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Non-Metallic
Non-Shrink Grouting

MasterFlow[®] 555

Fluid, general construction, mineral aggregate non-shrink grout

PACKAGING

50 lb (22.6 kg) multi-wall paper bags

YIELD

One 50 lb (22.6 kg) bag of MasterFlow 555 mixed with 11 lbs (5 kg) or 1.3 gallons (4.9 L) of water (Fluid mix) provides approximately 0.46 ft³ (0.013 m³) of grout. Water requirements may vary with mixing efficiency and other variables.

STORAGE

Store in unopened containers in cool, clean, dry conditions

SHELF LIFE

50 LB BAG: 12 months when properly stored

VOC CONTENT

0 g/L less water and exempt solvents

DESCRIPTION

MasterFlow 555 is a Fluid, non-shrink mineral-aggregate grout. It is ideally suited for grouting machines or plates requiring optimum load bearing support.

PRODUCT HIGHLIGHTS

- Meets ASTM C 1107 requirements at a fluid consistency (20–30 second flow)
- Wide application temperature range of 50 to 85 °F (10 to 29 °C).
- Can be mixed at a wide range of consistencies
- Hardens free of bleeding when properly placed and yields a high effective bearing area for proper support and load transfer
- No accelerators, including chlorides or other similar salts, will not contribute to corrosion of reinforcing steel

APPLICATIONS

- Interior and exterior
- General construction applications
- Where ease of placement of a fluid grout is desired
- Where high one-day and later-age compressive strengths are desired
- Machinery and equipment: baseplates and soleplates
- Anchor bolts, reinforcing bars, and dowel rods
- Bedding grout for precast panels
- Backfilling, underpinning foundations, and pressure grouting of slabs needing alignment
- Repairing concrete, including grouting voids and rock pockets

SUBSTRATES

- Concrete

HOW TO APPLY

SURFACE PREPARATION

1. Substrate must be structurally sound and fully cured (28 days).
2. The surface to be grouted must be clean, SSD, strong, and roughened to a CSP of 5–9 following ICRI Guideline 310.2 to permit proper bond.
3. When dynamic, shear or tensile forces are anticipated, concrete surfaces should be chipped with a "chisel-point" hammer, to a roughness of (plus or minus) 3/8" (10 mm). Verify the absence of bruising following ICRI Guideline 210.3.
4. Concrete surfaces should be saturated (ponded) with clean water for 24 hours just before grouting.
5. All freestanding water must be removed from the foundation and bolt holes immediately before grouting.
6. Anchor bolt holes must be grouted and sufficiently set before the major portion of the grout is placed.
7. Shade the foundation from sunlight 24 hours before and 24 hours after grouting.

Technical Data

Composition

MasterFlow 555 grout is a fluid, nonshrink mineral-aggregate grout.

Compliances

- ASTM C 1107

Test Data

| PROPERTY | RESULTS | | | | TEST METHOD |
|--|---------------------------------------|---|-------------------------------|--------------------------|--------------------------------------|
| Compressive Strengths, psi (MPa) | | | | | ASTM C 942, according to ASTM C 1107 |
| | Consistency | | | | |
| | Plastic¹ | Flowable² | Semi-Fluid³ | Fluid⁴ | |
| 1 day | 4,200 (29) | 3,700 (26) | 3,000 (21) | 2,000 (14) | |
| 3 days | 5,800 (40) | 4,500 (31) | 4,200 (29) | 4,000 (27) | |
| 7 days | 7,300 (50) | 6,500 (45) | 6,000 (41) | 5,500 (39) | |
| 28 days | 8,500 (59) | 7,500 (52) | 7,000 (48) | 6,250 (43) | |
| Volume Change | | | | | ASTM C 1090 |
| | % Change of MasterFlow 555 | % Requirement of ASTM C 1107 | | | |
| 1 day | > 0 | 0.0–0.30 | | | |
| 3 days | 0.04 | 0.0–0.30 | | | |
| 7 days | 0.06 | 0.0–0.30 | | | |
| 28 days | 0.07 | 0.0–0.30 | | | |
| Setting time, fluid consistency⁴ Final set (hr:min) | 6:00 | | | | ASTM C 191 |

¹100–125% flow on flow table according to ASTM C 230.

²125–145% flow on flow table according to ASTM C 230.

³30–40 seconds through flow cone according to ASTM C 939.

⁴20–30 seconds through flow cone according to ASTM C 939.

The above data was developed under controlled laboratory conditions. Properties in the field may vary. Expect reasonable variations from these results, depending on jobsite or test conditions.

Jobsite Testing

If strength tests must be made at the jobsite, use 2" (51 mm) metal cube molds as specified by ASTM C 942 or ASTM C 1107. DO NOT use cylinder molds or plastic cube molds. Control testing on the basis of the desired placing consistency rather than strictly on the water content.

FORMING

- Forms should be liquid tight and nonabsorbent. Seal forms with putty, sealant, caulk or polyurethane foam.
- Moderately sized equipment should utilize a head form sloped at 45 degrees to enhance the grout placement. A moveable head box may provide additional head at minimum cost.
- Side and end forms should be a minimum 1" (25 mm) distant horizontally from the object grouted to permit expulsion of air and any remaining saturation water as the grout is placed.
- Leave a minimum of 2" between the bearing plate and the form to allow for ease of placement.
- Use sufficient bracing to prevent the grout from leaking or moving.
- Eliminate large, non-supported grout areas wherever possible.
- Extend forms a minimum of 1" (25 mm) higher than the bottom of the equipment being grouted.
- Expansion joints may be necessary for both indoor and outdoor installation. Consult your local BASF field representative for suggestions and recommendations.

