can be selected based on this specification.

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Disclaimer

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STATEMENT OF RESPONSIBILITY

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