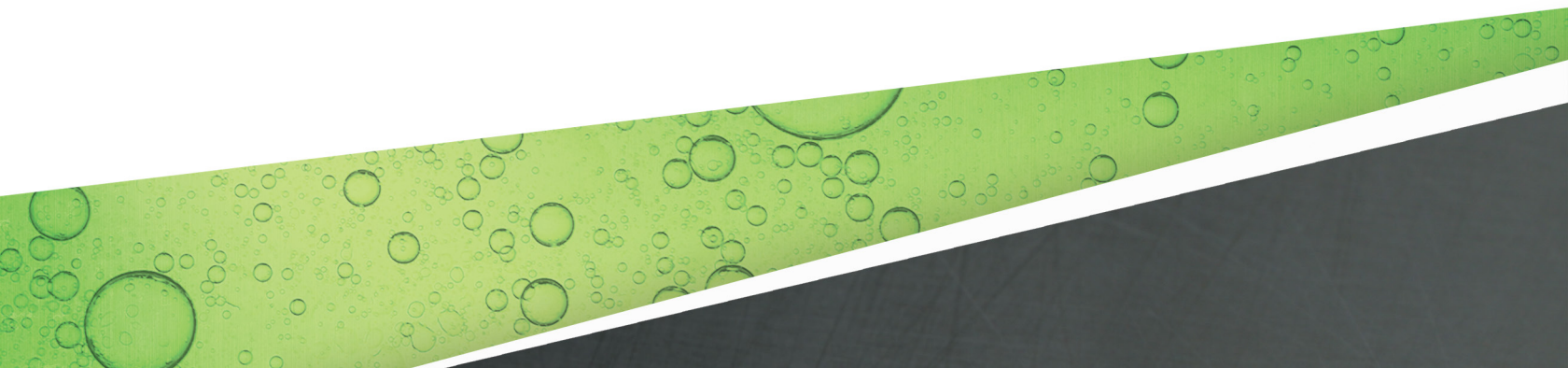


POLYETHYLENE TANK CHAMBER/SUMP

INSTALLATION GUIDE



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Introduction

Conventions used in this manual

This manual includes safety precautions and other important information presented in the following format:

NOTE: Provides helpful supplementary information.

IMPORTANT: Provides instructions to avoid damaging hardware or a potential hazard to the environment, for example: fuel leakage from equipment that could harm the environment.

⚠ CAUTION: Indicates a potentially hazardous situation that could result in minor or moderate injury if not avoided. This may also be used to alert against unsafe practices.

⚠ WARNING: Indicates a potentially hazardous situation that could result in severe injury or death if not avoided.

⚠ DANGER: Indicates an imminently hazardous situation that will result in death if not avoided.

Questions and concerns

In case of emergency, follow your facility's procedures. If you have questions or concerns about safety or need assistance, use the information below to contact Franklin Fueling Systems:

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Operating precautions

Franklin Fueling Systems (FFS) equipment is designed to be installed in areas where volatile liquids such as gasoline and diesel fuel are present. Working in such a hazardous environment presents a risk of severe injury or death if you do not follow standard industry practices and the instructions in this manual. Before you work with or install the equipment covered in this manual, or any related equipment, read this entire manual, particularly the following precautions:

IMPORTANT: To help prevent spillage from an underground storage tank, make sure the delivery equipment is well-maintained, that there is a proper connection, and that the fill adaptor is tight. Delivery personnel should inspect delivery elbows and hoses for damage and missing parts.

IMPORTANT: When you use sand as a backfill material, make sure you maintain the desired compaction (90% of standard proctor density) and prevent backfill migration. In areas with a high water table, you must take additional measures (such as using geotextile membranes or filter fabrics) to maintain the desired compaction.

⚠ IMPORTANT: Make sure all excavation, piling, and backfilling conforms to local geotechnical engineer requirements.

⚠ CAUTION: Use only original FFS parts. Substituting non-FFS parts could cause the device to fail, which could create a hazardous condition and/or harm the environment.

⚠ WARNING: Follow all codes that govern how you install and service this product and the entire system. Always lock out and tag electrical circuit breakers while installing or servicing this equipment and related equipment. A potentially lethal electrical shock hazard and the possibility of an explosion or fire from a spark can result if the electrical circuit breakers are accidentally turned on while you are installing or servicing this product. Refer to this manual (and documentation for related equipment) for complete installation and safety information.

⚠ WARNING: Before you enter a containment sump, check for the presence of hydrocarbon vapors. Inhaling these vapors can make you dizzy or unconscious, and if ignited, they can explode and cause serious injury or death. Containment sumps are designed to trap hazardous liquid spills and prevent environmental contamination, so they can accumulate dangerous amounts of hydrocarbon vapors. Check the atmosphere in the sump regularly while you are working in it. If vapors reach unsafe levels, exit the sump and ventilate it with fresh air before you resume working. Always have another person standing by for assistance.

⚠ WARNING: Follow all federal, state, and local laws governing the installation of this product and its associated systems. When no other regulations apply, follow NFPA codes 30, 30A, and 70 from the National Fire Protection Association. Failure to follow these codes could result in severe injury, death, serious property damage, and/or environmental contamination.

⚠ WARNING: Always secure the work area from moving vehicles. The equipment in this manual is usually mounted underground, so reduced visibility puts service personnel working on it in danger from moving vehicles that enter the work area. To help prevent this safety hazard, secure the area by using a service truck (or some other vehicle) to block access to the work area.

⚠ WARNING: Make sure you check the installation location for potential ignition sources such as radio waves, ionizing radiation, and ultrasound sonic waves. If you identify any potential ignition sources, you must make sure safety measure are implemented.

Installing the Tank Chamber/Sump

Storage and handling

Shipping and product inspection

Shipping:

- Riser should be stored riser top down inside chamber base with weld cords exposed.
- Never strap over top of weld cord area as this can lead to deformation and pringle shape leading to failure to weld scenario if not corrected.



- Examples showing proper packing for transport or warehouse storage:



Inspection

- Make sure the riser weld cord area is flat and no deformation, “pringle,” or warped shape is present (shown below).

NOTE: Warped shape is typically a result of improper shipping or storage.

- No deformation:



- Deformation:



Storage on-site before installation

- Chamber should be stored as they are shipped in container or covered area.
- Do not stack multiple riser together or place items on top of weld cords while storing prior to installation.



- Chamber should be kept clean and free of debris prior to installation.
- Failure to keep risers and weld cord area clean and free of debris can lead to weld failures and delays in site completion.



- Risers can be supported protecting the lid and sealing lip.



- Riser should be stored with cardboard and plastic wrap left in place until ready to install on chamber base.



Storage and handling guidelines

DO	DO NOT
Store chambers upright	Store on side
Stack no more than two units high	Stack more than two units high.
Store away from vehicle traffic or machinery	Store in traffic areas
Position the chambers where they will not need to be moved until installed.	Reposition the chambers frequently
Carry units when moving them	Drag the units
Avoid sharp corners and projections that could damage the chamber	Position chambers near sharp projections

- Remove the riser, lid and gasket pack from the base only when the product is required for installation.
- Leave the cardboard and plastic protection around the weld cord area until needed.
- Place the riser with the lip downwards on a flat level surface and standing on a protective sheet or supports (polystyrene packing or similar)
- Do not store the riser with the weld cord downwards.
- Protect the lid sealing lip from damage when moving the riser.

