

# PVC Riser Installation

## **Installing PVC Access Risers onto Cast-In Orenco<sup>®</sup> Riser-Tank Adapters**

Access risers provide access to septic tank openings, simplifying inspection and maintenance procedures. Access riser-to-tank connections must be watertight for the proper functioning of an onsite septic system or effluent sewer system. Orenco strongly recommends watertightness testing of all access riser-to-tank connections after installation.

Following are instruction sets for prepping and installing access risers, installing grommets, and selecting adhesives for riser installations. Refer to the chart below to determine which instruction set to use.

<b>Instruction Set</b> . . . . .	<b>Page</b>
1. Riser Preparation . . . . .	1
2. Grommet Installation . . . . .	2
3. Riser Installation — PRFTA24-2 Adapters . . . . .	3
4. Riser Installation — RRFTA24, RRFTA30, PRFTA24, PRFTA30, FRFTA24-RVF, and FRFTA30-FRP Adapters . . . . .	4
5. Riser Installation — Orenco FRP Tanks with 24-inch-Diameter (600-mm) Risers . . . . .	5
6. Riser Watertightness Testing . . . . .	6
7. Adhesive Selection and Quantities . . . . .	7

## **Instruction Set 1: Riser Preparation**

### **Step 1: Determine Riser Height**

Determine how high the riser needs to be.

- The top of the riser should be about 3 inches (75 mm) above finished grade after installation and backfilling — This allows 2 inches (50 mm) for tank settling and 1 inch (25 mm) for ensuring drainage away from the riser.

### **Step 2: Cut Riser to Size (if Necessary)**

If the riser needs to be cut to size, cut it with a circular saw or table saw.

- Always cut excess length from the bottom of the riser.
- For square, even cuts, a good fit, and a watertight joint between the riser and the adapter, use an Orenco riser-cutting saw guide.
- To install risers less than 30 inches (760 mm) wide onto 500-gallon (2000-L) Orenco FRP tanks, cut the riser so it fits into the tank and the lowest rib rests on the tank's top, as shown.

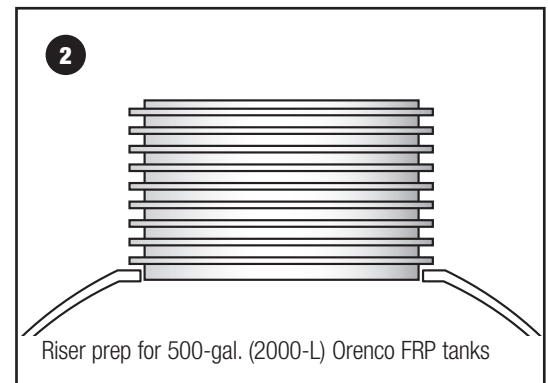
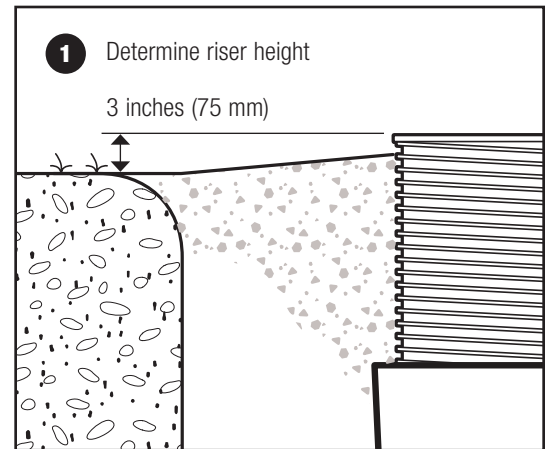
### **Step 3: Dry Fit Riser to Adapter**

**Step 3a:** Dry fit the riser to the adapter.

- Make sure riser penetrations are the right sizes and in the correct locations.

**Step 3b:** If the riser is higher than 3 inches (75 mm) above the estimated final grade, cut it to size per the instructions in Step 2.

**Step 3c:** If the riser is too short, use an Orenco grade ring to extend it.



**Instruction Set 2: Grommet Installation**

**Step 1: Mark Access Riser**

**Step 1a:** Use the site plans or drawings to find out if riser penetrations are needed.

**Step 1b:** Use the plans or drawing to mark the locations of the penetrations.

- If plans or drawings aren't available, use Drawing 1b as a general guide for locating riser penetrations.

