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Technical Data Guide

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Non-Metallic  
Non-Shrink Grouting

# MasterFlow® 110AN

Rapid-setting grout and anchoring cement for concrete and masonry

FORMERLY SONOPOST™

## PACKAGING

50 lb (22.6 kg) pails

## YIELD

– 0.40 ft<sup>3</sup> (0.011 m<sup>3</sup>) per

50 lb (22.6 kg) pail

– 0.60 ft<sup>3</sup> (0.017 m<sup>3</sup>) per 50 lb (22.6 kg) pail when extended with 50 lbs (22.6 kg) of aggregate.

## STORAGE

Store in unopened containers in cool, clean, dry conditions

## SHELF LIFE

1 year when properly stored

## VOC CONTENT

0 g/L less water and exempt solvents

## DESCRIPTION

MasterFlow 110AN is designed for a variety of grouting and anchoring applications where high initial strengths are useful, including the anchoring of railings, bolts, and posts as well as the grouting of machinery and equipment bases.

## PRODUCT HIGHLIGHTS

- Only requires the addition of potable water
- Pourable
- Fast setting
- Hardens free of bleeding when properly placed and yields a high effective bearing area for proper support and load transfer
- Shrinkage compensated and thus reduces stress at bondline

## APPLICATIONS

- Railings
- Anchor bolts
- Posts
- Normal loads for columns and baseplates
- Structural columns
- Seating bolts
- Reinforcing rods
- Power line stanchions

## SUBSTRATES

- Concrete
- Masonry

## HOW TO APPLY

### SURFACE PREPARATION

#### ANCHORING

1. In sound fully cured concrete, drill holes wide enough to accept the anchor bolts (clearance not less than ¼" [6 mm]). Make certain the hole diameter will allow the material to readily flow between the anchor bolt and the wall of the cavity. Typically, the diameter of the hole should be a minimum of 3 times the diameter of the post.

2. For added strength, undercut the base of the hole by tilting the drill and working it back and forth.

3. Blow or vacuum out all loose material to ensure a clean, dust-free surface.

4. Before application, dampen the cavity to a saturated surface-dry (SSD) condition, but do not allow water to pond in the bottom of the hole.

#### BASEPLATE GROUTING

1. Steel surfaces must be free of dirt, oil, grease, or other contaminants.

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.

**Technical Data**

**Composition**

MasterFlow 110AN is composed of Portland cement and silicon dioxide (quartz).

**Compliances\***

- ASTM C 1107, Class B
- CRD-C-621

\*As modified for rapid-setting grout

**Typical Properties**

PROPERTY	VALUE
<b>Pullout strength, lbs, at 1 hour</b>	> 5,000

**Test Data**

PROPERTY	RESULTS	TEST METHOD
<b>Compressive strength, psi (MPa)</b>		ASTM C 109
1 hour	1,500 (10.3)	
7 days	6,500 (44.8)	
28 day	8,000 (55.2)	

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.

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.

**FORMING**

**BASEPLATE GROUTING**

1. Forms should be liquid tight and nonabsorbent. Seal forms with putty, sealant, caulk or polyurethane foam.
2. 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.
3. 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.
4. Leave a minimum of 2” between the bearing plate and the form to allow for ease of placement.

5. Use sufficient bracing to prevent the grout from leaking or moving.
6. Eliminate large, non-supported grout areas wherever possible.
7. Extend forms a minimum of 1” (25 mm) higher than the bottom of the equipment being grouted.
8. Expansion joints may be necessary for both indoor and outdoor installation. Consult your local BASF field representative for suggestions and recommendations.

**MIXING**

1. Precondition MasterFlow 110AN to 70° F ±5° (21° C ±3°) before mixing.
2. MasterFlow 110AN requires only the addition of potable water to achieve the desired placement consistency. Use the minimum amount of mixing water to achieve the necessary pourable placement consistency, approximately 2.3 fl oz/1 lb (71.2 ml/ 0.45 kg)
3. For best results for small installations, mix mechanically at slow speed with a ¾” drill and paddle mixer. For larger batches, a forced action mortar mixer is recommended. Mix no longer than 3 minutes to achieve a uniform, lump-free consistency.
4. Placement time is 10–12 minutes at 70° F (21° C) and 50% relative humidity.

**APPLICATION**

**ANCHORING**

1. Place the anchor bolts.

2. Pour a small amount of the mixed MasterFlow 110AN into the hole and work the bolt up and down to eliminate air pockets.
3. Fill the rest of the hole level with the surrounding concrete or slightly overfill to prevent ponding of water. Pour from one side only to ensure a good, even flow.
4. MasterFlow 110AN will set hard in 15 minutes, but extreme temperatures will lengthen or shorten set times. Do not attach nuts for 90 minutes. MasterFlow 110AN strengthens as it cures, so allow more time when installing heavy equipment.
5. Follow ACI 305 and 306 for hot or cold weather guidelines.

**BASEPLATE GROUTING**

1. Place MasterFlow 110AN 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.**
2. 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.
3. 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.

4. 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.
5. For placements greater than 2" (51 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.
6. Follow ACI 305 and 306 for hot or cold weather guidelines.

#### **CURING**

Cure all exposed grout shoulders by wet curing for 24 hours and by applying a curing compound compliant with ASTM C 309 or preferably ASTM C 1315.

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#### **CLEAN UP**

Clean tools and equipment with clean water immediately after use. Cured material must be removed mechanically.

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#### **FOR BEST PERFORMANCE**

- Do not use below 40° F (4° C) or over 90° F (32° C).
- Do not use in pours with less than ¼" (6 mm) clearance.
- If MasterFlow 110AN is extended with aggregate, the minimum depth of placement is then ½" (13 mm).
- Depth of the anchoring system must be determined in relation to the height and loading of its member. Contact BASF Technical Service for further information.
- Beveling of grout shoulders will reduce cracking.
- 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 1341 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](http://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.

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#### 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](http://www.master-builders-solutions.basf.us), e-mailing your request to [basfbcst@basf.com](mailto:basfbcst@basf.com) or calling 1(800)433-9517. Use only as directed.

**For medical emergencies only,  
call ChemTrec® 1(800)424-9300.**

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