

INSTALLATION INSTRUCTIONS

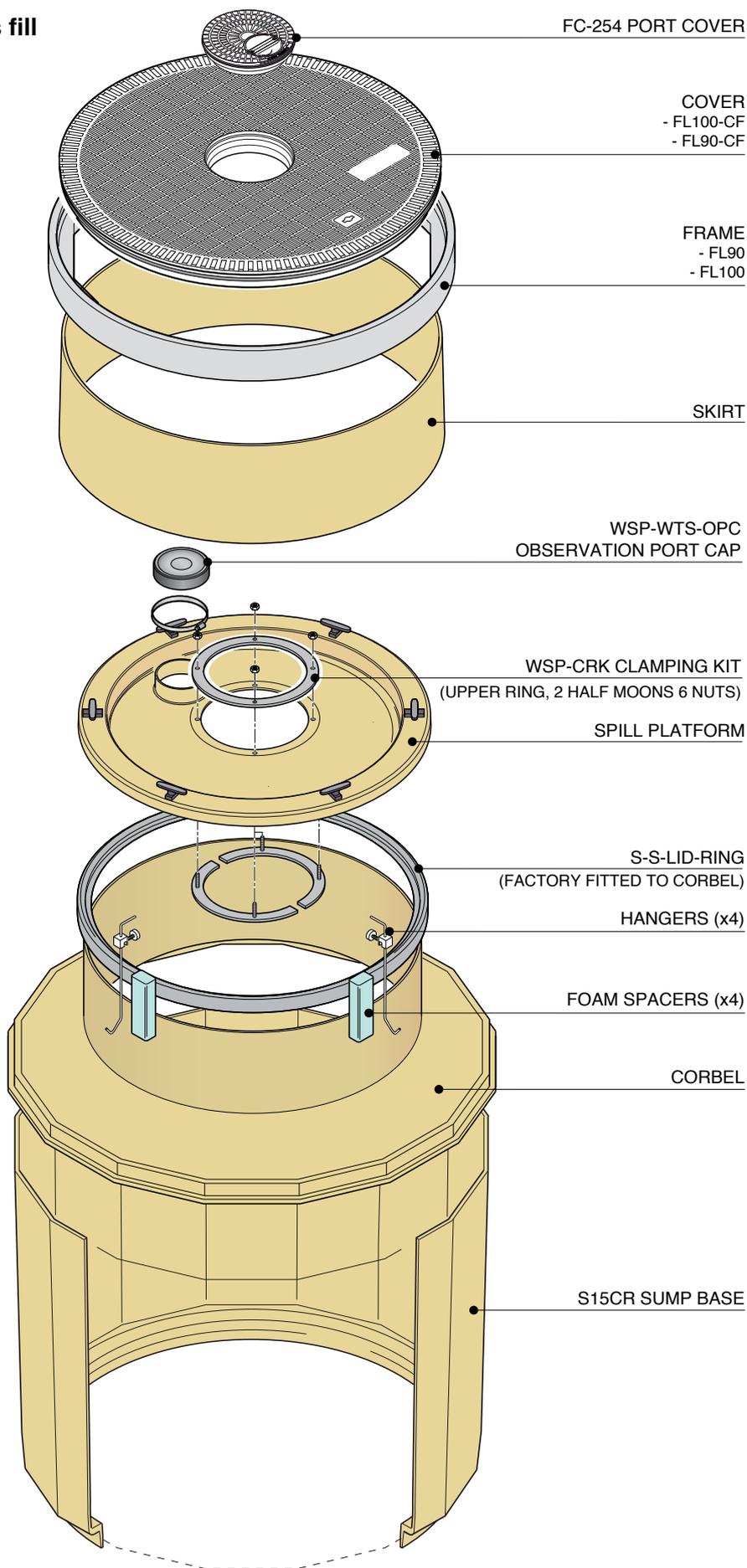
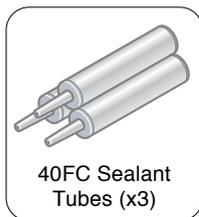
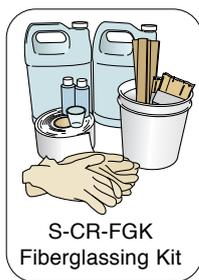
Fibrelite Centre Fill Sump Systems

FIBRELITE

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These instructions are for installing Fibrelite S15CR series fill sumps with FL90 or FL100 centre fill covers.