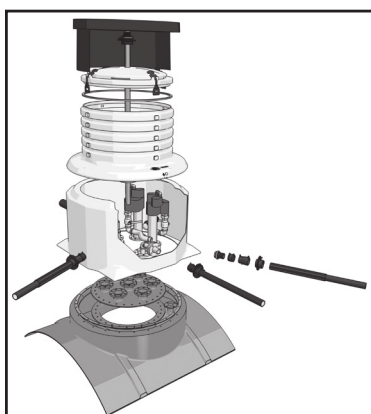
Installing a fusion polyethylene tank chamber/sump base

Pre-Installation

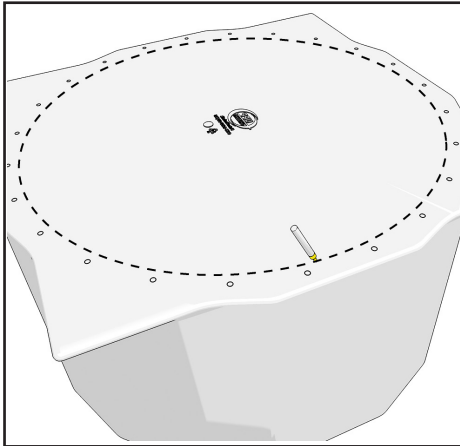


1. Confirm resistance of weld cords on riser.
2. Set ohmmeter to 200 Ω .
3. Connect leads to weld pins –push in from the outside to ensure good contact, wait until reading is stable.
4. Reading on LA Chambers should be within 22-26 Ω .
5. Reading on OCH Chambers should be within 26-31 Ω .
6. Chambers with readings out of range should be removed from site and returned to FFS.

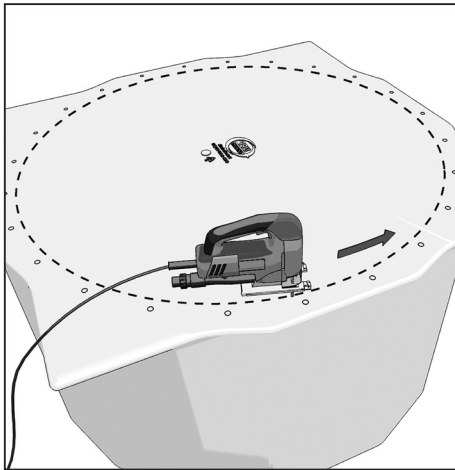
Starting the installation



1. Mark the base for the access shaft opening and bolt holes to suit the access shaft.

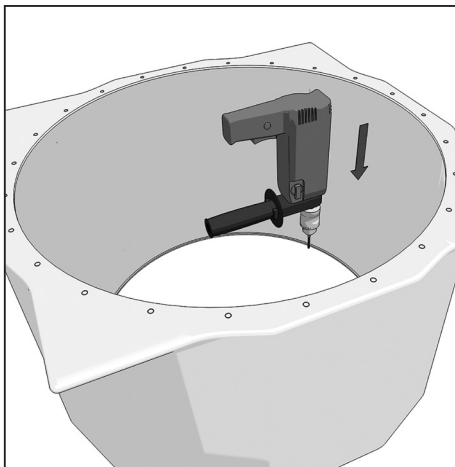


2. Cut base opening using jig saw or hand saw only.

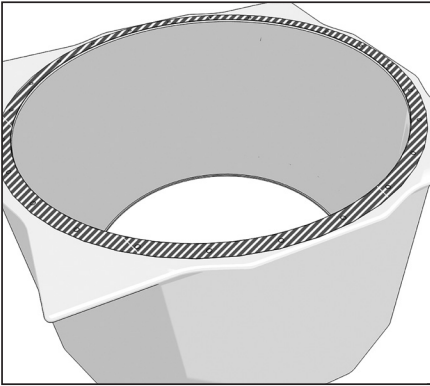


NOTE: For square collars, use a hole saw to cut all 4 corners of the opening. The opening's corners must have rounded corners and NOT have square-cut corners.

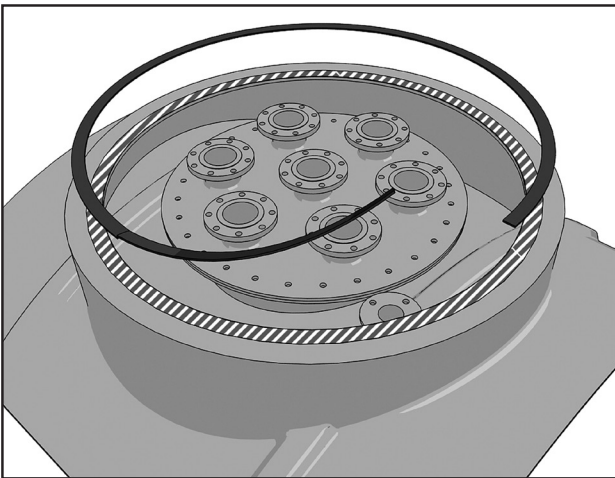
3. Drill bolt holes.



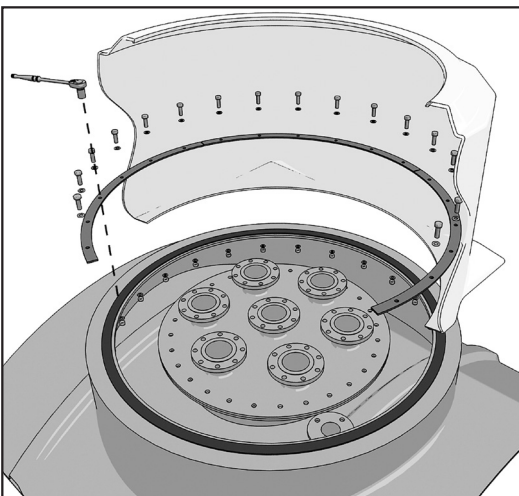
4. Clean the tank chamber base and tank access shaft flange with acetone.



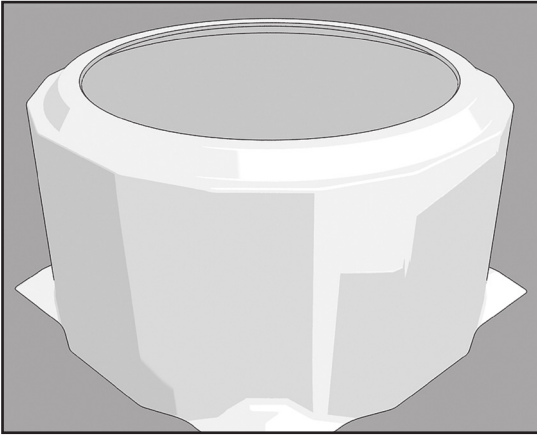
5. Apply adhesive backed gasket to access shaft flange ensuring there are no gaps. Use a sharp knife to create slits through the gasket at the location of the bolt holes.



6. Mount the sump/chamber base onto tank. Fit backing plates and bolt together using M12 (½") bolt sets (not supplied). Ensure all bolts are tightened equally. Recommended torque: 20Nm (14.75lbft). (See "Final backfilling" on page 19 for more information.)



7. Backfill up to the top of the tank collar. Ensure backfill is well compacted and is fully into the area under the tank sump.



