BASF
The Chemical Company

Technical Data Guide

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Epoxy
Injection Grouting

Masterflow® 647R Repair Grout

Liquid epoxy grout for pressure or gravity application

PACKAGING
Masterflow 647R is available as a 2.5 gallon (9.43 liter) unit:

Part A 1.5 gallons (5.66 liters) in a 3.5 gallon steel pail.
Part B 1.0 gallon (3.77 liters) in a 1 gallon steel can.

YIELD
2.5 gallons yields 575 in^3 (0.33ft^3 or 0.009m^3) of mixed product

When estimating project requirements, be sure to account for application variables.

STORAGE
Store in unopened containers at temperatures at or below 80º F (27º C). Freezing temperatures during storage will not harm the product. However, the components should be conditioned to temperatures between 70º and 80º F (21º – 27º C) prior to use.

SHELF LIFE
2 years (for both part A and part B) when properly stored

RELATED DOCUMENTS
- Masterflow 647R Installation Guide
- Masterflow 647R MSDS

DESCRIPTION
Masterflow 647R grout is a two component, modified epoxy resin-based grout. It is specially formulated for grouting cracks in structures and machinery foundations. It may be applied using either pressure injection or gravity feed. The material will penetrate and fill voids cracks, and fissures. Masterflow 647R exhibits excellent adhesion to concrete or steel that is properly prepared whether wet, dry or oil-contaminated concrete. It can be used to repair cracks in concrete that contain water. (Not for use in underwater repair)

PRODUCT HIGHLIGHTS
- Structural grade epoxy and can be used under sustained loads
- Moisture tolerant helping it bond to damp concrete
- Oil tolerant allows bonding to oil-contaminated concrete
- Chemical resistant for use in a wide range of application environments
- Liquid resin can be stored at low temperature (20 °F) making it easy to transport and store
- Low viscosity helps to penetrate fine cracks
- Solvent-free; VOC compliant
- Fast cure rate for rapid return to service
- Simple mix ratio for ease of use in the field
- Can be extended for wide range of options for crack repair and void filling
- Accelerator available for increased usage capabilities at low temperatures

APPLICATIONS
- Pressure injection of grouted baseplates beneath compressors, cement mills and other vibrating and rotating machinery
- Thin bed repair grout applications
- Concrete wall repair
- Repair of cracked concrete
- Precast pile bonding
- Bonding post-tensioned beams

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Composition

Masterflow 647R is a two-component, modified epoxy resin-based grout.

Compliances

- ASTM C881, Type I, II and IV, Grade 1 and 2.

Test Data

Time (hrs)	55°F psi	(13°C) Mpa	75°F psi	(24°) Mpa	90°F psi	32 °C Mpa
Compressive Strength Cure Rate						
8	-	-	800	6	1,100	8
16	-	-	3000	23	7100	49
24	500	3	4900	34	7800	54
48	5300	37	7800	54	9800	68
72	6400	44	9700	67		
96	8800	61				
120	9800	68				
144	10500	72				

Physical Properties

PROPERTY	RESULTS	TEST METHOD
Compressive Strength	10,000 psi (70 MPa)	ASTM C 579
Flexural Properties		ASTM D 790
Strength	9,800 psi (68 MPa)	
Elongation	4.7%	
Coefficient of Thermal Expansion		ASTM C 531
33° to 74°F in/in °F (0.6 to 23 °C cm/cm °C)	46 x 10^{-6} (83 x 10^{-6})	
74° to 110 °F (23 ° to 43 °C)	47 x 10^{-6} (85 x 10^{-6})	
Density	68.7lbs./ft^3 (1100kg/m^3)	ASTM C 905
Water Absorption	+0.4%	ASTM C 413
Flash Point (Pensky-Martens Closed Cup)		
Resin	230 ˚F (110 ˚C)	
Hardener	230 ˚F (110 ˚C)	

HOW TO APPLY

Consult the MasterFlow 647R Repair Grout Installation Guide. BASF recommends that the user request the services of the local representative for a pre-job conference to plan the installation.

FOR BEST PERFORMANCE

- Application temperature range is from 50 to 105˚ F (10 to 41˚ C). Please note that above 90º F (32º C), working time will be significantly reduced.
- Neat epoxy binder should not be applied greater than 1/4" (6 mm) in thickness. If greater thickness is required, contact BASF Technical Service.
- Bonding to a damp or oily surface is possible but less desirable than bonding to a dry, oil-free surface. When applying this product to a damp surface, remove free water by oil-free airblast. Excess oils should be removed using absorbent materials or solvent cleaning.
- Precondition all components to 70 to 80ºF (21 to 27ºC) for 24 hours before using.
- Proper application is the best responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not supervising or providing quality control on the jobsite
- Do not add solvents, thinners or water to epoxy components.

HEALTH, SAFETY AND ENVIRONMENTAL

Read, understand and follow all Material Safety Data Sheets and product label information for this product prior to use. The MSDS can be obtained by visiting buildingsystems.basf.com, e-mailing your request to basfbscst@basf.com or calling 1(800)433-9517. Use only as directed. **For medical emergencies only, call ChemTrec® at 1(800) 424-9300.**

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