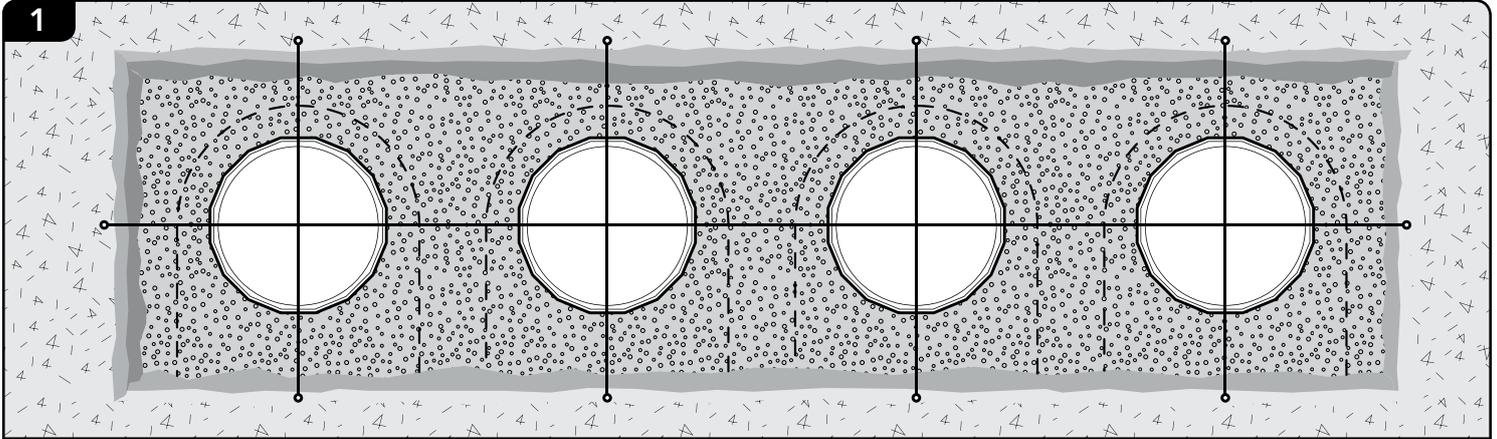
Confirm that all sumps, manholes and related parts and accessories have been received.



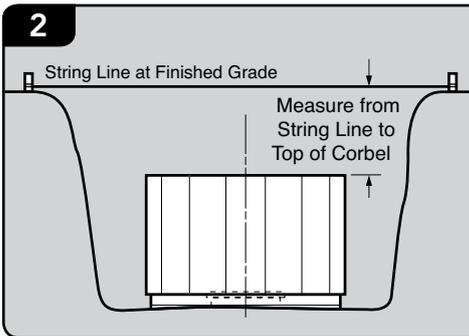
DO NOT STORE SUMPS ON THEIR SIDES PRIOR TO INSTALLATION



