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

SEPTIC TANK AND PUMP TANK RISER ASSEMBLY APPROVAL

Septic Tank and Pump Tank Riser Assembly Approval: SR-14-R10

Issued To: Polylok, Inc
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For: 20-inch and 24-inch Septic Tank and 24-inch Pump Tank Riser Assembly

Date:

August 24, 2001	
January 22, 2003	Addition of 24-inch Riser
February 2, 2004	Addition of Pump tank Riser and Riser Safety Pan
August 11, 2006	Addition of Heavy Duty Riser Cover for 24-inch Riser Assembly
June 25, 2009	Addition of 20-inch Safety Screen
November 17, 2009	Addition of 24-inch Safety Screen and Dual Cover Assembly
January 25, 2010	Addition of 24-inch Riser Safety Pan
June 11, 2013	Modification to approval
July 2, 2014	Modification to pump tank additional security requirements
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 Polylok, Inc, for renewal of its riser assembly products has been reviewed and approved when the following conditions 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.

b. Conditionally approved riser assemblies and other accessories shall meet the specifications outlined in Table 1.

Table 1. Conditionally Approved Riser Model Specifications

Riser Models	Inside Diameter	Minimum 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 7" 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 with internal concrete plug	24"	32"	Septic tank must be installed 6" below finished grade or at least 3" above finished grade. Pump tank[4] 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. 10 x 1-1/2" square notched head or approved equal) and internal concrete plug.
3. Riser safety pan to be used exclusively with 20-inch septic tank riser to provide support for internal concrete plug. Pans are 7-inches high, with internal diameter of 17-inches. Tank manufacturer is to construct concrete plug to indicated "fill" line on inside of riser safety pan poured to weigh 59 pounds.
4. Top riser section of pump tank to have concrete safety plug (minimum 2.5 inches thick) constructed by tank manufacture in special octagonal Polylok riser safety form provided by the riser manufacturer which shall sit securely on the internal horizontal rib of the riser. Lower pump tank riser sections shall include pre-formed bosses and bulkhead fittings or grommets provided by the riser manufacturer through which wire conduit and pump discharge pipe can be installed.

II. Installation

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

b. Septic tank installations
For new installations, a Polylok riser section or riser safety pan (20-inch or 24-inch risers) 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 (to form at least a 17-inch diameter or 21-inch opening, for the 20-inch and 24-inch models, respectively). 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
2. Cast-in-place with riser safety pan: Riser safety pan section shall be cast into the top of the tank, anchored to the mold using four plastic mold nails provided by the riser manufacturer, or alternately held to mold with pre-manufactured concrete plug in place. Concrete plug is to be constructed to specified thickness and weight (59 pounds). When tank top slab is less than four inches thick, a concrete fillet shall be provided around the riser so that the total thickness of 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 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.

c. Pump Tank Installations
1. A 24-inch Polylok riser section (6-inches high) shall be cast directly into the tank fully penetrating the tank top. Do not remove the external riser flange for the section to be cast into the 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.

2. The top (highest) riser section shall support a specially constructed internal concrete plug, constructed utilizing the Polylok riser safety form provided to the tank manufacturer by Polylok, Inc or constructed using the Polylok riser safety pan. The concrete tank safety plug shall be a minimum 2.5 inches thick and be removable to facilitate service access to the pump, floats or filters.
3. Wire connections and the pump discharge pipe shall be made through bulkhead connectors or grommets provided by the riser manufacturer and installed through holes(s) drilled by the installer into smooth portions in the risers midway between two ribs 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).

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. Risers shall be attached in a structurally sound, watertight fashion in accordance with the riser manufacturer's specifications.

e. Multiple riser sections must be sealed together with vinyl nitrile gasket to be provided by the riser manufacturer, and secured with six number 10 x 1-1/4 inch stainless steel sheet metal screws provided by the riser manufacturer.

f. The riser lid shall have a watertight gasket and be screwed down with at least eight tamper-resistant stainless steel screws, with gasket and screws as provided by the riser manufacturer. The heavy duty riser lid for the 24-inch riser assembly may be used in place of the standard riser lid.

g. In addition to the proposed tamper-resistant stainless steel screws provided by the riser manufacturer, additional security for septic tanks and pump tanks shall be provided as listed below.

   For septic tanks, one of the three following methods may be used: an internal concrete lid with handle, weighing at least 50 pounds, provided by the tank manufacturer, to be placed on the internal concrete lid or riser safety pan; the Polylok safety screen; or the dual cover assembly.

   The Polylok safety screen must be bolted down in the riser with the screws provided by the riser manufacturer.

   The dual cover assembly is comprised of the 20-inch Polylok riser cover and the 24-inch Polylok riser assembly joined in a single unit.

   For pump tanks, an internal concrete lid with handle, weighing at least 50 pounds, shall be provided by the tank manufacturer, to be placed on the internal concrete lid or the top riser section or riser safety pan; the Polylok safety screen; or the dual cover assembly.

h. 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:_____