**Step 2: Drill Holes and Clean Access Riser**

**Step 2a:** Drill holes for riser penetrations.

- If you have questions about where to locate various riser penetrations, contact your Distributor for more information.

**Using Orenco® RKHS Hole Saws ...**

Cut the hole and grind the ribs down to make a flat, smooth surface for installing the grommet.

- Make sure your hole saw is the correct size and your drill is at least 18 volts.
- Don't grind too deeply — about 1/16 inch (1.6 mm) is deep enough.

**Using Standard Hole Saws ...**

**1:** Use the correctly sized hole saw to cut a hole, centered on the mark.

**2:** Trim the riser ribs back 1 inch (25 mm) from around the hole.

- Use a grinder or cutting tool to notch the ribs through to the riser wall.
- Use a hammer and chisel to break off the notched rib sections.
- Use a grinder to make a flat, smooth surface around the hole.

**Step 2b:** Clean and deburr the hole and flat surface with a wire brush and deburring knife or tool.

- Be careful not to enlarge the penetration.

**Step 3: Install Grommet**

**Step 3a:** Apply a bead of adhesive to the groove in the grommet's outer diameter.

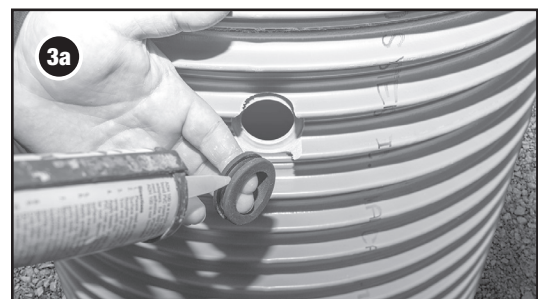
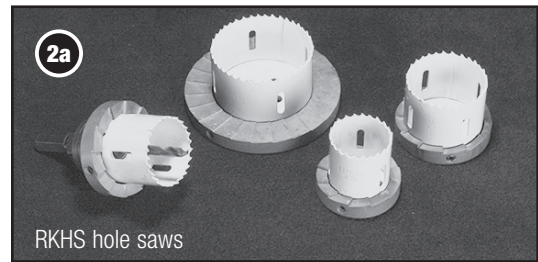
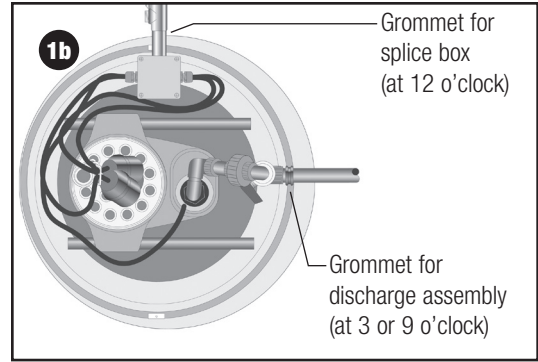
- For adhesive recommendations, see Instruction Set 7.

**Step 3b:** Firmly press the grommet into the penetration.

**Grommet Hole Sizing Guide**

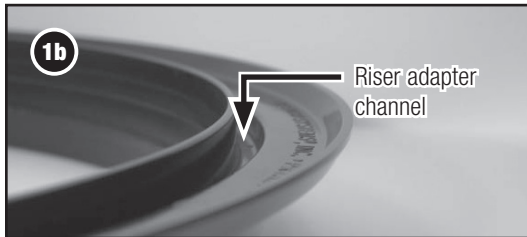
Grommet size, inches (nominal IPS pipe size)	Hole saw size
1/2	1
3/4	1-1/4
1	1-9/16
1-1/4	1-3/4
1-1/2	2-1/8
2	2-3/4
3	3-7/8
4	5

For more information on grommet dimensions and actual pipe O.D., see the Orenco Technical Data Sheet for grommets, NTD-RLA-PG-1





Cutaway view of Orenco® PRTA24-2, cast into concrete tank with 24-inch (600-mm) access riser attached



## Instruction Set 3: Riser Installation — PRTA24-2 Adapters

### Step 1: Prep Adapter Channel and Riser

**Step 1a:** Roughen the adapter channel and the bottom surfaces of the riser with sandpaper.

**Step 1b:** Use a clean cloth and acetone or alcohol to clean the channel and the bottom surfaces of the riser.

- The channel must be clean and dry for a good fit and watertight joint.
- Let the acetone or alcohol dry completely.

