

Related Bulletins:

Data Sheet 9D32

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Specification Bulletin 9S34

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Master Builders Technologies
Grout Products
INSTALLATION BULLETIN 9I51**EMBECO® 885 GROUT & MASTERFLOW® 928***Application Information and Suggestions on Procedures for Precision Grouting***IMPORTANT: READ THIS FIRST**

Master Builders, Inc. does not warrant the performance of this product unless the instructions of this document and other related Master Builders documents are adhered to in all respects.

Surface Preparation

1. Steel and concrete surfaces shall be free of dirt, oil, grease or other contaminants.
2. All surfaces should be roughened to remove laitance and expose sound concrete.
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 in..
4. Concrete surfaces should be rough and saturated (ponded) with clean water for 24 hours just prior to grouting.
5. All free standing water must be removed from the foundation and bolt holes prior to grouting.
6. Bolt holes must be grouted before the major portion of grout is placed.
7. Shade the foundation from summer sunlight 24 hours before and 24 hours after grouting.

Forming

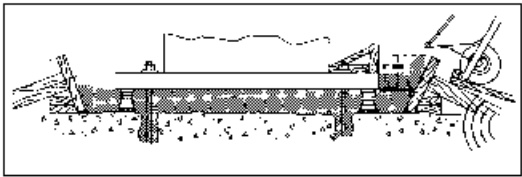
1. Forms should be liquid tight and nonabsorbent. Seal forms with grout, putty or caulking compound.
2. Moderately sized equipment should utilize a head form sloped at 45 in. to enhance the grout placement. A moveable head box may be a way to provide additional head at minimum cost.
3. Side and end forms should be a minimum 1 in. horizontally away from the object grouted to permit expulsion of air and any remaining saturation water as the grout is placed.

NOTE: A minimum of 2 in. is required at the area where the grout is to be placed.

4. Sufficient bracing is required to prevent the grout from leaking.
5. Large non-supporting grout areas should be eliminated wherever possible.
6. Forms should extend a minimum of 1 in. higher than the bottom of the equipment being grouted.
7. Expansion joints may be necessary for both indoor and outdoor installation. Consult your local Master Builders field representative for suggestions and recommendations.

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TYPICAL FORMING TECHNIQUES



Gravity Grouting - This is the most common method of grouting. A fluid grout is recommended to ensure full bearing.

Extended forms for foundations with close clearance. Extended forms must be securely constructed to provide sufficient space to place and work the grout.	Split foundations with close clearance. Seal off interior forms to prevent spillage.	Grouting dynamometer bases and bedplates with cross webbing. Provide an air-relief hole at high point of each section created by the cross webbing. The stand-pipe or pump for pressure grouting must provide a continuous flow of grout.	Pressure grouting difficult recesses, scroll cases, speed rings, etc. Under certain conditions it may be desirable to place the grout using a pressure pump. Contact your Master Builders field man for information on this method of placement.

Temperature

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

Recommended Temperature Guidelines for Precision Grouting (degrees F)

	<u>Minimum</u>	<u>Preferred</u>	<u>Maximum</u>
Foundation and Plates	45°	50° - 80°	90°
Mixing Water	45°	50° - 80°	90°
Grout at Mixed & Placed Temp.	45°	50° - 90°	90°

- If temperature extremes are anticipated, or if special placement procedures are planned, contact your local Master Builders representative for assistance.
- When grouting at minimum temperatures, care must be taken to see that foundation, plate and grout temperatures do not fall below 45 °F (7 °C) until after final set; and that the grout is protected from freezing (32 °F or 0 °C) until it has reached 4,000 psi (27.6 MPa) compressive strength.

Mixing

(Use drinkable water only.)

- Place estimated water into the mixer, then slowly add the dry grout.
- The water demand will depend on mixing efficiency, material, and ambient temperature conditions. Adjust the water to achieve the desired flow. Recommended flow is 25 to 30 seconds using the ASTM C 940 Flow Cone method. Before placing grout below 45° and above 90° consult your Master Builders representative.