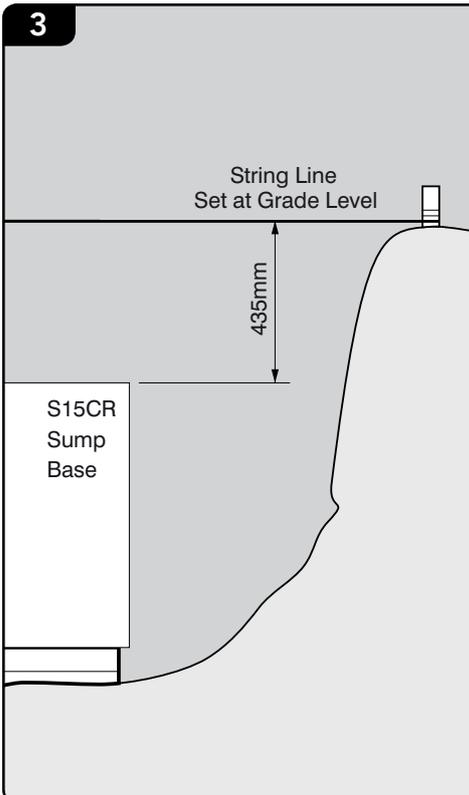
Failure to follow this instruction may cause the sumps to deform and become “out of round.” When installed onto the tank collar, the out-of-round sump base may be difficult to connect to the round tank sump corbel. Store sumps on either round end to prevent this from happening.



Install string lines at finished grade level (manhole grade level) across the length and width of the tank farm in order to accurately measure the distance from grade level to the tank top.



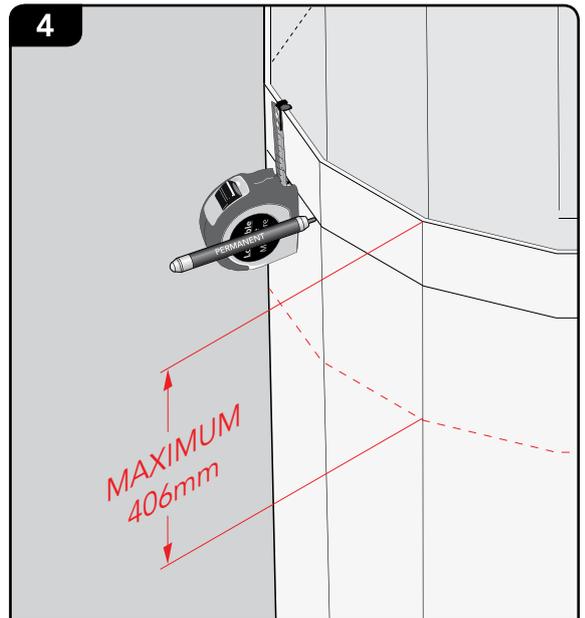
Place the sump bases onto each of the tank collars (“dry fit” the sump base at this stage). Mark the sump to reflect the tank it is installed on. Measure the distance from the string line to the top of the sump and note the measurement in a log or on the side of the sump.



The top of the S15CR sump base must be 435mm below the string line set at finished manhole grade level. This will provide sufficient clearance for both the Fibrelite corbel and the watertight spill platform.

If the sump base is more than 435mm below the string line, it will be necessary to install a 300mm extension and trim it so the combined sump base and extension are 435mm below the string line. If the sump base is less than 435mm from the string line, it will be necessary to trim the sump

Note: For more detail, please refer to the drawing shown on page 10 showing finished fill sump installation showing all critical dimensions.



If the sump base must be trimmed, mark the trim line on the sump base using an indelible marker - make sure to mark a level line on the tank sump for cutting (use a locked tape measure as shown). If the line is not level, re-measure and re-mark until the marked line is correct and level. The sump and corbel will not seal properly if the cut is jagged or uneven.



The S15CR sump may be trimmed a maximum of 406mm from the top. If this is not sufficient, contact Fibrelite. If the sump is trimmed more than 406mm, it may be difficult to fit the corbel onto the sump base.

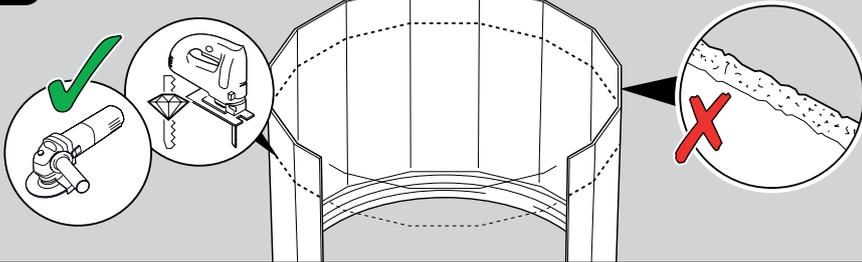
INSTALLATION INSTRUCTIONS

(Trimming Sump Base to Achieve Correct Sump Height)

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Use an appropriate cutting tool and blade such as a diamond blade cutter (as shown in the drawing) to ensure that the sump is cut evenly.