### Step 2: Apply Adhesive

Fill the channel with methacrylate adhesive.

- For adhesive recommendations, see Instruction Set 7.

**Note:** If you're using a methacrylate adhesive that's non-self-leveling, use enough to fully fill the channel, with no voids in the adhesive.

### Step 3: Install Riser

**Step 3a:** If the riser has penetrations, align the riser correctly.

**Step 3b:** Firmly press the bottom of the riser into the channel.

- Twist the riser back and forth slightly to fully seat it and to create a good bond.
- If the inside seam is not completely filled, add adhesive to form a complete fillet.

**Step 3c:** Use a tongue depressor, putty knife, or clean cloth to make a good fillet over the inside seam.

**Note:** If cold weather conditions or frost heave are a concern at the site, contact a qualified engineer or Orenco for additional recommendations on installing ribbed PVC risers.

**IMPORTANT:** Orenco strongly recommends that all tank risers 12-in. (300-mm) and larger in diameter be equipped with riser safety grates to help prevent accidental or unauthorized entry.

### Step 4: Test Riser Watertightness

Follow Instruction Set 6 of this document for testing the riser's watertightness.

**Note:** Watertight connections are critical for the wastewater system to function effectively and efficiently.



## Instruction Set 4: Riser Installation — RRFTA24, RRFTA30, PRTA24, PRTA30, FRTA24-RVF, and FRTA30-FRP Adapters

### Step 1: Prep Adapter and Riser

**Step 1a:** Roughen the bonding surfaces of the adapter and riser with sandpaper.

**Step 1b:** Use a clean cloth and acetone or alcohol to clean the bonding surfaces of the adapter and the riser.

- The bonding surfaces must be clean and dry for a good fit and watertight joint.
- Let the acetone or alcohol dry completely.

### Step 2: Apply Methacrylate Adhesive

Apply a bead of methacrylate adhesive to the outside of the adapter.

- For adhesive recommendations, see Instruction Set 7.

### Step 3: Install Riser

**Step 3a:** If the riser has penetrations, align the riser correctly.

**Step 3b:** Firmly press the riser onto the adapter until the bottom of the riser is resting on the concrete (cast-in adapters) or the adapter flange (bolted-down adapters).

- Twist the riser back and forth slightly to fully seat it and to create a good bond.

**Step 3c:** Apply a bead of methacrylate adhesive to the inside of the access riser-adapter joint.

**Step 3d:** Use a putty knife, tongue depressor, or clean shop rag to make a continuous fillet on the inside of the access riser-adapter joint.

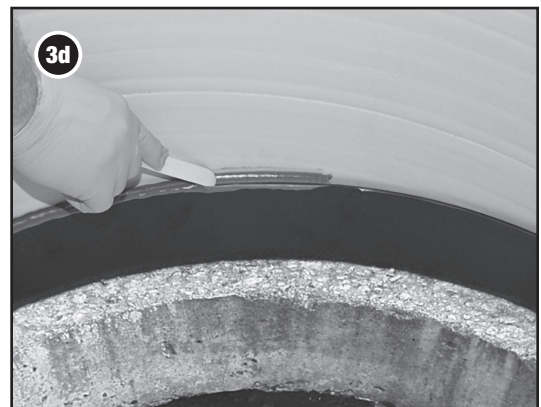
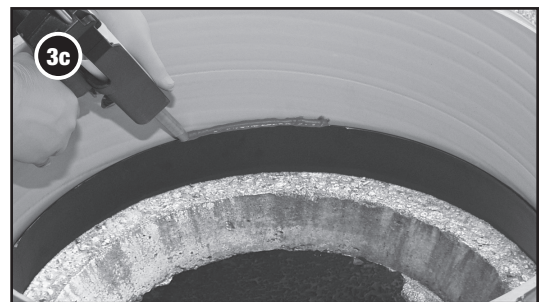
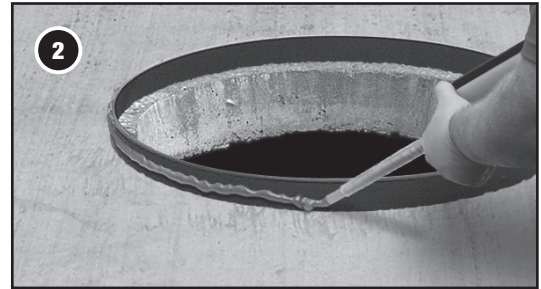
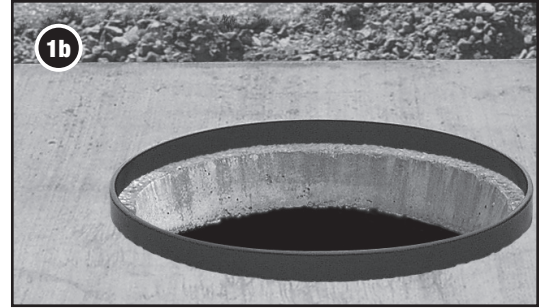
**Note:** If cold weather conditions or frost heave are a concern at the site, contact a qualified engineer or Orenco for additional recommendations on installing ribbed PVC risers.