Performing the tests

Performing the chamber base vacuum test

IMPORTANT: Make sure the temperature of tank sump/chamber is below 40°C (104 °F) during the vacuum test.

IMPORTANT: To reduce the effect of heat radiation from the sun, use a shelter such as a Gazebo to provide shade when testing in direct sunlight.

1. Vacuum test using the UPP® Vacuum Test Unit to prove the joint between tank collar and the tank sump base. The recommended test setting is 1 ft:-30mbar.



2. Make sure the vacuum lid gasket and chamber base flange are clean and free of debris.
3. Make sure the temperature of the tank chamber is below 40 degrees C (104 degrees F) before and during the vacuum test.
4. Place the vacuum lid on the chamber base.
5. Please place the test unit outside Zone 2 (the live site) but as close to the chamber as possible within 4 meters of electrical source.
6. Connect the hoses between the lid and test unit, and make sure the hose ends are in good condition.

7. Make sure the test On/Off switch is set to 0, and connect the power lead from the test unit to the power supply.
8. Select the Chamber/ Sump setting.



9. Set the switch to Test On position and the unit with auto-calibrate-ILights flashing.
10. When the calibration is complete, the vacuum pump runs until the correct test vacuum is reached, and then the unit starts the conditioning and test sequence. The test starts after the third pump run. The blue test light will turn on.
11. When the vacuum has been held for the required test period, the green light turns on.

NOTE: Vacuum testing should never be attempted when the chamber and ambient temperature are above 40 °C (104 °F). You can use tents and/or canopies to eliminate direct sunlight and lower the temperature prior to testing.

Performing the chamber base hydrostatic test



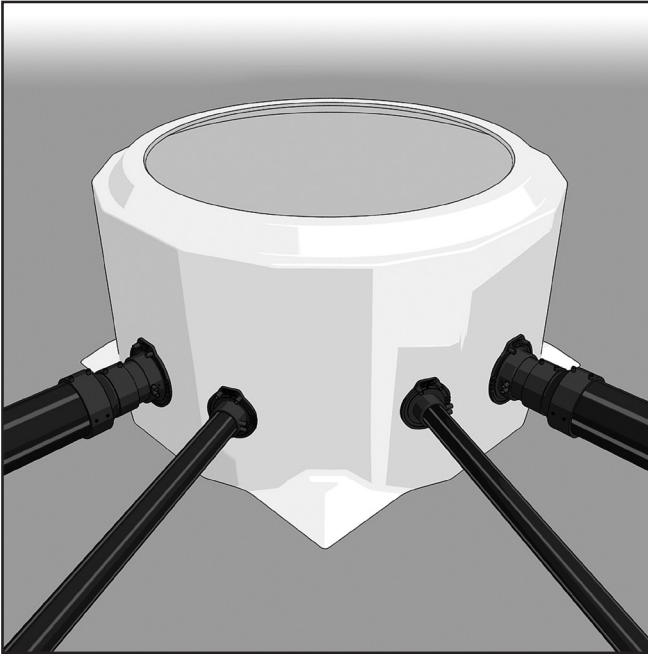
1. Fill the chamber base with water to at least 1 inch (25 mm) above the top of highest entry seal.
2. Mark the water line, and allow water to stand in the chamber for at least 1 hour.
3. Remove and dispose of the water per local regulations.
4. Install the piping according to the manufacturer's instructions.
5. Perform the vacuum test or hydrostatic test after you finish installing the piping.

Completing the installation

NOTE: All FFS UPP® fittings must be secured to the chamber using the Electrofusion welding process. Do not use additional sealant or screws.

NOTE: Make sure plugs in tank manway are in position and sealed.

1. Install Pipework per customer specification.

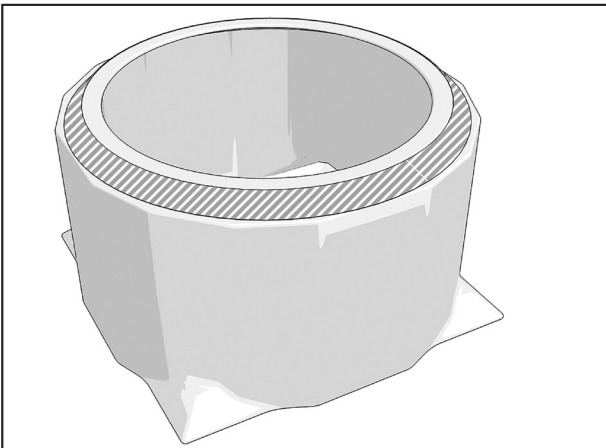


2. Repeat vacuum test (step 8) to prove all entry seals are tight.

NOTE: Never use sealant or screws on an entry seal. If an entry seal leaks, contact FFS.

Installing an electrofusion tank chamber/sump riser

1. Use a black marker to draw hash marks over the entire weld area.

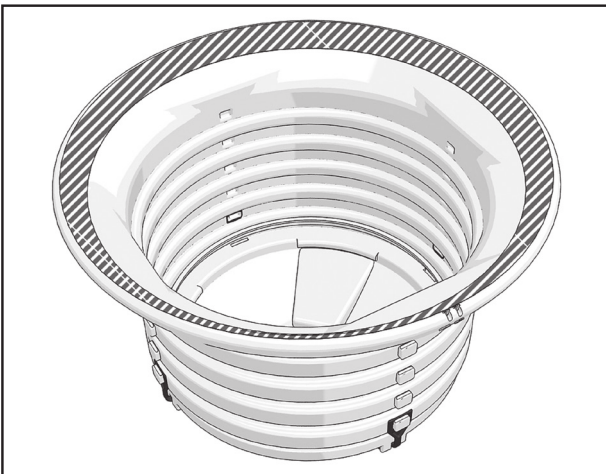


2. Scrape weld area on base with hand scraper. Clean weld area with acetone.

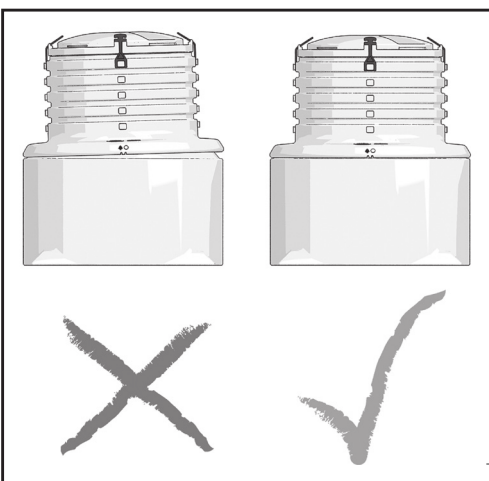


IMPORTANT: Make sure the surfaces you clean with acetone remain dry and uncontaminated before you weld them.