A jagged or uneven cut made with a reciprocating saw will be difficult to seal when the corbel is installed.

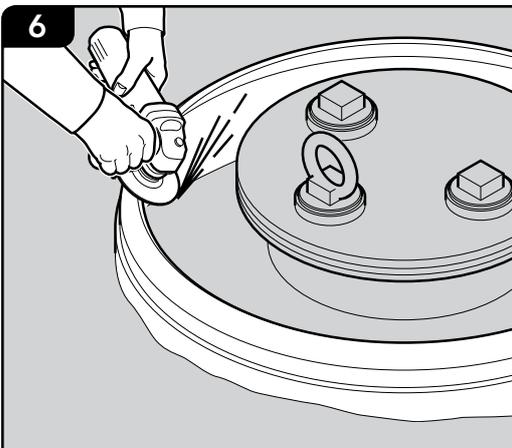
(Preparing Tank Collar and Sump Base For Fibreglassing)



CORRECT PREPARATION IS ESSENTIAL!

Failure to correctly prepare the surface prior to fibreglassing may result in a "WEAK" joint and subsequent failure.

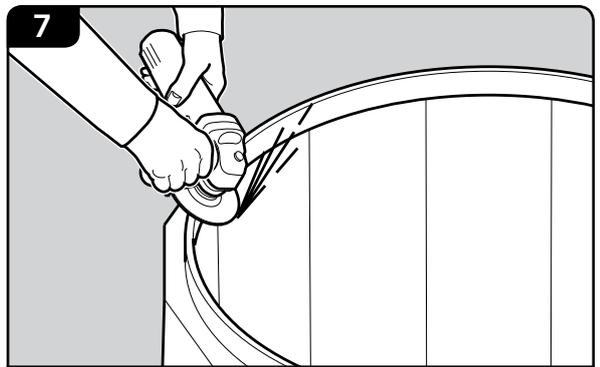
6



Do not grind the tank collar with an electric grinder unless all appropriate safety procedures for open tank pits have been followed. If there is any risk that gasoline vapours may be present in the tank pit, use only explosion-proof or air-powered tools or sand the collar by hand.

The surface of the tank collar must be prepared properly prior to fibreglassing – use an angle grinder to expose the fibreglass surface to ensure good fibreglassing. If grinding is not possible, sand by hand - use heavy grit sandpaper to ensure that the fibreglass surface is properly exposed.

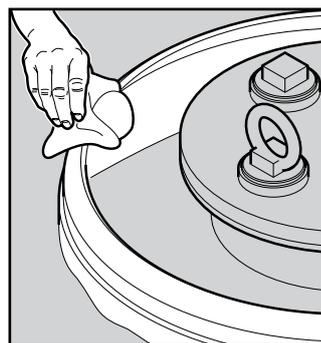
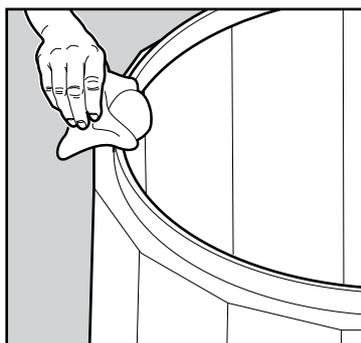
7



The surface of the tank sump collar must also be properly prepared prior to fibreglassing. Sand both the internal and external sides of the collar.