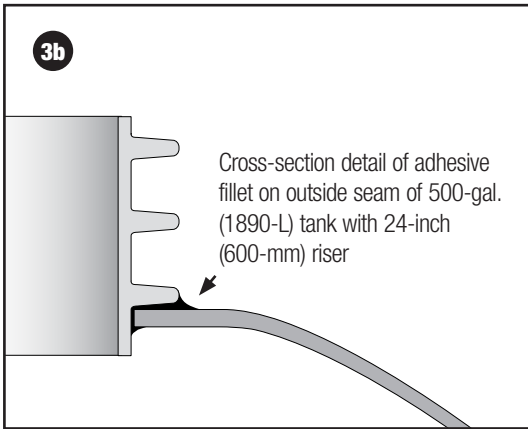
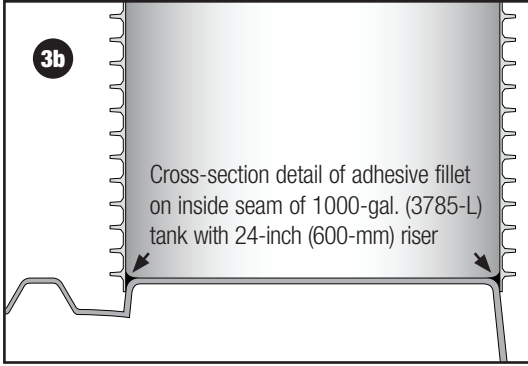
**IMPORTANT:** Orenco strongly recommends that all tank risers 12-in. (300-mm) and larger in diameter be equipped with riser safety grates to help prevent accidental or unauthorized entry.

### Step 4: Test Riser Watertightness

Follow Instruction Set 6 of this document for testing the riser's watertightness.

**Note:** Watertight connections are critical for the wastewater system to function effectively and efficiently.





## Instruction Set 5: Riser Installation — Orenco FRP Tanks with 24-inch-Diameter (600-mm) Risers

### Step 1: Prep Tank and Riser

**Step 1a:** Roughen the bonding surfaces of the tank and the riser with sandpaper.

**Step 1b:** Use a clean cloth and acetone or alcohol to clean the roughened tank surface and the bottom surfaces of the riser.

- The surfaces must be clean and dry for a good fit and watertight joint.
- Let the acetone or alcohol dry completely.

### Step 2: Apply Methacrylate Adhesive

Apply methacrylate adhesive to the bonding surfaces of the tank and the riser.

- For adhesive recommendations, see Instruction Set 7.

### Step 3: Install Riser

**Step 3a:** If the riser has penetrations, align the riser correctly.

**Step 3b:** Press the riser into position

- For 1000-gal. through 2000-gal. tanks (3785-L through 7570-L), firmly press the riser onto the tank opening
- For 500-gal. (1890-L) tanks, firmly press the riser into the tank opening.
- Twist the riser back and forth slightly to fully seat it and create a good bond.
- If the seams aren't completely filled, add adhesive to form a complete fillet.

**Step 3c:** Use a tongue depressor, putty knife, or clean cloth to make a good fillet over the seams.

**Note:** If cold weather conditions or frost heave are a concern at the site, contact a qualified engineer or Orenco for additional recommendations on installing ribbed PVC risers.

**IMPORTANT:** Orenco strongly recommends that all tank risers 12-in. (300-mm) and larger in diameter be equipped with riser safety grates to help prevent accidental or unauthorized entry.