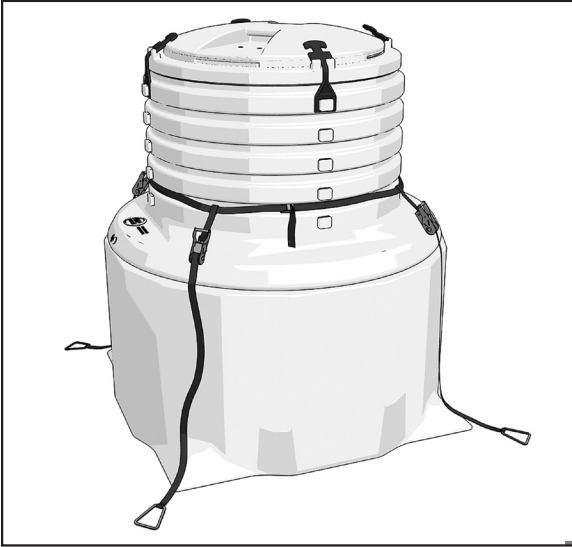
3. Clean weld area on the riser with acetone:
 - Make sure that all sand and debris are removed from between the weld cords.
 - Use a spray bottle filled with acetone to spray between the weld cords to loosen any sand or debris, and then remove sand or debris with a lint free rag.



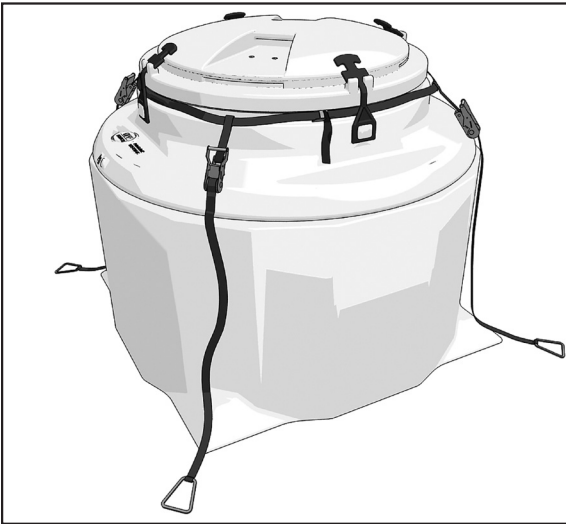
4. Place riser on base and ensure it is mounted squarely.



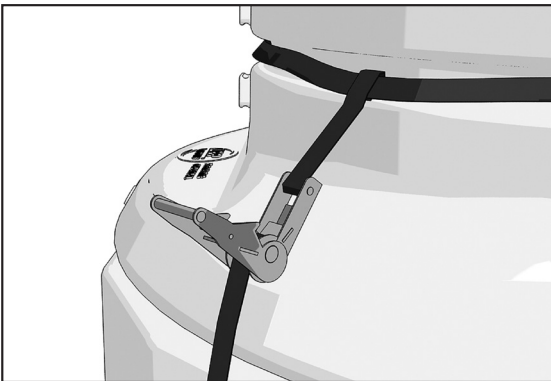
NOTE: For Deep Burial, pass the harness over the riser and position the top strap above the lower rib as shown below.



For Shallow Burial, pass the harness over the riser and position top strap below top rib.



5. Center the riser on the base. Make sure it sits squarely with an even gap all around. Pull the strap in tension, and ratchet until webbing has wound itself and is locked in place.



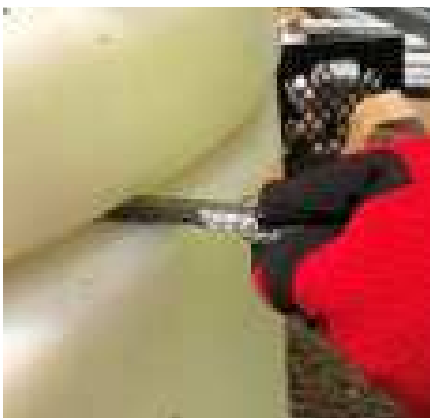
6. Add two full ratchets. Do not overtighten.



7. Repeat for the opposite corner and two remaining corners. Make ssure the riser is still sitting squarely.



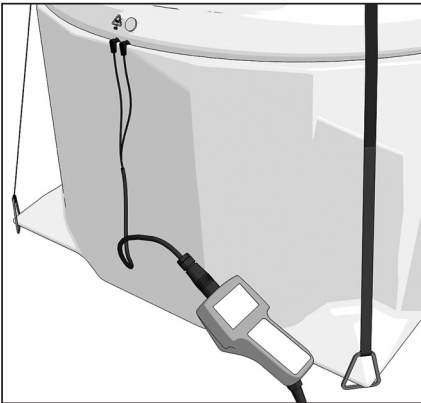
8. Use a flat, blunt implement to check that the riser is square. Place the implement in the gap between the base and riser section. It should be able pass into the void at a consistent depth without any difficulty, and the riser should be sitting squarely and fully upright on the chamber base.



9. Attempt to slide a piece of paper or business card between the weld cord and chamber bas to confirm they are in contact. Overtightening of harness can cause the weld cord area to separate. This can cause the weld between the riser and chamber base to fail.

IMPORTANT: Be careful when you adjust the harness. Do not overtighten.

10. Connect the white welding lead to the terminals. Begin weld. EF1 orange units will stop automatically after 6 minutes. Mark the time near the weld terminals. See manual 408001007 for Electrofusion Instructions.

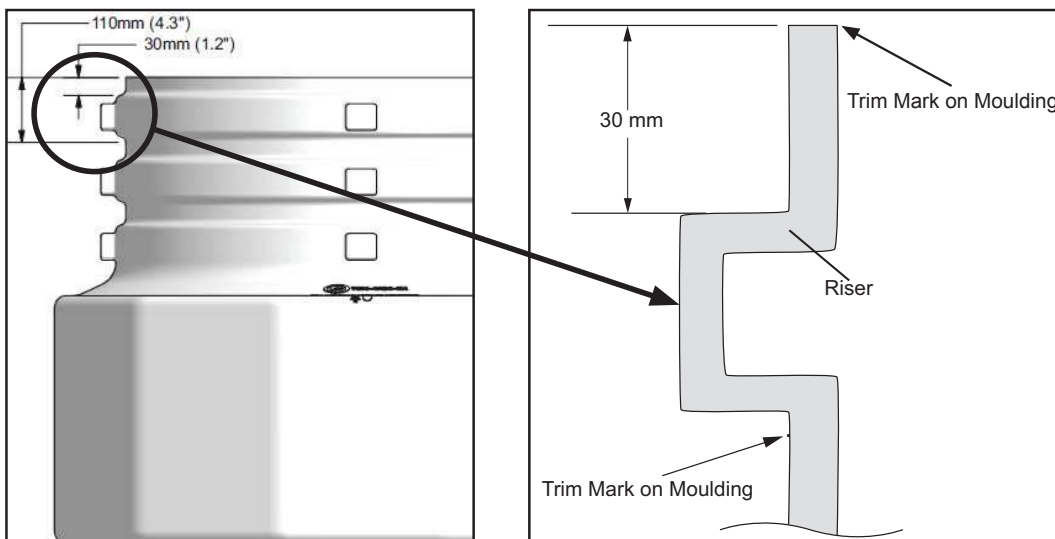


11. Wait for the weld to cool a minimum of 20 minutes, and then release the harness by pulling and holding the release tabs on the top of the assembly to override the ratcheting function.
12. Perform the vacuum test procedure to prove the welded joint. (See "Installing a fusion polyethylene tank chamber/sump base" in this manual for the test procedure.)

Height adjustment to suit final grade

Trim the riser.

1. Select the trim mark closest to the desired height. Make sure the trim height is above the bottom of the access cover skirt and is high enough to allow a seal between riser and access cover skirt below the toggle height.



2. Highlight Trim mark on riser with a marker pen.

IMPORTANT: Use only a handsaw or jig saw to trim the riser.

