

**DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WATER PROTECTION SECTION**

North Carolina Prefabricated Tank Approval

Issued To: Norwesco, Inc.
4365 Steiner Street
PO Box 439
St. Bonifacius, MN 55375-0439

For: 1,000-Gallon and 1,500-Gallon Polyethylene (Bruiser) Septic Tanks and 1,000-Gallon and 1,500-Gallon Polyethylene (Bruiser) Pump Tanks

Date: September 22, 2009

I. Design Criteria

- a. Tanks shall be manufactured as per the approved drawings, specifications and testing results. All other wastewater system components shall be as described in 15A NCAC 18A .1900, et seq.
- b. Polyethylene shall be Type II or III and Category 3 per ASTM Standard D 1248 Specification for Polyethylene Plastics Molding and Extrusion Materials, Class B (requiring an ultraviolet stabilizer) or Class C (requiring a minimum of one percent carbon black).
- c. Specific design criteria for these tanks that have been demonstrated via third-party testing and shall be met include:

<u>Material Property</u>	<u>Value</u>
Ultimate tensile strength	2,400 psi, minimum
Stress crack resistance	150 hours
Flexural modulus of elasticity	85,000 psi, minimum

Based primarily on ASTM standards and IAPMO PS 1-2003, Material and Property Standard for Prefabricated Septic Tanks

- d. Structural integrity and tank watertightness in accordance with CAN/CSA-B66-00, Prefabricated Septic Tanks and Sewage Holding Tanks, sections 9.2.3.2.
- e. Tank wall thickness shall be a minimum of 0.25-inches.
- f. Inlet, liquid depth, baffle wall location and opening depth, effluent filter, access covers as per Rules .1954(a) and (b) and other dimensions as shown on the plans.

II. Siting criteria

- a. Tanks shall not be installed in areas with saturated soil conditions or indication of a seasonal high water table, per 15A NCAC 18A .1942(a), between the ground surface and the bottom of the proposed tank installation excavation.

- b. Tanks shall not be installed in areas which are to be subject to vehicular or other live loading of any kind.
- c. Tanks shall not be installed in areas which may be subject to exposure to open flame or heat in excess of 180 degrees, Fahrenheit.
- d. Tanks shall be located and oriented in such a way that the inlet pipe shall enter the tank through the preformed inlet pipe penetration point and pipe connection gasket at a 90-degree angle to its inlet end wall. No side entry of these tanks are allowed. Inlet shall be through gasket provided by the manufacturer.
- e. Tank top must be at least 6 inches below the finished grade for septic tanks and 6 inches above the finished grade for pump tanks. Maximum burial depth is 30 inches below grade.
- f. Other siting criteria as specified in 15A NCAC 18A .1900, et seq. and minimum setback distances, as specified in 15A NCAC 18A .1950, shall be met.

III. Tank sizing

Per the criteria established in 15A NCAC 18A .1952.

IV. Risers and Effluent Filters

- a. Any of the approved effluent filters may be used with the Norwesco Bruiser tanks as long as the requirements of the filter approval concerning size, wastewater characteristics, and design flow and support requirement can be met.
- b. The riser approved for use with the septic tank is the 20-inch or 24-inch Tuf-Tite riser, including the riser safety pan, which provides an internal concrete plug. The riser will be attached to the tank using stainless steel screws and butyl sealant, which meets ASTM C 990.
- c. The riser approved for use with the pump tank is the 24-inch Tuf-Tite riser, including the riser safety pan, which provides an internal concrete plug. The riser will be attached to the tank using stainless steel screws and butyl sealant, which meets ASTM C 990.

V. Installation and testing procedures

- a. Sharp objects must be kept away from the tanks.
- b. Tanks must be bedded with at least six inches of sand in soil terrain and 12 inches of sand in rock terrain.
- c. The excavation hole must be as small as possible while allowing for 18 to 24 inches of sidewall and endwall clearance.
- d. The following items must be done after the setting the tank into the excavation and before backfilling the tank: inlet pipe is entered straight from the opening provided (no side entry), and effluent filter installed (only for septic tanks).
- e. Backfill in an alternating method around the tank using native material free of debris, sharp stones, stones greater than 2 inches in diameter, wood, silt, and clay. Backfill

- and compact around the tank in 12 inch lifts. Tank ends are to be backfilled first. Backfill under inlet and outlet pipes must be tamped and compacted.
- f. A 24-hour tank leakage test may be required by the local health department following tank installation. Vacuum testing is not recommended for buried polyethylene tanks.
 - g. The tanks must be filled one-fourth full with water after installation.
 - h. Manufacturer's installation instructions for Norwesco Polyethylene Tanks shall be adhered to, except as required herein or by 15A NCAC 18A .1900, et seq.
 - i. Tanks shall be distributed through a network of dealers/distributors authorized by Norwesco, Inc., after all personnel involved in the sale of the tanks have completed Norwesco-authorized product training. Authorized dealers may only sell tanks to authorized installers.
 - j. Tanks shall be installed by an installer who has completed a Norwesco-authorized training session and has been authorized in writing by Norwesco, Inc.

VI. Operation, maintenance and monitoring requirements

- a. System management entity, inspection/maintenance and reporting frequency requirements shall be in accordance with 15A NCAC 18A .1961.
- b. The operator in responsible charge (ORC), where applicable, during their regular inspection and the local health department, during their regular system review, should remove any access lids and inspect the tanks for signs of infiltration, leakage and structural failure. Any problems noted shall be reported to the local health department, Norwesco, Inc., and the Division of Environmental Health, On-Site Water Protection Section. Repairs made shall be consistent with the recommendations of Norwesco, Inc. and the Division of Environmental Health, On-Site Water Protection Section.