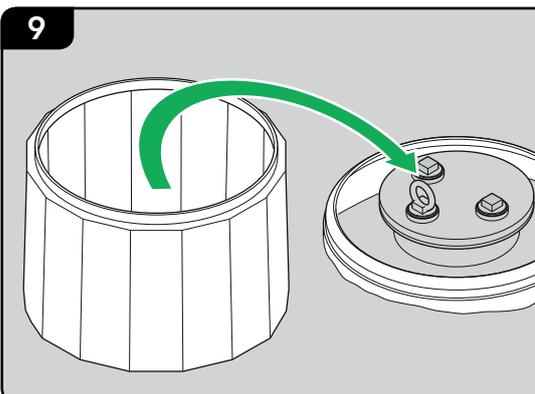
If grinding is not possible, sand by hand - use heavy grit sandpaper to ensure that the fibreglass surface is properly exposed

8



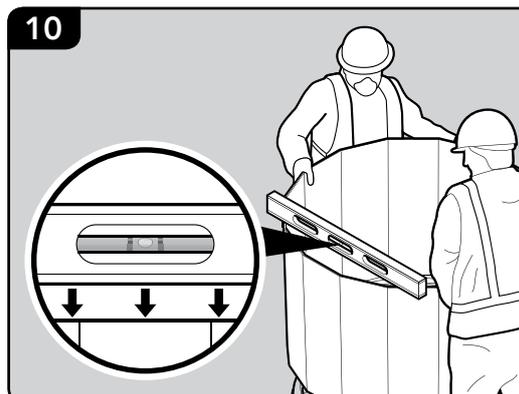
All abraded surfaces must be wiped clean with acetone (or equivalent replacement) immediately prior to fibreglassing to ensure that no dust or dirt is present on the surfaces.

9



Immediately after cleaning, install the tank sump onto the tank collar.

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Use a level to properly set the tank sump in place – make sure the sump will be level to finished grade.

INSTALLATION INSTRUCTIONS

(Fibreglassing the Sump Base to the Tank Collar)

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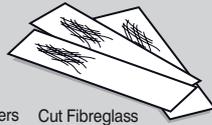
S-CR-FGK Fibreglassing Kit



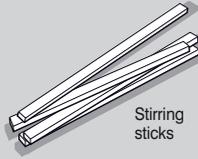
(2) 4.5 liter jugs of polyester resin



(2) 50ml containers of catalyst



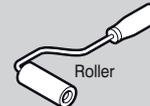
Cut Fibreglass strips



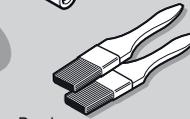
Stirring sticks



(2) mixing buckets



Roller



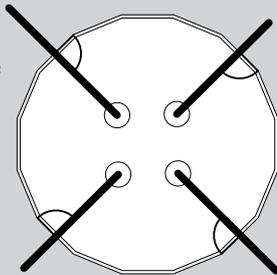
Brushes



Gloves

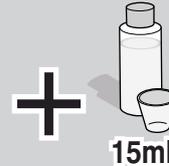
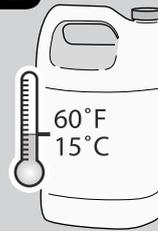
11

Plan View of Manway



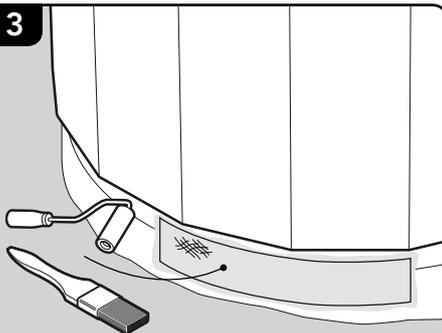
Prior to fibreglassing the sump to the tank collar, dry fit it onto the collar and position so that the sump facets align perpendicular with the pipework exit/entry points.