- Moderate size batches of grout are best mixed in one or more clean mortar mixers.

NOTE: Large batches of grout may be effectively, economically and most efficiently mixed in ready-mix trucks utilizing Master Builders 3,300 lb. “Bulk Bags”.

- Mix grout a minimum of 5 minutes after all material and water is in the mixer.
- Do not mix more grout than can be placed in approximately 30 minutes.

6. Transport by wheelbarrow, buckets or pump to the equipment to be grouted.

NOTE: Every measure should be taken to minimize the transporting distance.

7. Do not retemper grout by adding water and remixing after it stiffens.

Placing and Curing

1. Grout should always be placed from only one side of the equipment to prevent entrapment of air or water beneath the equipment.
2. Immediately after placement, trim the surfaces with a trowel and cover the exposed grout with clean wet rags and maintain this moisture for 5 to 6 hours.
3. The grout should offer stiff resistance to penetration, with a pointed masons trowel, prior to removing the grout forms or cutting back excessive grout.
4. Cure all exposed grout with an approved membrane curing compound such as Master Builders MASTERKURE or MB-429 immediately after the wet rags are removed to further minimize the potential moisture loss within the grout.
5. Do not vibrate grout. Steel straps inserted under the plate may be used to aid in movement of the grout.
6. Consult your Master Builders representative before placing more than 6 in. in depth per lift.

Pre-job Conference and Job Service

Conferences prior to the installation of equipment, sole plates or rail mounts should be held as early as practical. Such conferences are important to review the above recommendations (for a given grouting project) to ensure a placement of highest quality and lowest in-place cost.

- MASTERFLOW 928 and EMBECO 885 are not intended for use as a floor topping or in large areas of exposed shoulders around baseplates. Where grout is exposed for shoulders, occasional hairline cracks may occur. Cracks may also occur near sharp corners of the baseplate and at anchor bolts. These superficial cracks are usually caused by temperature and moisture changes which effect the exposed shoulder grout at a faster rate than the grout beneath the baseplate. These cracks do not effect the structural, nonshrink or vertical support provided by the grout if the foundation preparation, placing and curing procedures are properly carried out.

WARNING

EMBECO 885 GROUT AND MASTERFLOW 928 CONTAIN PORTLAND CEMENT AND SILICA SAND. PORTLAND CEMENT IN COMBINATION WITH WATER MAY CAUSE SKIN IRRITATION, RASH AND ALKALI BURNS. PROLONGED EXPOSURE TO SILICA MAY CAUSE DELAYED LUNG INJURY (SILICOSIS). THERE IS LIMITED EVIDENCE OF CARCINOGENICITY OF CRYSTALLINE SILICA TO HUMANS. DO NOT BREATHE DUST. FOLLOW SAFETY AND HEALTH STANDARDS FOR QUARTZ DUSTS. DO NOT WEAR CONTACT LENSES WHEN WORKING WITH THIS PRODUCT. REMOVE SOILED CLOTHING AND WASH CLOTHING BEFORE REUSE.

FIRST AID

Eyes: Flush with water for 15 minutes, lifting upper and lower lids occasionally; seek medical attention.

Skin: Wash with soap and water. Get medical attention if exposure is extensive.

Inhalation: Remove person to fresh air.

WASTE DISPOSAL METHOD

This product, when discarded or disposed of, is not listed as a hazardous waste in Federal regulations. Dispose in a landfill in accordance with local regulations.

For additional information on personnel protective equipment, first aid and emergency procedures, refer to the product Material Safety Data Sheet (MSDS) on the jobsite or call (216) 831-5500 in Cleveland, Ohio, the 24 hour Chemtrec (800) 424-9300, or Chemtrec D.C. area 483-7616. In Quebec, call (514) 331-7811.

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