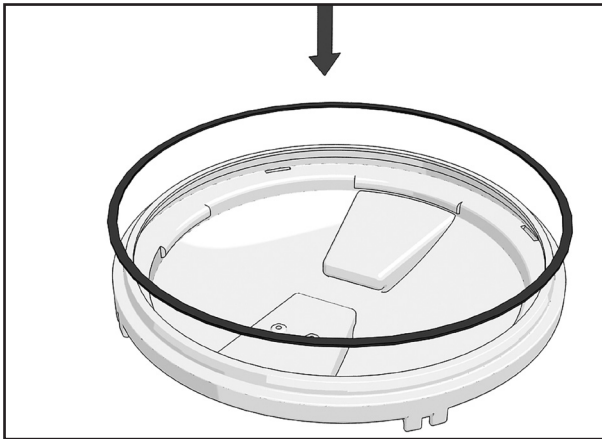
IMPORTANT: Make sure the cut edge is square and flat. Otherwise, there will not be a watertight seal with the lid gasket.

3. Trim the riser using highlighted trim mark as a guide and ensure cut edge is square and flat.
4. Remove any burrs using hand scraper. Maintain 30mm (1.2") clear vertical rise to ensure water tight lid location is correct.

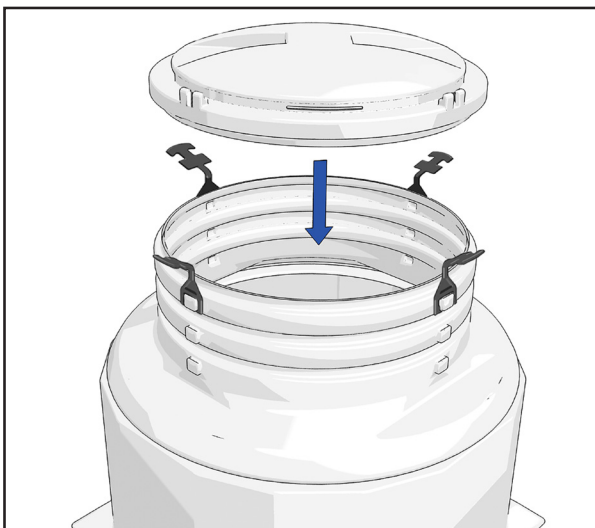
Installing the lid gasket

IMPORTANT: To help ensure that the chamber is water-tight, make sure the lid gasket is undamaged and properly fitted. Also, make sure you install the toggle latches properly.

1. Clean the gasket seat with acetone or isopropyl alcohol.
2. Attach the gasket to the gasket seat on the underside of the lid.

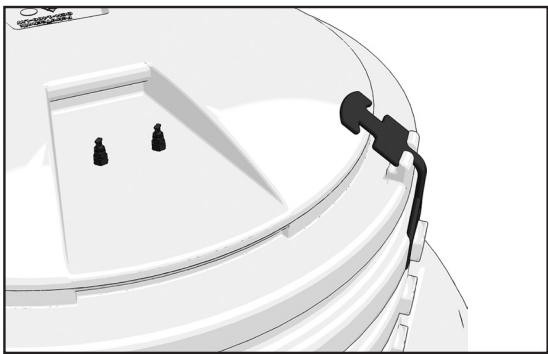


3. Position ends of gasket together first and work the gasket around the channel.
4. Place the lid on the riser and attach the latches



5. After welding the riser to the tank sump base, vacuum test to verify the tightness of the complete sump. Recommended Test Setting: 1ft: (-30mbar).

IMPORTANT: When you finish the vacuum test, make sure you reinstall the plugs in the test ports and position the lid correctly, with all toggles fitted, to keep the system liquid tight.



Final backfilling

Site investigation

The following are ways you can get information about the soil conditions you will encounter:

- Do a full geo-technical investigation of the site.
- Drill or dig a test pit in the vicinity of the excavation.
- Research site files for any details from previous work.
- Interview local contractors or consultants familiar with area.
- Determine the groundwater conditions.

When you prepare the tank pit area, refer to “Recommended Practices for Installation of Underground Liquid Storage Systems” (PEI/RP100-17).

IMPORTANT: Make sure all excavation, piling, and backfilling conforms to local geotechnical engineer requirements.

Rounded gravel backfill specifications

The following table shows the standard size of rounded gravel coarse aggregates that meet FFS backfill requirements for containment sumps, according to ASTMD-448, ASTM C-33, and AASHTO M 43. (The amount of material passing through each laboratory sieve is given as a percentage of the total weight.)

Size #	Sieve nominal size square openings	3/4" (19.1mm)	1/2" (12.7mm)	3/8" (9.5mm)	#4 (4.8mm)	#8 (2.4mm)
6	3/4" (19.1 mm)- 3/8" (9.5 mm)	90-100%	20-55%	0-15%	0-5%	
67	3/8" (9.5 mm)- #4 (4.8 mm)	90-100%		20-55%	0-10%	0-5%
7	1/2" (12.7 mm)- #4 (4.8 mm)	100%	90-100%	40-70%	0-15%	0-5%
						

Crushed stone backfill specifications

The following table shows the standard size of crushed stone coarse aggregates that meet FFS backfill requirements for containment sumps, according to ASTMD-448, ASTM C-33, and AASHTO M 43. (The amount of material passing through each laboratory sieve is given as a percentage of the total weight.)

Size #	Sieve nominal size square openings	1/2"	3/8"	#4	#8
7	1/2" (12.7 mm)- #4 (4.8 mm)	90-100%	40-70%	0-15%	0-5%
8	3/4" (19.1 mm)- 3/8" (9.5 mm)	100%	85-100%	10-30%	0-10%
					

Sand backfill specifications

IMPORTANT: Use only coarse or medium graded sand to backfill around polyethylene tank chambers.

IMPORTANT: Sand that is used for backfill must be free of salt, clay, fines, and native excavation soil. If you use sand for backfill in a cold weather installation, it must be free of ice.

Sand can be divided into the following categories based on particle size:

- Coarse Sand: This type of sand passes a No. 4 (4.75mm) sieve and is retained on a No. 10 (2.0mm) sieve.
- Medium Sand: This type of sand passes a No. 10 (2.0mm) sieve and is retained on a No. 40 (0.425mm) sieve.
- Fine Sand: This type of sand passes a No. 40 (0.425mm) sieve and is retained on a No. 200 (0.075mm) sieve.

Compacting backfill

It is important to compact backfill correctly in order to provide shear strength, stability, and increased stiffness to support underground chambers adequately.

IMPORTANT: Make sure backfill is clean, well-granulated, free-flowing, and inert.

IMPORTANT: Do not use mechanical compactors around tank chambers and dispenser sumps within 12" (30 cm) of the chamber or sump's wall. This helps prevent local deformation.

Place the backfill evenly in layers (or lifts). Compact each lift thoroughly before you place the next layer. In general, you should make each layer approximately 12" (30 cm) deep. Check for voids underneath the chambers while you are backfilling. If the backfill material appears loose in these areas, continue compacting the backfill, but keep the following in mind:

- Sand: When you use sand for backfill, make sure you achieve and maintain the desired compaction (90% of standard proctor density) and prevent backfill migration. In areas with a high water table, take additional measures (such as using filter fabrics) to maintain the proper compaction. You must do mechanical compaction to properly compact sand backfill after each lift, and you should compact sand at, or near, the optimum moisture content.
- Rounded gravel and crushed stone: These are self-compacting materials that you can use for backfill in all ground water conditions. Vibration compaction or shovel slicing works best with these granular materials

IMPORTANT: For installations in areas with a high water table, FFS recommends using self-compacting round gravel or crushed stone, which simplifies maintaining proper compaction.