12



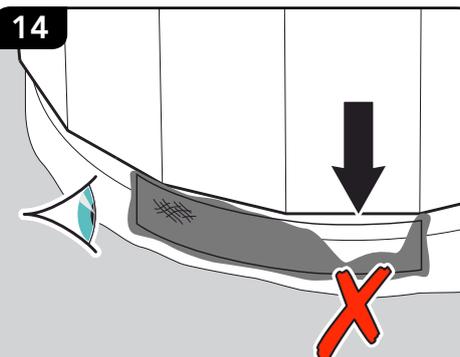
At 15°C, mix 1 quarter resin with 15ml catalyst and stir well. Note: Detailed tank collar fibreglass instructions are packed in fibreglassing kit.

13



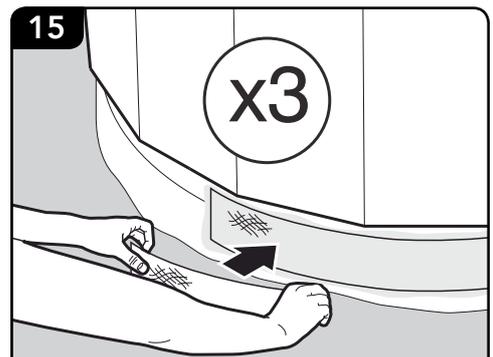
Brush resin onto the joint surface, apply a strip of fibreglass over the joint and apply resin over strip using a roller brush.

14



Ensure the resin covers the fibreglass strip, do not leave any dry areas.

15

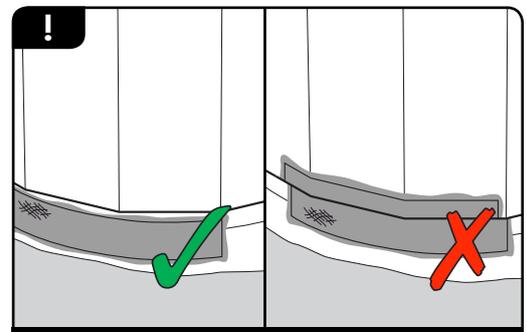


Apply a second and third layer of fibreglass as per the previous two steps.

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Leave to dry for a minimum of 1 hour, ensure the resin has hardened before applying resin to the internal joint. The fibreglass strips must overlap at the joints by a minimum of 50mm and each layer must be staggered. Allow 24 hours before exerting pressure to the sump.



! WARNING !

Do NOT cut fibreglass strips too large. If the base of the sump is laminated too high, it may distort the shape of the sump when it dries.

