Oregon

John A. Kitzhaber, MD, Governor

Department of Environmental Quality
Western Region Eugene Office
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Eugene, OR 97401
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TTY 711

July 16, 2012

Joe Floyd
Floyd & Sons Precast Products
3901 NW Elliot Lane
Prineville, OR 97754

Dear Mr. Floyd:

The Oregon Department of Environmental Quality (Department) has received the plans, specifications and other associated materials you provided for a septic tank approval configuration(s) manufactured by your company. This letter is to inform you the following tank(s) can be installed in the State of Oregon, based on your certification these tanks comply with all applicable Department Rules and Regulations:

- 1000 gallon low profile septic tank
- 1500 gallon low profile septic tank
- 2000 gallon low profile septic tank
- 1000 gallon low profile septic tank (H20) loaded
- 1500 gallon low profile septic tank (H20) loaded
- 2000 gallon low profile septic tank (H20) loaded

McNeil Engineering Structural L.C. was the Engineering firm for all plans submitted. These plans were stamped by Russell C. Carter P.E. and approved by the Department on July 6, 2012. Copies of the approved plans, specifications and an installation manual are attached to this letter. Floyd & Sons Precast Products is authorized to manufacture and distribute the tanks, listed above, for use in onsite wastewater treatment and disposal systems in the state of Oregon until further notice, provided the following conditions are met:

1. Each tank must be manufactured in compliance with the Department's rules, and with the plans and design specifications provided. Any deviations from the plans and specifications are not permitted unless authorized in writing by the Department.

2. The concrete mix must be in accordance with the mix description on the plans prepared by your engineer. Samples must be tested for compressive strength. A seven day compressive strength of two-thousand (2000) pounds per square inch (PSI) and a twenty-eight (28) day compressive strength of at least 3000 PSI, as specified in the plans provided by the engineer must be achieved. Three concrete sample cylinders must be taken and tested for each tank manufactured until the minimum compressive strength is obtained. Thereafter, at least one (1) concrete sample for each five (5) tanks produced must be taken. Samples must be alternately broken at seven (7) and twenty-eight (28) days. All tanks must be field cured were the tanks are stored. Laboratory curing of additional samples may be done at your discretion. Upon request, all test results must be made available to the Department for review.

3. Each tank must be cured and protected from premature drying and excessive hot or cold temperatures for the first ten (10) days following casting. Tanks may be shipped from the casting yard after seven (7) days, or earlier if the concrete has reached at least two-thirds (2/3) of the design strength.

4. Your business is responsible to insure that each assembled tank delivered to a construction site is water-tight. It is expected that your business will pre-test some percentage of the tanks at the plant to verify they are water-tight.

5. A fully assembled and complete tank must be delivered to the purchaser, including the necessary tank risers and lids.

6. Septic tanks with a burial depth thirty-six (36) inches or less must be installed with one (1) twenty four (24) inch diameter water tight riser, at the inlet side of the tank, extending to the ground surface or above. Septic tanks with burial depths between thirty-six and forty eight (48) inches must be installed with one (30) inch diameter water tight riser, at the inlet side of the tank in accordance with Oregon Administrative Rule (OAR 340-071-0220(3)(b)(C).

7. Where tanks are installed in areas where groundwater may be higher than three (3) feet from the bottom of the tank, an additional concrete lid 14" thick shall be placed over the 1,000 gallon tank. A 24" thick lid shall be placed over the 1,500 gallon tank.

8. When an effluent filter is required to be installed in the outlet tee, the lid of the tank must be rotated 180 degrees to position the 18-inch access man way over the outlet tee.

9. The outlet tee in each septic tank was identified as compatible for specific effluent filters and include the:

    - Polylock PL-122
    - Tuf-Tite EF-4
    - Orenco Direct Coupling Filter
    - Orenco Biotube Effluent Filter

10. Each tank is only acceptable for use at locations where the top loading will not exceed the engineering design parameters. Tanks proposed for use at other locations require an engineering analysis of the potential top loading, and may require preparation of site-specific plans and specifications.