NOTES:

- Before backfilling, position the chamber lid to prevent any deflection of the riser.
- Before an installation, add a 6" (15 cm) bed of backfill under the pipes. Make sure the backfill is not contaminated and that there are no voids under or around the pipe.

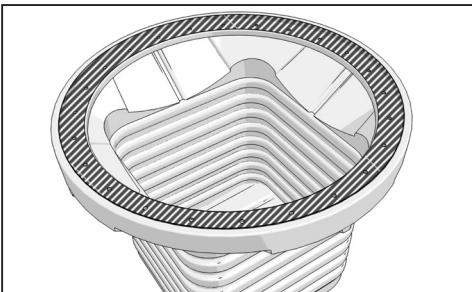
- If the tank chamber overhangs the tank containment collar, add enough backfill around the underside of the chamber so that it is fully supported.
- If the UPP® pipe exceeds 39' (12 m), lay it in a series of large curves not straight lines. (Uncoiled pipe will settle into a natural curve.)
- Make sure pipes are separated from each other by at least the diameter of the largest pipe.
- If pipes cross each other, make sure they are separated by at least as much backfill material as the diameter of the largest pipe or are protected by at least 1" (25 mm) of expanded polystyrene.

Installing a mechanical tank sump/chambers riser

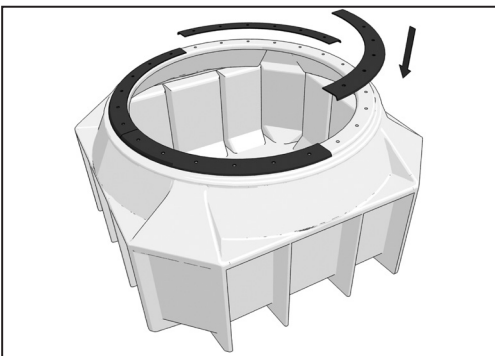
1. Cut riser to required height using ribs as a guide.



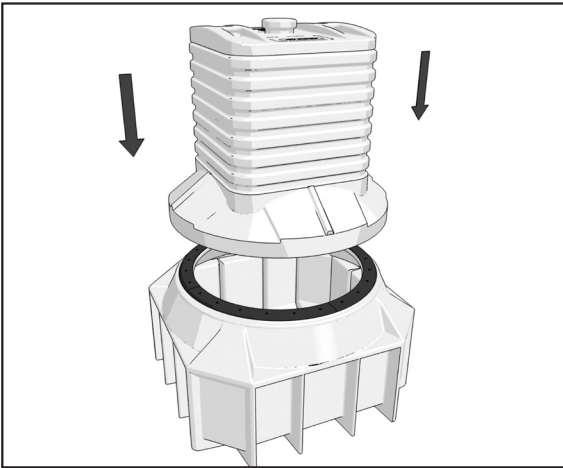
2. Clean gasket surfaces of chamber base and riser using cleaning solvent (Acetone).



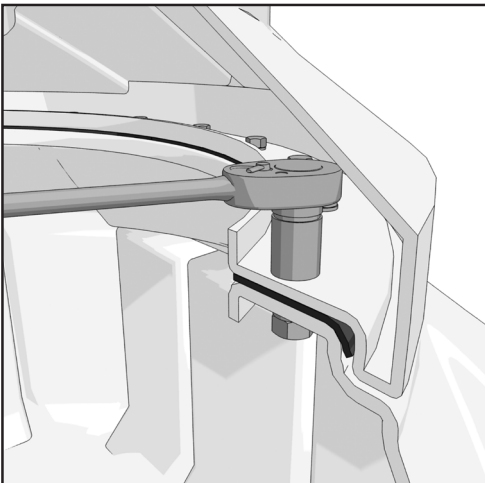
3. Apply the quarter circle gasket pieces one by one to top of chamber base- ensure holes in gasket line up with holes in chamber for best fit and make sure all joints between gasket quarter circles are butted together to make a water-tight seal.



4. Place riser on base and line up bolt holes.



5. Tighten all bolts (supplied M12x60) around chamber initially before repeating to make sure all bolts are fully tightened.



Installing a composite access cover with skirt

Parts and materials required

Composite access covers:

Part number	Description
PCR090	35" (900mm) composite access cover, C250 rating
PDR090	35" (900mm) composite access cover, D400 rating
PCR090-DIP	35" (900mm) composite access cover with integrated dip inspection port, C250 rating
PCR106	42" (1,060mm) composite access cover, C250 rating
PCR106-DIP	42" (1,060mm) composite access cover with integrated dip inspection port, C250 rating
PCR-DIPCAP	Replacement dip cap for composite access covers

Part number	Description
PCR-LIFT	Lifting handle tool for composite access covers
PCR-LOCK	Locking mechanism for composite access covers
SDFLX40FC	Sealant (to seal access cover frame to skirt)

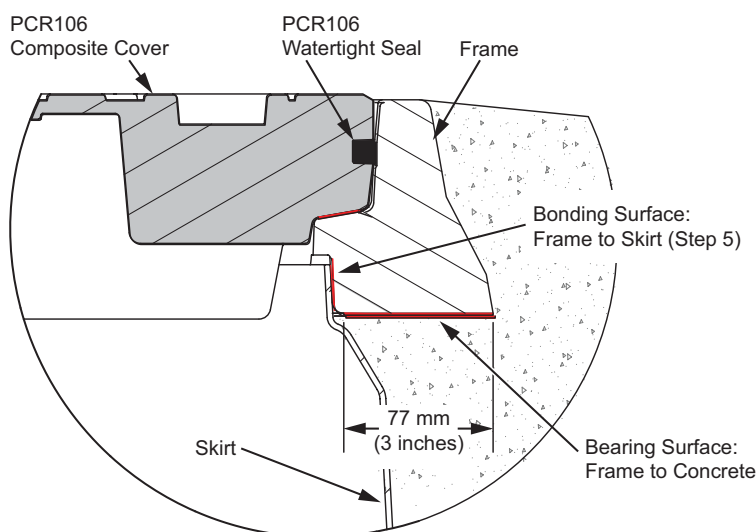
35" (900mm) composite access cover accessories:

Part number	Description
PDR090-S	Replacement gasket for 35" (900mm) composite access covers (between lid and frame)
PXR090-OCH-SK	35" (900mm) fiberglass skirt, for use with OCH tank cambers

42" (1,060mm) composite access cover accessories:

Part number	Description
PCR106-S	Replacement gasket for 42" (1,060mm) composite access covers (between lid and frame)
PCR106-OCH1400-SK	42" (1,060mm) fiberglass skirt, for use with OCH tank cambers
PCR106-TSM4542-SK	42" (1,060mm) fiberglass skirt, for use with TSM tank cambers

Prepare the product



IMPORTANT: Make sure the frame and cover are not damaged before you begin the installation.

