

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION

SEPTIC/PUMP TANK RISER ASSEMBLIES CONDITIONAL APPROVAL

SEPTIC/PUMP TANK RISER ASSEMBLIES CONDITIONAL APPROVAL: SR-10-R1

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FOR: HDPE 20 inch and 24 inch Septic Tank and 24-inch Pump Tank Riser Assemblies

DATE: October 8, 1999
July 24, 2003 (Addition of Pump Tank Riser and Riser Safety Pan)

In accordance with North Carolina General Statute 130A-335, 130A-335.1, and 15A NCAC 18A .1954, an application by Harry R. Plander of Tuf-Tite? Corporation for modified approval of their septic tank riser assemblies and for the addition of pump tank riser assemblies has been reviewed. These riser assemblies have been found to meet the minimum requirements established by statute and rule when the following conditions for use, installation, operation and maintenance are met:

I. Description:

- a. Riser assemblies and associated accessories shall be designed and manufactured in accordance with plans, specifications and supporting documents provided by the manufacturer in their application for approval submitted to the On-Site Wastewater Section. The On-Site Wastewater Section shall be notified in writing of any new assemblies or modifications to the approved riser assemblies and accessories prior to use in subsurface wastewater systems.
- b. Conditionally approved riser assemblies and other accessories shall meet the specifications outlined in Table 1:

**Table 1. Conditionally Approved Risers Model Specifications
(Tuf-Tite?)**

Riser Models	Inside dia.	Min. Tank Top Width Required	Installation Limitations ^{1,2}
20" HDPE Round Riser (6" high stackable sections) and Lid Assembly with Tamper-Resistant Stainless Steel Screws and 5-inch Riser Safety Pan ³ and internal concrete plug	20"	28"	Septic Tank: Must be installed 6" below finished grade or at least 3" above finished grade.
24" HDPE Round Riser (6" high stackable sections) and Lid Assembly with Tamper-Resistant Stainless Steel Screws and 5-inch Riser Safety Pan ³ and internal concrete plug	24"	32"	Septic Tank: : Must be installed 6" below finished grade or at least 3" above finished grade. Pump Tank: Must be installed at least 6" above finished grade.

Notes:

1. These riser systems must not be subjected to vehicular or other excessive live loads, or buried deeper than three feet below finished grade.
2. Mechanisms to prevent accidental entry to the tank include use of tamper-resistant screws (No. 2 square notched head, or approved equal), at least two horizontal safety screws, and internal concrete plug.
3. Riser Safety Pan provides support for internal concrete plug. Pans are 5-inches high, with internal diameter of 20 to 24 and 17 to 20 inches for 24-inch and 20-inch pans, respectively. Pans also may serve as separate riser sections for septic tanks. For pump tanks, use only single riser safety pan located at the top of the riser just below and attached to the lid. Make certain plug handle doesn't prevent lid from being properly secured on top of riser safety pan.
4. Pump tank riser sections include preformed pre-formed bosses through which wire conduit and pump discharge pipe can be installed

II. Use:

A precast tank manufacturer may propose to use one or more of these conditionally approved riser assemblies in one or more of their septic tanks or pump tanks. The tank manufacturer must notify the On-Site Wastewater Section in accordance with Rule .1953 of the tanks in which they propose to utilize any of these conditionally approved risers, showing any modifications to the approved tank plans which may be necessary to utilize the proposed risers.

III. Installation/Assembly:

- A. The riser assemblies shall be assembled and installed in accordance with the manufacturer's specifications, applicable rules and approval conditions.

Septic Tank Installations: For new installations (for systems constructed on or after January 1, 1999), a Tuf-Tite? initial riser section or riser safety pan section shall be cast into the tank during tank construction. One of the following installation methods shall be used.