11. Each tank must be marked on the uppermost tank surface over the outlet with the liquid capacity, date of manufacture, burial depth limit, and either your full business name or the assigned number **1609**.

If you have any questions about this letter, please contact Dan Wiltse at (541) 687-7436; toll free in Oregon at (800) 844-8467 or by email at wiltse.daniel@deq.state.or.us.

Sincerely,

Michael E. Kucinski, Manager
Water Quality/ Onsite

Encl: Approved plans, Installation manual

ec: All Contract County Offices
All DEQ Direct Service Offices

Jim Flagg AND SONS INCORPORATED

All Things Concrete

Note: Waterproof Paper for Field Delivery

PLAN APPROVED

Date 7/6/12 Signed BW

Installation Manual

Concrete Gravity Septic Tanks

1. Tank shall be placed on level, undisturbed earth or on 6" of compacted ¾" minus granular material compacted to 95% of relative maximum density. The undisturbed earth or the compacted granular material shall be level within ¼ inch in 10 feet as measured with a framing level and straight edge. Tanks not installed level shall be removed, the bedding leveled and recompacted, and the tank reinstalled. The inlet end of the tank is inscribed with the letter "I". Installer should verify tank elevation with respect to building drain elevation prior to installation of the tank.

2. Where Tanks are installed in areas where groundwater may be higher than three feet from the bottom of the tank: An additional concrete lid of 14" thick shall be placed over the 1,000 gallon tank and an additional concrete lid of 24" thick shall be placed over the 1,500 gallon tank.

3. Procedure to attach riser to the top of the tank:

- Clean the riser and the riser/tank adapter
- Apply adhesive to the outside surface of the riser tank adapter. Hint: if backfilling the same day use MA 320, SS115, or SS140 adhesive because of quicker cure times (30 mins to 3 hours). If 12-hours or more of curing is allowed use ADH100.
- Apply just enough adhesive to the outside of the tank adapter for a quick structural joint, then apply adhesive to the inside of the adapter and riser joint for a watertight seal.
- Place riser by carefully sliding onto adapter before the adhesive cures.
- Seal the adapter to riser joint by applying adhesive to the inside of the adapter and riser joint use putty knife to from a bead of displaced adhesive into a continuous watertight fillet.

4. Procedure to attach Lid adapter

- Clean Riser surface
- Apply MA320 adhesive to the inside edge of the RLA adapter
- Carefully place RLA adapter onto the riser. Gently twist the RLA to ensure proper seating onto riser.
- Create an adhesive fillet around the inside of the RLA and riser connection joint. Allow adhesive to cure before attaching lid.

5. Attach fiberglass riser cover with urethane gasket to riser with stainless steel self tapping screws provided.

6. Inlet and Outlet piping to attach with solvent weld to rigid coupler or flexible Fernco type coupler.

7. Tanks should be installed in a location that is easily accessible for servicing and pumping.

8. In order to demonstrate water tightness after installation: Fill tank to a point two inches above the access connection. There shall be no more than one-gallon leakage over 24 hours (which is ½" in a 24" diameter riser). If the tank fails the water tight test, it shall be drained and "damp-dried" with heat and ventilation before application of "Preco Plug" or "Hydroplug" per manufacturer's instructions. Fill tank to two inches above access connection and re-test for 24 hours. Three failed test shall be cause for rejection of tank.

9. After tank has passed water tightness test, backfill around and over tank shall be with excavated material, except rocks larger than 3" in diameter. Compact to 85% maximum dry density per AASHTO T-99. Burial depth shall not exceed three feet as marked on top of tank. To ensure a watertight connection and proper support at the inlet and outlet, compact pipe bedding with (3) passes of vibratory compacter. After installing the piping over the compacted bedding and connecting to the inlet and outlet, backfill up to the midline of the inlet and outlet piping and compact with (3) passes of vibratory compacter. Continue placing backfill over piping in 6 inch lifts – compacting each lift until backfill is brought up to grade.