1. Remove the packaging from the cover, and place the cover on a clean, level surface.
2. Remove the cover from the frame.
3. Abrade and clean the areas that will be bonded with Acetone.
4. Use SoudaFlex® 40FC bonding agent to attach the frame to the skirt. Make sure the skirt fully engages the inner lip of the frame.
5. Allow the skirt and frame to bond fully before continuing. (Refer to the MSDS for the bonding agent).

Prepare the area

1. Place the skirt on top of the backfill, and take account of how deep the frame is buried and the desired finished surface level.
2. Allow a minimum of 56 mm (2 ¼ inches) clearance between the bottom of the skirt and the wider extending section of the tank sump/chamber to allow for tank movement.
3. Allow a minimum of 56 mm (2 ¼ inches) clearance between the bottom face of the access cover and the top face of the tank sump/chamber lid.
4. Backfill around the area of the skirt to secure its position.

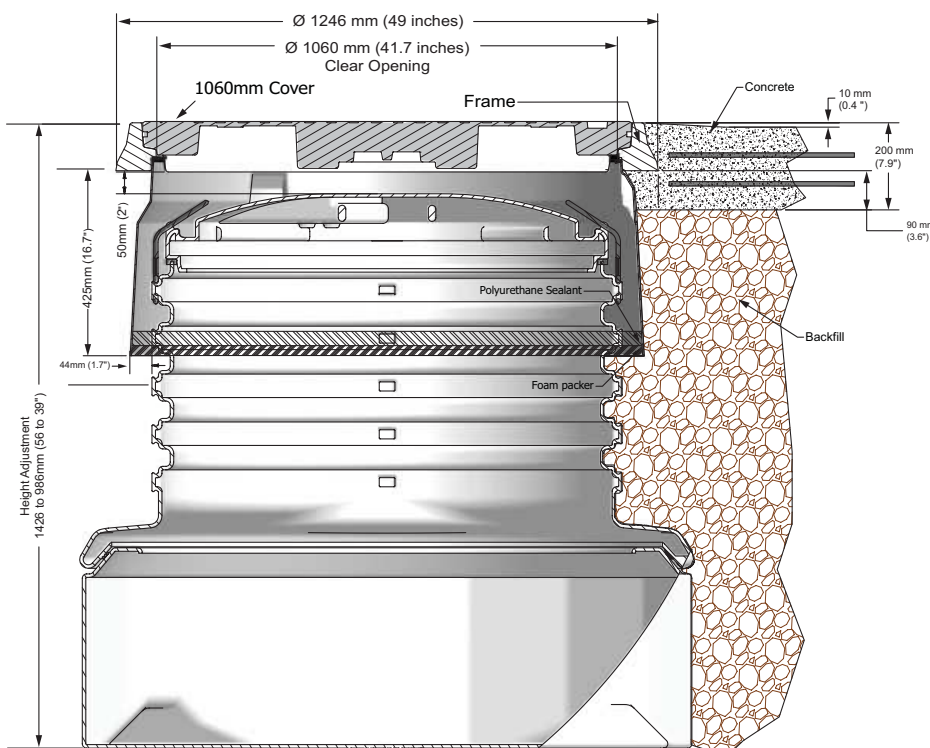
Prepare the forecourt surface

FFS recommends a minimum finished base thickness of 200 mm (7 ⅞ inches) in C30-35 concrete to achieve maximum load capabilities of EN124 D400 covers.

Crown the cover

To improve the dispersion of water away from the cover, crown the cover slightly above the finished surface level. Typically, a crown of 5–10 mm over a distance of 300 mm (0.2–0.4 inches over 12 inches) around the perimeter of the cover is effective. In areas with above average or extreme rainfall, you can extend the crown to 15 mm over a distance of 300 mm (0.6 inches over 12 inches) to improve surface water run off.

Apply a two-part, cold-pour sealing compound

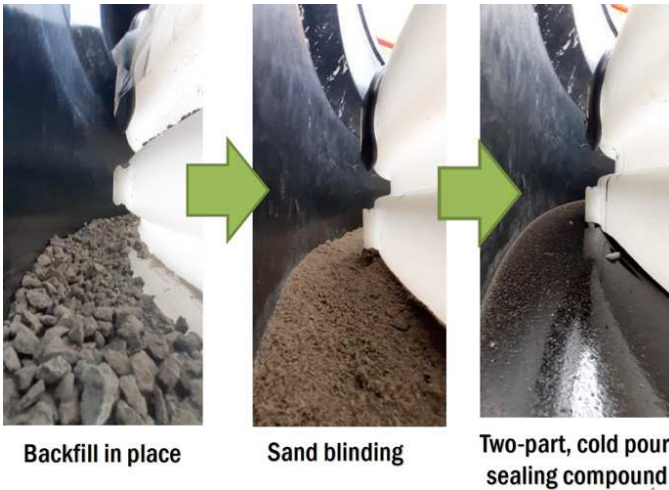


IMPORTANT: In areas with a high water table, use a foam blocker to stop water from coming in before you apply a two-part, cold-pour sealing compound.

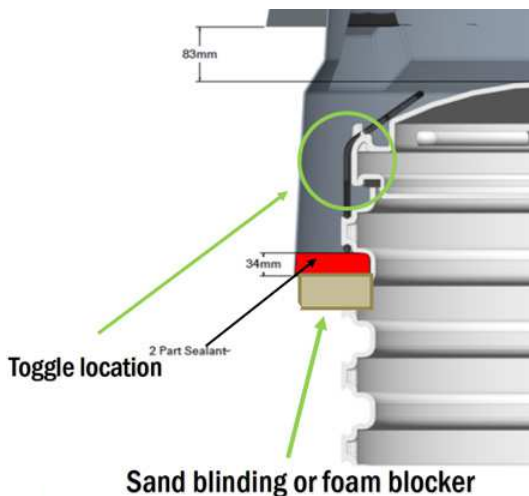
IMPORTANT: Make sure both the access cover skirt and the chamber riser are clean and dry before you apply the two-part, cold-pour sealing compound.

IMPORTANT: Make sure you apply the two-part, cold-pour sealing compound below the toggles. This allows you to replace the toggles, if necessary, without disrupting the seal.

1. Do one of the following:
 - Fit a packing piece between the skirt and chamber riser on top of the backfill.
 - Cover the backfill with a layer of well compacted sand.



2. Apply a two-part, cold-pour sealing compound. Allow the compound to cure for the recommended time. (See the compound's MSDS.) Approved Sealing compounds (2 tubes per chamber):
 - Fosroc® Colpor 200
 - CM200PF



3. Clean the cover and frame thoroughly to remove excess concrete. Give special care to the area around the seal and the corresponding sealing face of the cover.