- i) Cast-in-place with internal collar: The bottom riser section shall be cast in the concrete (with the riser lid secured in place), retaining a concrete inner collar around the internal circumference of the riser (to form at least a 17-inch diameter opening). The riser shall be placed in the tank top mold in such a manner that 1-½ inches of concrete shall be cast below the riser bottom. A tapered concrete support collar shall surround the riser beginning at a height of at least four-inches above the bottom of the riser tapering away from the riser on a projected slope of 1:8. Four No. 3 rebars (one each on every side of the riser, making a picture frame) shall be placed one inch away extending three to six inches beyond the riser; or
- ii) Cast in Place with Riser Safety Pan: Riser Safety Pan section shall be cast into the top of the tank, with pre-manufactured concrete plug in place. When the tank top slab is less than four inches thick, a concrete fillet shall be provided around the riser to that the total thickness of the concrete slab will be at least four inches around the riser, tapering away from the riser on a projected slope of 1:8. The support collar must not be constructed so as to interfere with the installation of a riser lid or riser section onto the riser safety pan. Four No. 3 rebars (one each on every side of the riser, making a picture frame) shall be placed one inch away extending three to six inches beyond the riser

Pump Tank Installations:

- i) A 24-inch Tuf-Tite? riser section (7-inches high) shall be cast directly into the tank fully penetrating the tank top (A Riser Safety Pan shall **not** be cast into the pump tank top). When the tank top slab is less than four inches thick, a concrete fillet shall be provided around the riser so that the total thickness of the concrete slab will be at least four inches around the riser, tapering away from the riser on a projected slope of 1:8. Four No. 3 rebar (one each on every side of opening, making a picture frame) shall be placed one inch away from the opening extending three to six inches beyond the tank opening.
- ii) The top (highest) riser section **shall be** a Riser Safety Pan to accommodate an internal concrete plug (no other Riser Safety Pans shall be used in the riser). The riser safety pan shall be secured to the riser section below with preformed 5/16-inch butyl rope in accordance with ASTM C-990 and secured with six No. 10 x 1-3/4 inch stainless steel sheet metal screws provided by the riser manufacturer. Note, however, that if necessary, the Riser Safety Pan is removable to facilitate access to the pump and floats.
- iii) Wire connections and the pump discharge pipe shall be made through bulkhead connectors or Tuf-Tite RS-2 synthetic rubber seal made of Santoprene provided by

the riser manufacturer and installed through holes(s) drilled by the installer into the pre-formed bosses provided in the risers per manufacturer's recommendations, to make a secure watertight connection. For systems where the discharge pipe is designed to pass through the riser, make certain the pump disconnect is reachable from the top of the riser (12-18 inches, maximum, below riser lid), and the pipe shall remain below the local frost line (12-18 inches, minimum, in most of North Carolina).

- B. Riser retrofit installations may be approved by the local health department on a case-by-case basis when used with an existing septic tank or pump tank. Risers shall be attached in a structurally sound, watertight fashion in accordance with the riser manufacturer's specifications.
- C. Riser sections must be sealed together with preformed 5/16-inch butyl rope meeting the performance standards of ASTM C-990 (provided by the tank manufacturer which may be obtained from the riser manufacturer) and secured with six number 10 x 1-3/4 inch stainless steel sheet metal screws provided by the riser manufacturer. The riser lid must have a watertight compressible polyurethane gasket and be screwed down with at least six tamper-resistant stainless steel screws (use No. 2 square-notched screws, or approved alternate). At least two horizontal safety screws shall be provided and located as indicated on top of the riser lid..
- D. In addition to the proposed tamper-resistant stainless steel fasteners provided by the riser manufacturer, the septic tank and pump tank manufacturer shall provide an internal, secondary concrete lid to prevent accidental entry to the tank when using these risers. The lid shall be circular, at least 2-1/2-inches thick, reinforced, and include handle in accordance with Rule .1954 (a)(10). For septic tanks, the concrete lid shall either rest on the internal concrete collar or riser safety pan, as applicable. For risers deeper than 18-inches, a riser safety pan to support the internal concrete plug shall be located no deeper than 18-inches below the top of the riser. The effluent filter model utilized in conjunction with this riser assembly shall not be interfered with by the internal concrete plug. For pump tanks, the riser safety pan and internal concrete lid shall be located immediately beneath the riser lid. The internal lid must be readily removable from the riser from above grade.
- E. This riser system must not be installed in areas subjected to vehicular traffic, or where the tank shall be buried more than three feet below finished grade.

IV. Literature:

The riser assembly manufacturer shall furnish with each riser assembly (and/or with associated riser assembly components) all pertinent installation and maintenance details.

- V. Maintaining conditional approval status: The approval status is governed by Rule .1954(e).

Approved by: _____ Date: _____