### Step 4: Test Riser Watertightness

Follow Instruction Set 6 of this document for testing the riser's watertightness.

**Note:** Watertight connections are critical for the wastewater system to function effectively and efficiently.

## Instruction Set 6: Riser Watertightness Testing

**IMPORTANT:** A watertight tank and watertight riser-to-tank connections are critical for the wastewater system to function effectively and efficiently.

### Step 1: Prep for Test

**Step 1a:** Make sure the adhesive seams have set and the tank has been backfilled according to the manufacturer's instructions – typically to the tank's midpoint.

**Step 1b:** Plug the inlet (and outlet, if present) of the tank with watertight plugs.

**Step 1c:** Fill the tank with water to a level 2 inches (51 mm) into the riser.

### Step 2: Test Watertightness

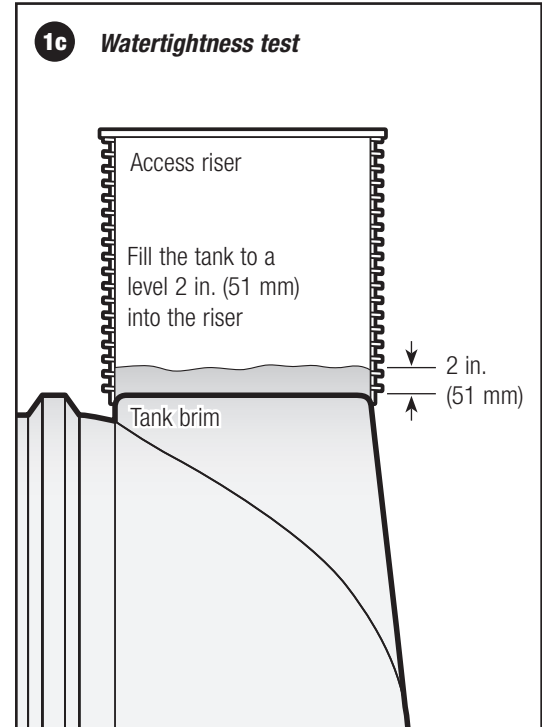
**Step 2a:** Wait for the required time before inspecting the riser-to-tank connections for leakage.

- Follow the tank manufacturer's recommendations (or applicable local regulations) for wait times before inspecting the tank for leaks.
- Orenco recommends at least 30 minutes for its fiberglass tanks.

**Step 2b:** Check for any drop in the liquid level inside of the riser and any visible leakage from the riser-to-tank connections.

- At the end of the test, there should be no drop in liquid level and no visible leakage from seams, pinholes, or other imperfections.
- If leaks are found during the test, seal the leaks and repeat the test.

**Step 2c:** Once the riser-to-tank connections are proven watertight, remove the plug(s) and drop the water level in the tank to just below the invert of the inlet or outlet, whichever is lower.



## Instruction Set 7: Adhesive Selection and Quantities

Use the table below to select the correct adhesive and quantity for your grommet or riser installation(s). Be sure to check the expiration date on the adhesive package. If the adhesive is expired, do not use it to install Orenco components.

**Note:** Before installing a riser on an Orenco riser-tank adapter with an adhesive not recommended in the table below, contact your Distributor or Orenco.

Component		Adhesive Type and Approximate Usage				
		MA8120 300/300-mL cartridge (600-mL total)	SA510 300/300-mL cartridge (600-mL total)	MA320 7-oz (200-mL) packet	IPS 810 1-pint (473-mL) 1-quart (946-mL)	ADH100 10.2-oz (300-mL) tube
<b>Grommets</b>		n/a	n/a	n/a	n/a	various quantities
<b>Riser Tank Adapters</b>	FRTA36	1 cartridge*	1 cartridge*	n/a	n/a	n/a
	PRTA24	½ cartridge*	½ cartridge*	1 packet	n/a	1 tube
	PRTA24-2	≥ ½ cartridge*	≥ ½ cartridge*	n/a	< 1 pint	n/a
	PRTA30	< 1 cartridge*	< 1 cartridge*	2 packets	n/a	2 tubes
	RRFTA24	½ cartridge*	½ cartridge*	1 packet	n/a	1 tube
	RRFTA30	1 cartridge*	1 cartridge*	2 packets	n/a	n/a

\* Indicates preferred adhesive for this application