

31	03 64 00	Injection Grouting
	31 01 70	Maintenance of Tunneling and Mining
	31 73 00	Tunnel Grouting

MasterRoc[®] MP 300

Low viscosity, flexible acrylic resin with adjustable set times and adjustable water to resin levels specially formulated for repairs of dams, sewer and storm pipe systems, and for pre-excavation grouting, strata control and soil permeation grouting.

Description

MasterRoc MP 300 product is a versatile, low viscosity resin that facilitates adjustable set times with adjustable water to resin contents. MasterRoc MP 300 product forms a flexible crosslinked gel with excellent adhesive properties. MasterRoc MP 300 product retains its excellent swelling property in the presence of water, even after dry periods.

Applications

Recommended for use in:

- Sealing and consolidation in damp or wet areas
- Concrete repair
- Box culvert joint repair
- Storm and sewer pipe sealing
- Permanent water sealing of tunnels, shafts, concrete linings and masonry
- Pre-excavation injection

Features

- Acrylamide-free
- Re-swells upon exposure to moisture after dry periods
- Cured material is a highly flexible gel
- Excellent adhesive properties, even on damp or wet surfaces
- Resistant to acidic and alkaline solutions, as well as many other solvents
- Very low viscosity (close to that of water)
- Controllable gel time (between 10 seconds and 30 minutes at 68 °F (20 °C))
- Can be used with colored dye for better detection
- Environmentally preferable

Benefits

- Swelling-fitted filling of cracks and fissures
- Can accommodate structural and ground movements
- Self-heals even after dry periods
- Very low viscosity helps in deep penetration of the product into very fine cracks or fissures and long flow paths, even at low pressure
- Harmless when in contact with groundwater, with no emission of dangerous substances

Performance Characteristics

Technical Data

MasterRoc MP 300 Resin

Appearance:	Light brown liquid
Density*:	9.58 lb/gal (1.15 kg/L)

MasterRoc MP 300 Accelerator

Appearance:	Clear liquid
Density*:	9.16 lb/gal (1.10 kg/L)

MasterRoc MP 300 Hardener

Appearance:	White powder
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MasterRoc MP 300 Emulsion

Appearance:	White emulsion
Density*:	8.45 lb/gal (1.02 kg/L)

Mixed material (Part A and Part B)

Appearance:	Light brown liquid
Viscosity*:	2 - 5 mPa·s (cP), depending on mixing ratio
Density*:	8.3 lb/gal (1.0 kg/L)

*@ 68°F (20°C)

Guidelines for Use

Dosage and Application Procedure: Part A (activated resin) and Part B (activated hardener) have to be prepared prior to injection, based on the desired gel time.

To prepare Part A, mix MasterRoc MP 300 Resin with MasterRoc MP 300 Accelerator.

To prepare Part B, dissolve MasterRoc MP 300 Hardener powder in water. Typical Part B solution contains 4% hardener powder by weight. To use hardener solution with different amount of solids, please contact your local Master Builders Solutions Sales Representative.

Alternatively, especially if increased density of the cured gel is required, Part B can also be prepared by replacing all or part of the water with MasterRoc MP 300 Emulsion. Please contact your local Master Builders Solutions Sales Representative for additional information or guidance.

Table 1 below shows the dosage of accelerator in relation to the gel time at different temperatures (Using a 4% hardener solution as Part B).

Table 1: MasterRoc MP 300 Accelerator dosages vs Gel times

Accelerator Dosage		Gel Time, min:s	
Percent by Mass of Resin	fl oz/gal (mL/L) of Resin	50 °F (10 °C)	70 °F (21 °C)
3.0	4.3 (33.5)	1:45	1:30
4.0	5.7 (44.7)	1:05	0:55
5.0	7.1 (55.8)	0:55	0:40
6.0	8.6 (67.0)	0:45	0:35
7.0	10.0 (78.1)	0:35	0:30
8.0	11.4 (89.3)	0:30	0:25
10.0	14.3 (111.6)	0:25	0:20
12.0	17.1 (134.0)	0:20	0:18
15.0	21.4 (167.4)	0:17	0:15

Note: Gel time is dependent on the solid content of the hardener solution, amount of accelerator added, temperature of the activated components, and the temperature of the ground or structure. For information on getting gel times outside of the range shown in Table 1, please contact your local Master Builders Solutions Sales Representative.

The following example illustrates how to prepare Part A and Part B to get a gel time of 30 seconds at a temperature of 70 °F (21 °C), with 44 lb (20 kg) pail of MasterRoc MP 300 Resin.

To prepare Part A, mix one pail (44 lb (20 kg)) of MasterRoc MP 300 Resin with 52 fl oz (1.3 L) of MasterRoc MP 300 Accelerator (which is around 7% of the resin by mass).

To prepare Part B, dissolve 27 fl oz (1.7 lb or 0.8 kg) of MasterRoc MP 300 Hardener in 4.9 gal (18.3 L) of water.

The activated components are injected in the ratio of 1:1 by volume, using a two-component injection pump, equipped with a static in-line mixer.

The activated resin (Part A) and the activated hardener (Part B) have a pot life of approximately 8 hours at 68 °F (20 °C).

Cleaning: Injection equipment and hoses can be cleaned of uncured material using water (if possible, with a detergent).

Storage and Handling

Storage Temperature: MasterRoc MP 300 product components should be kept in a dry place within a temperature range of 40 °F to 85 °F (5 °C to 30 °C) and be protected from direct sunlight. In unopened, tightly closed containers, the components of MasterRoc MP 300 product can be stored for up to 12 months.

Prolonged exposure to sunlight and high temperatures (above 85 °F (30 °C) may cause the MasterRoc MP 300 product components to solidify.

Caution: Do not let MasterRoc MP 300 Accelerator and MasterRoc MP 300 Hardener to come in contact with each other directly prior to field mixing, as the exothermic reaction between the two can result in fire.

MasterRoc MP 300 Accelerator and MasterRoc MP 300 Hardener are not compatible with aluminum and hence, aluminum equipment or tools should not be used to handle them.

Safety: Avoid contact with skin and eyes by using the required personal protective equipment, such as waterproof boots, overalls, gloves and safety glasses.

If contact with skin occurs, wash thoroughly using soap and water. If contact with eyes occurs, rinse thoroughly with water and seek medical advice. The cured MasterRoc MP 300 product is harmless.

Uncured products should be prevented from entering local drainage systems and water courses. Spillage must be collected using absorbent materials such as sawdust and sand and, disposed of in accordance with local regulations.

Refer to the Safety Data Sheet for further safety measures

Packaging

MasterRoc MP 300 Resin: 44 lb (20 kg) (4.6 gal (17.4 L)) pail

MasterRoc MP 300 Accelerator: 6.2 lb (2.8 kg) (0.7 gal (2.5 L)) bottle

MasterRoc MP 300 Hardener: 2.2 lb (1.0 kg) bottle

MasterRoc MP 300 Emulsion: 44 lb (20 kg) (5.2-gal (19.7 L)) pail

Related Documents

Safety Data Sheets: MasterRoc MP 300 (Resin, Accelerator, Hardener, and Emulsion)

Additional Information

For additional information on MasterRoc MP 300 product, contact your local sales representative.

Master Builders Solutions creates technologies for the construction industry inspiring people to build better. We are active in ~40 countries and operate 35 production sites with over 1,600 employees. We develop, produce, and market high-quality chemical admixtures, as well as adjacent core technologies, to master the challenges of today and support a decarbonized future. Our people are pivotal and pair leading technologies and a strong brand heritage to surpass our customers' expectations and drive continuous value creation.

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