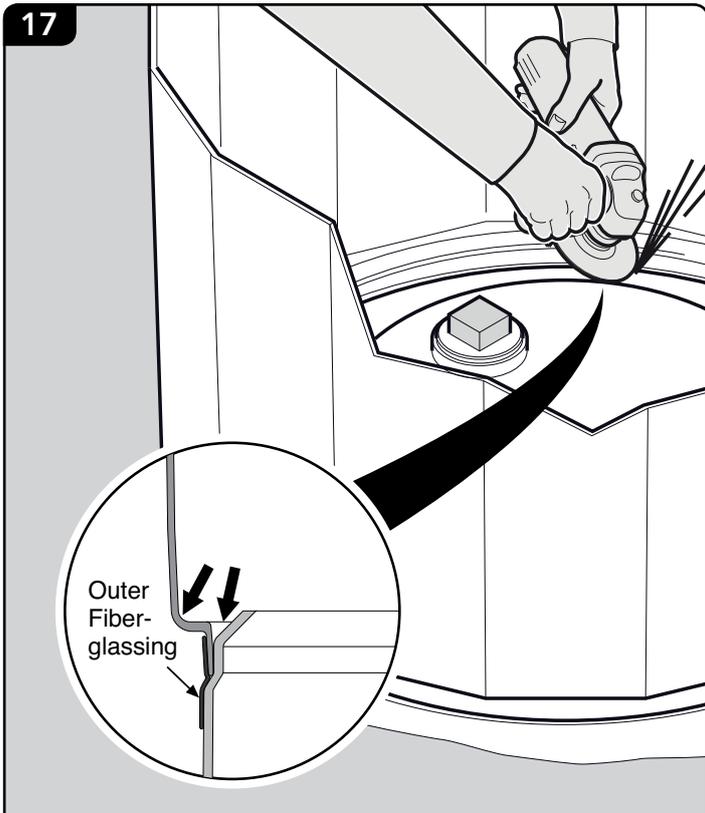
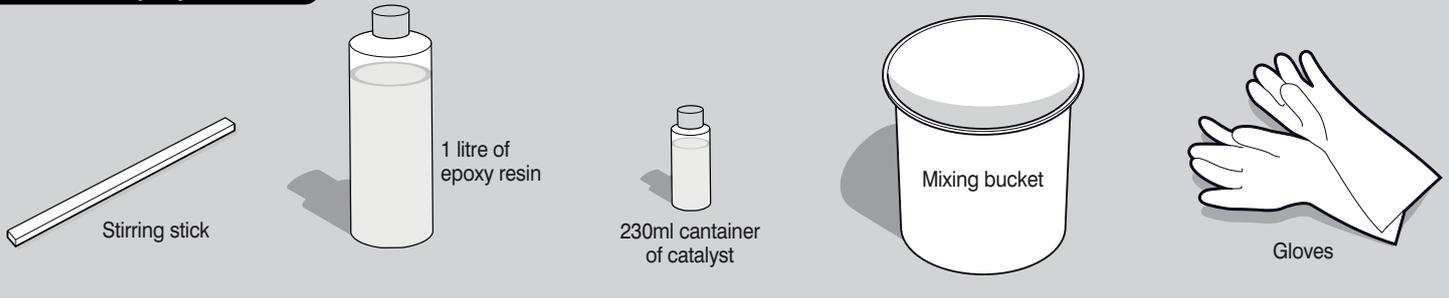
SPECIAL NOTE: Fibreglassing the Tank Collar Joint: Fibrelite recommends fibreglassing the outside of the tank collar joint with 3 layers of glass as an added precaution against water intrusion (especially in high water areas).

INSTALLATION INSTRUCTIONS

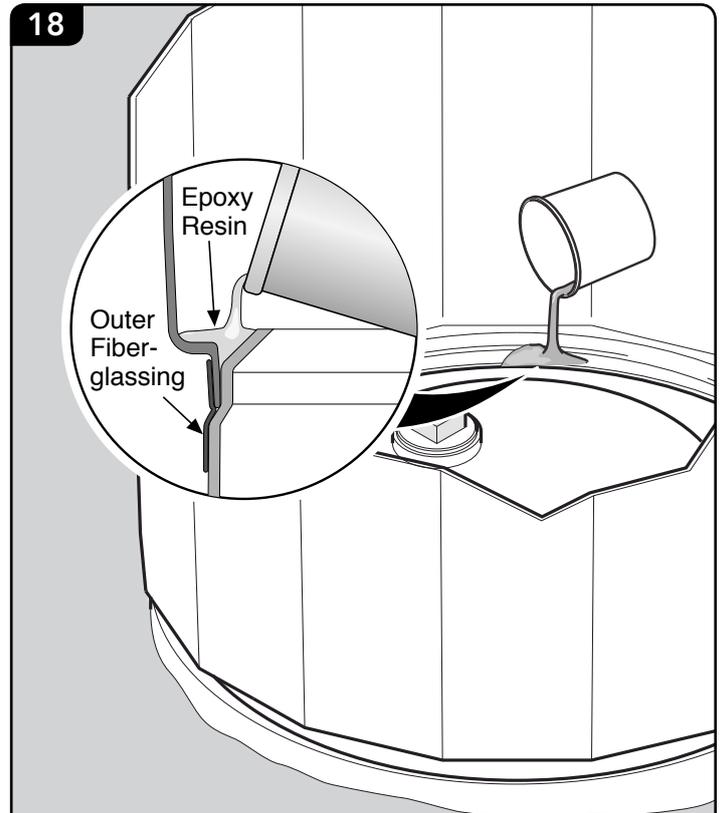
(Sealing the Inner Tank Collar Joint)

In **addition** to fibreglassing the outside tank collar joint, the inner tank collar joint should be filled with an epoxy resin to ensure that the joint will be watertight. Use Fibrelite part # S-CR-ERK Epoxy Resin Kit and follow detailed instructions packed with kit.

