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INSTALLATION
MAINTENANCE,
OPERATING
INSTRUCTIONS

IM-400

Grout Recommendations

Purpose.

Recommended grouting procedures for equipment such as fan bases, fan pedestals, fan housing supports, lubrication units, actuators, motors base plates or rails, duct and silencer support feet.

NOTE: This document applies to equipment with concrete foundations, shim packs and anchor bolts.

NOTE: Only 5 Star Epoxy DP or Masterflow Epoxy grout or equivalent epoxy grout shall be used. Dry pack grout is not recommended by New York Blower. The recommend minimum thickness of the grout is 0.75 to 1 inch (19 to 25 mm).

Procedure.

Section A: If there are internal voids, you may want to install internal forms to reduce the amount of grout that is needed. This would be typical of some fan base frame, housing or silencer supports. Please note that the use of internal forms that are later removed will create a catch basin for water if the fan is outdoors. Provisions will need to be made in the grouting process to allow the water to drain. If there are no internal voids, skip this section and proceed to Section B.

1. Before the equipment is set into place: Using field measurements or a certified drawing, cut hard Styrofoam insulation or equivalent as inside forms to keep the grout from flowing into the voids inside the supports. The total thickness of layers of insulation must be as thick as the distance from the concrete to the bottom of the support flange. The forms must allow for 3" (75 mm) of space on each side between the form and the nearest support flange edge along with internal supports and drain pipes or connections. Caution should be used that the no part of the equipment support structure comes in contact with or sits on top of the insulation form. Refer to Figure 1.

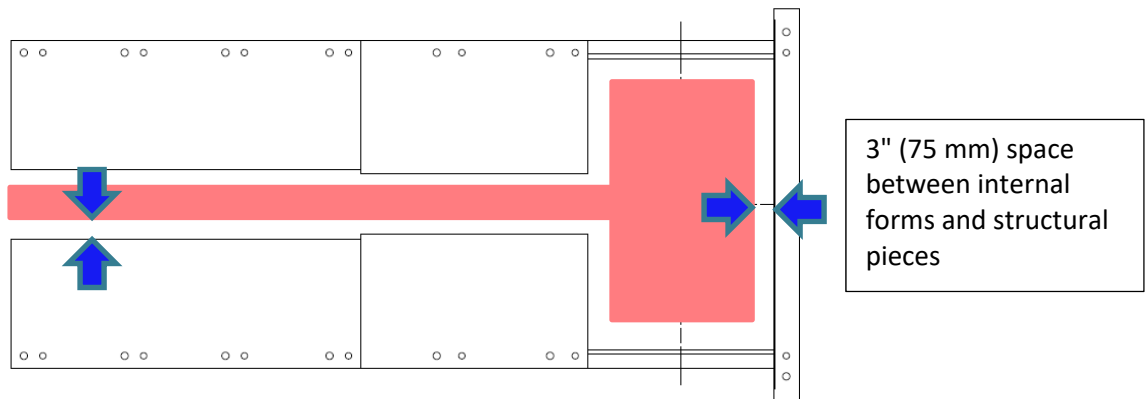


Figure 1: Typical layout of an Arrangement 8 fan with a base frame support

Multiple forms may be required if there are multiple interior void spaces

2. Lay the forms on the concrete pad in the correct position so they will not interfere with any structural member of the base frame support.
3. Attach the forms to the concrete pad using concrete fasteners or liquid nails in the center. The perimeter of the form must have a fastener every 12 to 18 inches (300 to 450 mm).
4. Set the equipment into its final location. Proceed to Section B:

Section B:

1. With the equipment in the proper final location, shim around the anchor bolts so as not to cause any binding on the support and the equipment is level and/or plumb. For fan and motor base frames and pedestals, the fan shaft/motor shaft/pedestal top or/and base frame top is to be level within 0.005"/12 inch (1 mm/300mm) for horizontal fan installations and within 0.005"/12 inch (1 mm/300mm) of plumb (perfect vertical) for vertical fan installations. Nyb recommends the use of stainless-steel shims.
2. If internal forms were used, inspect the interior perimeter to ensure there are clearances between the inside form and support flanges, internal base stiffeners, connections between fan base and motor base and all drainpipes/connections. Use a flashlight and inspection mirror to ensure that the spacing is correct. If there are interferences or the spacing is too small, correct the spacing before proceeding.
3. Prepare the outside forms with a height that is greater than the distance from the concrete to the bottom of the base support flange. The forms must be installed to allow at least 3" (75 mm) of space between the largest outside dimension of the equipment support base (including mounting feet, if present). The forms shall be anchored every 24 inches (600 mm) with concrete fasteners. See Figure 2.

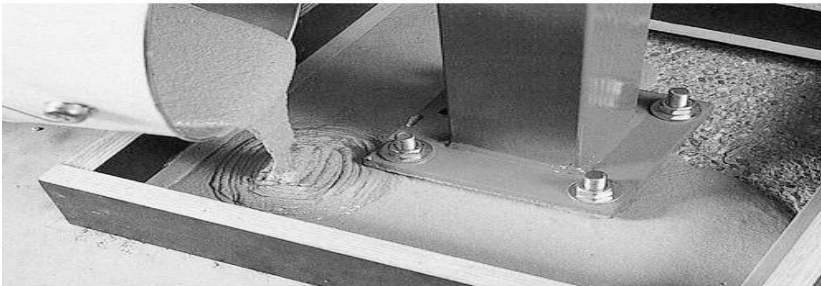


Figure 2: Typical external form around a support foot

1. If grout is to be poured in cold weather (less than 50 F, 10 C), the support, shim pack and concrete shall be heated to a minimum of 70 F, 20 C. Heating shall be in place for (3) days before grout is installed in extremely cold weather (less than 32 F, 0 C).
2. If grout is to be poured in cold weather (less than 50 °F, 10 C), all grout materials shall be stored in a room temperature location for (48) hours before it is used. The bagged aggregate should be removed from the pallet and spread out so air can circulate around individual bags. Check the aggregate temperature using a thermometer, internal temperature must be a minimum of 65 F, 18 C. Do not heat aggregate in excess of 80 F, 26 C.

3. Coat the interior of the outer form completely with grease, Duct Tape, or Polyethylene film (stapled on back side of form). Paraffin wax shall not be used as a release agent. Anti-seize must be applied to all anchor bolts, and leveling bolts if present, to allow release from the grout. If the support being grouted is large, a grout hole may need to be installed so the grout does not form voids as shown in Figure 3.

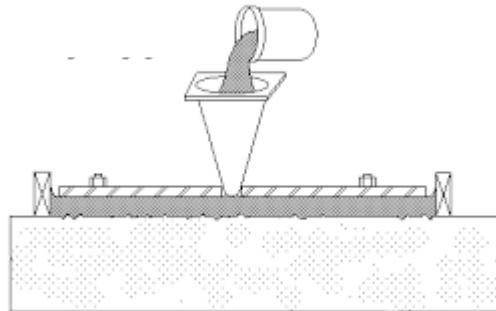


Figure 3: Typical grout hole

4. Re-check the support structural to ensure it is level, no rocking, no binding, no gaps in the shim packs and then apply 100% of the total torque required at each anchor bolt location.
5. New York Blower recommends that all the fan and auxiliary equipment checks have been performed and that the fan is operating satisfactory before pouring the grout. Perform the test run of the fan to measure vibrations, bearing temperatures, etc. If the fan operation is satisfactory, proceed to step 6.
6. Prepare the grout according to the manufacturer's instructions.
7. Install the grout by pouring it on all sides of the fan. Grout should be poured flush with the bottom of the fan base frame. Use a head box for all gravity grout pours. The head box must be a minimum of 16" (400 mm) high by 12" (300 mm) wide and fit tightly between the form and fan base. Pour grout until the desired elevation is reached.
8. Wait for (24) hours. During this time, the fan shall not be operated.
9. Re-torque all nuts on the fan anchor bolts.