Maintenance

Composite access cover seals are replaceable and are considered a service spare:

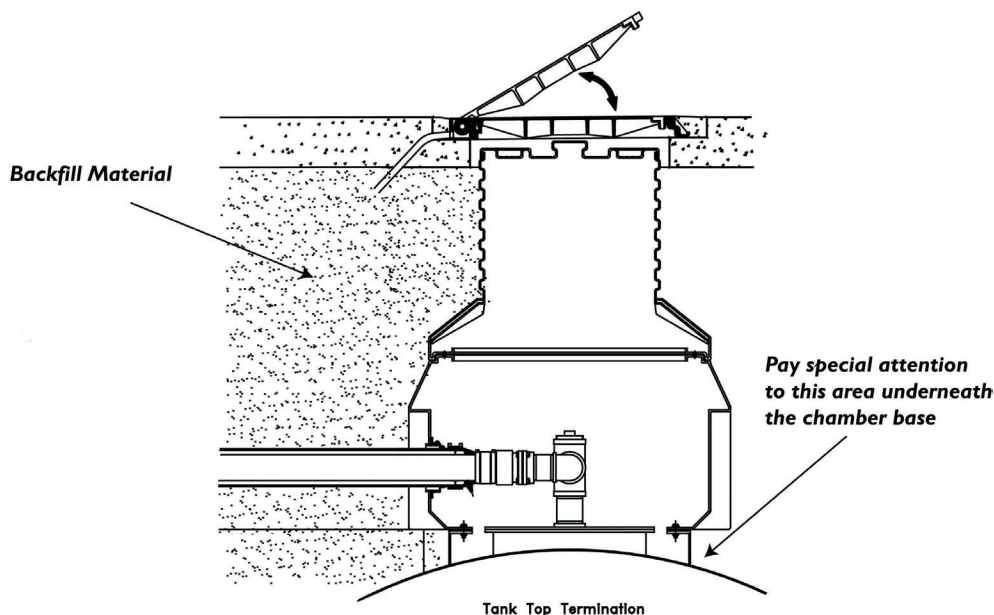
1. Remove the existing seal.
2. Clean all of the silicon mastic out of the sealing channel.
3. Apply a continuous bead of silicone mastic in the channel as bedding.
4. Install the new seal.

Installation overview illustrations

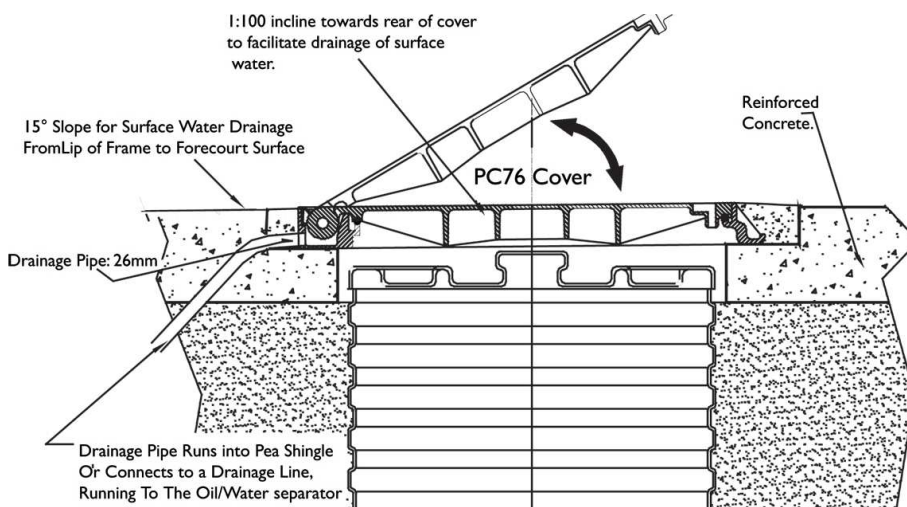
IMPORTANT: When you install access covers at or above ground level, make sure no load from the access cover or supporting structure is transferred to the top face of the tank access chamber. To do this:

- Position supporting structures outside the footprint of the tank chamber.
- Make sure the supporting structure is attached to the surrounding forecourt structure.
- Make sure the supporting structure has a foundation that spreads the load through the backfill material and not onto the tank chamber.
- Make sure that the separation distance between the supporting structure foundation and tank chamber shoulder exceeds 300.0 mm (11.8").

Installation overview



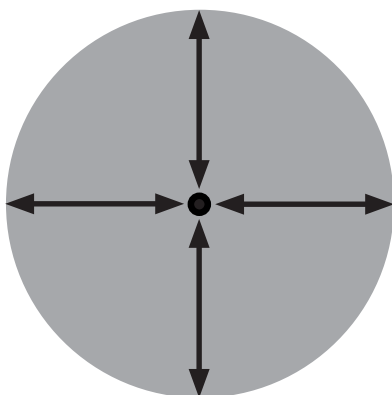
Lid installation overview



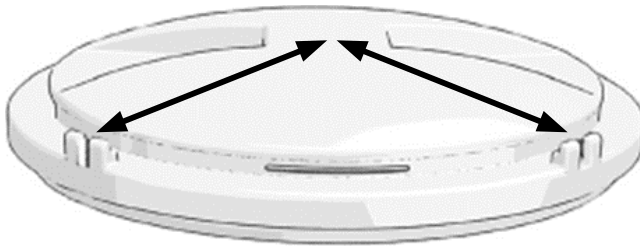
Installing a dip riser entry seal

Parts and materials required:

- 305- Entry seal with rubber reducer and band clamps
 - Paint scraper
 - Hole saw-HS5/ Drill
 - 305-Clamp-1 (green)
 - Acetone
 - Lint-free rags
 - Nitrile gloves
 - Black marker
 - OCH Chamber lid
 - UPP EF1 Welder with red leads
 - UPP Piping Systems Electrofusion Welding Instructions (FFS part number 408001007)
1. Measure from the sump rim to the edge of the dip riser from 4 axis points at 90 degree angles.



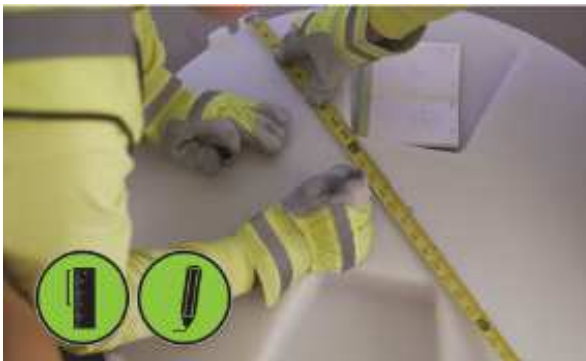
2. Translate the measurements to the sump lid to mark the location the dip riser will pass through the lid.



3. Measure from the inside of each point where the latches attach to the sump lid. This provides accurate measurements based on the distance from the sump rim to the sump lid.



4. Place the sump lid on a clean surface and mark it where you will drill the hole for the dip riser.



5. Use the drill and HS5 hole saw to drill a hole in the lid at the mark.



6. Deburr the hole.



7. Place entry seal into drilled hole. Using black marker trace around outline of entry seal.



8. Shade in area inside outline of entry seal- this is the area that will be scraped with hand scraper.



9. Use the hand scraper to scrape off the shaded area, and then clean the area with acetone.



10. Trim the internal spigot from the 305-entry seal.



Cut this section off.

DO NOT CUT this part of the spigot.

11. Clean the 305-entry seal weld face with acetone.



12. Secure the 305-entry seal to the sump lid with a 305-Clamp-1.



- Slide the front of the clamp (with the hole for the screw) onto the bottom side of the sump lid.
- Insert the 305-entry seal, and then finish installing the 305-Clamp-1.

13. Tighten the clamp, and then try to slide a business card between the 305-entry seal and the sump lid. If you can, use pieces of wood or cardboard to offset any warping or gaps.



IMPORTANT: To help ensure that the chamber is water-tight, make sure you install the dip riser entry seal boot correctly and fit the band clamps properly.



14. The correctly installed dip riser feeds through the entry fitting and is secured with a reducer and band clamps.



