NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH
ENVIRONMENTAL HEALHT SECTION
ON-SITE WATER PROTECTION BRANCH

SEPTIC AND PUMP TANK RISER APPROVAL

Septic Tank and Pump Tank Riser Assembly Approval: SR-10-R4

Issued To: Tuf-Tite, Inc
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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
September 30, 2020	Addition of Internal Safety Lid
December 31, 2024	Updated for 18E and renewed for 2025
December 31, 2025	Renewed for 2026

In accordance with G.S. 130A-335 and 130A-335.1 and 15A NCAC 18E .1404 and .1405, an application by Tuf-Tite, Inc, for renewal of their approval for septic tank and pump tank risers has been reviewed and approved when the following conditions are met.

I. Description

a. Risers 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 Water Protection Branch.

b. Approved risers and accessories shall meet the specifications outlined in Table 1.

Table 1. Riser Model Specifications

Riser Models	Inside diameter	Min. Tank Top Width Required	Riser Installation Limitations[1,2]
20” HDPE round riser (6” high stackable sections) and lid assembly with tamper-resistant stainless-steel screws and one of the following: 5” riser safety pan[3] and internal concrete plug; riser section with the internal safety lid[4]; or the internal concrete plug and the internal safety lid	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 one of the following; 5” riser safety pan[3] and internal concrete plug; riser section with the internal safety lid[4]; or the internal concrete plug and the internal safety lid	24"	32"	Septic tank – must be installed 6” below finished grade or at least 3” above finished grade Pump tank[5] – must be installed at least 6” above finished grade

Notes:
1. 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 the internal concrete plug or riser section with the internal safety lid. A septic tank can use both the riser safety pan with an internal concrete plug and the riser section with an internal safety lid.
3. The riser safety pan provides support for the internal concrete plug. Pans are five inches high, with internal diameters of 20 to 24 inches for 24-inch pans and 17 to 20 inches for 20-inch pans. Pans also may serve as separate riser sections for septic tanks. For pump tanks, use only a single riser safety pan or riser section with internal safety lid located at the top of the riser just below, and attached to, the riser Make certain the plug handle doesn’t prevent the lid from being properly secured on top of the riser safety pan when used.
4. The internal safety lid is designed for a dead load of over 500 pounds. The internal safety lid shall be secured to the riser with four tamper-resistant stainless-steel screws. For extra security, the internal safety lid underside can be filled with concrete.
5. Pump tank riser sections include pre-formed bosses through which wire conduit and pump discharge pipe can be installed.

II. Installation

a. The risers shall be assembled and installed in accordance with the manufacturer’s specifications, applicable rules, and approval conditions.

b. For new septic tank installations, 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.
   1. 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. A 17-inch diameter opening should be formed at a minimum. The riser shall be placed in the tank top mold in such a manner that 1½ inches of concrete shall be below the riser bottom. A tapered concrete support collar shall surround the riser, beginning at a height of four inches above the bottom of the riser and tapering away from the riser on a projected slope of 1:8. Four No. 3 rebars (one on each side of the riser, making a picture frame) shall be placed one inch away extending three to six inches beyond the riser; or
   2. Cast in Place with Riser Safety Pan: The riser safety pan section shall be cast into the top of the tank, with a 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 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. The support collar shall be constructed so as to not interfere with the installation of a riser lid or riser section onto the riser safety pan. Four No. 3 rebars (one on each side of the riser, making a picture frame) shall be placed one inch away extending three to six inches beyond the riser.

c. For new pump tank installations, one of the following methods shall be used.
   1. A 24-inch Tuf-Tite® riser section (seven inches high) shall be cast into the tank fully penetrating the tank top. A riser safety pan shall **not** be cast into the pump tank top. When the top tank 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 on each side of the riser, making a picture frame) shall be placed one inch away from the opening extending three to six inches beyond the riser.
   2. The top (highest) riser section **shall be** a riser safety pan that can accommodate an internal concrete plug or a riser section with an internal safety lid. No other riser safety pans shall be used in the riser. The riser safety pan or riser section with internal safety lid 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. The riser safety pan, if necessary, shall be removable to facilitate access to the pump and floats.

3. Wire connections and the pump discharge pipe shall go through bulkhead connectors or Tuf-Tite RS-2 synthetic rubber seals made of Santoprene to make a secure watertight connection. The riser manufacturer shall provide the seals or connectors. The seals or connectors shall be installed through holes drilled by the installer into the pre-formed bosses provided in the risers. 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, 18 inches maximum below the riser lid, and the pipe shall remain below the local frost line.

d. 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.

e. Riser sections must be sealed together with preformed 5/16-inch butyl rope meeting the performance standards of ASTM C-990 and secured with six number 10 x 1 ¾-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, 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.

f. 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 a handle in accordance with 15A NCAC 18E .1410(b)(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 or riser section with internal safety lid 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 or internal safety lid. For pump tanks, the riser safety pan and internal concrete lid or riser section with internal safety lid shall be located immediately beneath the riser lid. The internal lid must be readily removable from the riser from above grade.

g. 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.

Approved by:_____ Date:_____