TEMPERATURE

- For nonshrink grouting, store and mix grout to produce the desired mixed-grout temperature based upon ambient temperatures and jobsite conditions.

Recommended Temperature Guidelines for Nonshrink Grouting

| | MINIMUM °F (°C) | MAXIMUM °F (°C) |
|--|--------------------|--------------------|
| Foundation and plates | 50 (10) | 85 (29) |
| Mixing water | 50 (10) | 85 (29) |
| Grout at mixed and placed temperature | 50 (10) | 85 (29) |

- If temperature extremes are anticipated or if special placement procedures are planned, contact your local BASF representative for assistance.
- When grouting at minimum temperatures, be certain that foundation, plate, and grout temperatures do not fall below 50 °F (10 °C) until after final set. Protect the grout from freezing (32 °F or 0 °C) until it has attained a compressive strength of 3,000 psi (20.7 MPa) in accordance with ASTM C 942 or ASTM C 1107.

MIXING

By using the minimum amount of water to provide the desired workability, maximum strength will be achieved. Whenever possible, mix the grout with a mortar mixer or an electric drill with a paddle such as ICRI 320.5 type A, D, E, F, G or H. Put the measured amount of potable water into the mixer, add grout, then mix till a uniform consistency is attained. Do not use water in an amount or a temperature that will cause bleeding or segregation.

Note: The water requirement may vary due to mixing efficiency, temperature, and other variables.

- Precondition material to 70 °F ±5° (21 °C ±3°) before mixing.
- MasterFlow 555 grout should be mixed with a mechanical mixer for at least 3 minutes. For a fluid consistency, start with 11 lb (5 kg) or 1.3 gallons (4.9 L) per 50 lb (22.6 kg) bag. (Use potable water only.) Adjust mixing water, as needed, to establish a fluid consistency (20–30 seconds) through a flow cone according to ASTM C 939 / CRD C 611). For a semi-fluid consistency, start with 8.3 lb (3.8 kg) or 1.0 gallon (3.8 L) per 50 lb (22.6 kg) bag. (Use potable water only.) Adjust mixing water, as needed, to establish a semi-fluid consistency (30–40 seconds) through a flow cone according to ASTM C 939/CRD C 611). Less mixing water will be required to achieve stiffer consistencies. Slowly add the dry grout to mixing water.
- The water demand will depend on mixing efficiency and material and ambient temperatures. Use the minimum amount of water required to achieve the necessary placement consistency. Recommended flow is 20–30 seconds or greater using the ASTM C 939 Flow-Cone Method. Before placing grout at ambient temperatures below 50 °F (10 °C) and above 85 °F (29 °C), consult your BASF representative.
- Moderate size batches of grout are best mixed in one or more clean mortar mixers.
- Mix grout a minimum of 3 minutes after all material and water are in mixer. Use mechanical mixer only. Do not retemper grout by adding water.
- Do not mix more grout than can be placed in approximately 20 minutes or less, depending on ambient temperatures.

APPLICATION

- Place MasterFlow 555 in a continuous pour. Discard grout that becomes unworkable. Place grout from one side to avoid entrapment of air. Make sure that the grout fills the entire space being grouted and remains in contact with the plate throughout the grouting process. Straps may be used to move the grout to ensure the entire space is filled. DO NOT VIBRATE.
- Immediately after placement, trim the surfaces with a trowel and cover the exposed grout with clean wet rags (not burlap). Maintain moisture for 5–6 hours.
- The grout should offer stiff resistance to penetration with a pointed mason's trowel before the grout forms are removed or excessive grout is cut back.
- To further minimize the potential moisture loss within the grout, cure all exposed grout with an approved membrane curing compound (compliant with ASTM C 309 or preferably ASTM C 1315) immediately after the wet rags are removed.
- For placements greater than 6" (152 mm) in depth, product should be extended with aggregate. Aggregate extension is dependent upon the grout type, placement, application requirements, and is typically required for placement depths beyond the limitation of the neat material. The aggregate should be washed, graded, saturated, surface-dry (SSD), high-density, free from deleterious materials, and comply with the requirements of ASTM C 33. Consult BASF Technical Service for additional guidance.

FOR BEST PERFORMANCE

- Contact your local representative for a pre-job conference to plan the installation.
- Beveling of grout shoulders will reduce cracking.
- MasterFlow 555 should be placed at a fluid to flowable consistency at a 50 to 85 °F (10 to 29 °C) application temperature range. Use cold and hot weather concreting practices (ACI 305 and ACI 306) when grouting within 10 °F (6 °C) of these minimum and maximum temperature ranges.
- Minimum placement depth is 1" (25 mm).
- Do not add plasticizers, accelerators, retarders, or other additives
- Where precision alignment and severe service, such as heavy loading, rolling, or impact resistance are required, use metallic-reinforced, non-catalyzed MasterFlow 885 grout. If the amount of impact resistance needed is not great enough to require metallic reinforcement, use natural-aggregate, MasterFlow 928.
- Use MasterFlow 816, MasterFlow 1205, or MasterFlow 1206 post-tensioning cable grouts when the grout will be in contact with steel stressed over 80,000 psi (550 MPa).
- Make certain the most current versions of product data sheet and SDS are being used; visit www.master-builders-solutions.basf.us to verify the most current versions.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

HEALTH, SAFETY AND ENVIRONMENTAL

Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. The SDS can be obtained by visiting www.master-builders-solutions.basf.us, e-mailing your request to basfbscst@basf.com or calling 1(800)433-9517. Use only as directed.

**For medical emergencies only,
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