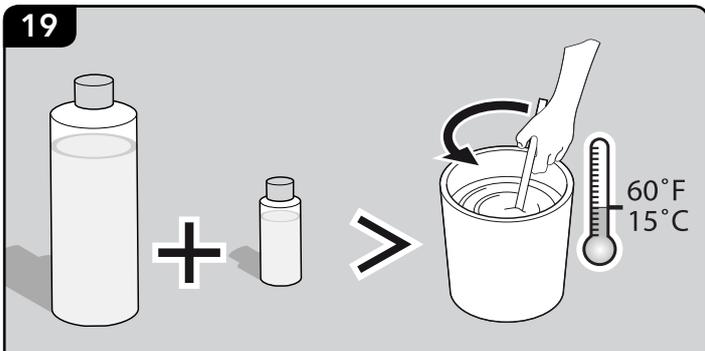
S-CR-ERK Epoxy Resin Kit



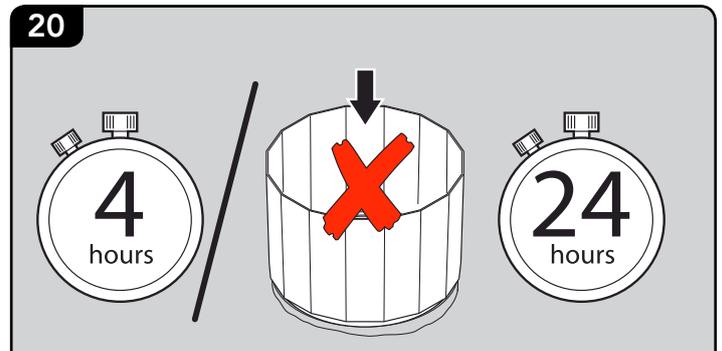
Prepare the inner tank collar joint and tank sump mating surfaces by sanding or grinding – surfaces previously sanded should be cleaned with acetone.



Apply epoxy resin filler by pouring the epoxy into the joint between the tank collar and the tank sump.



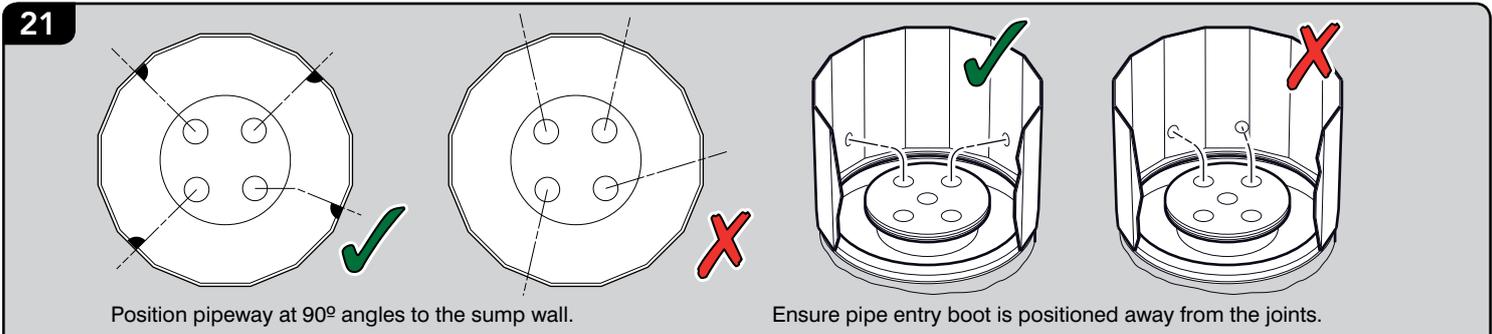
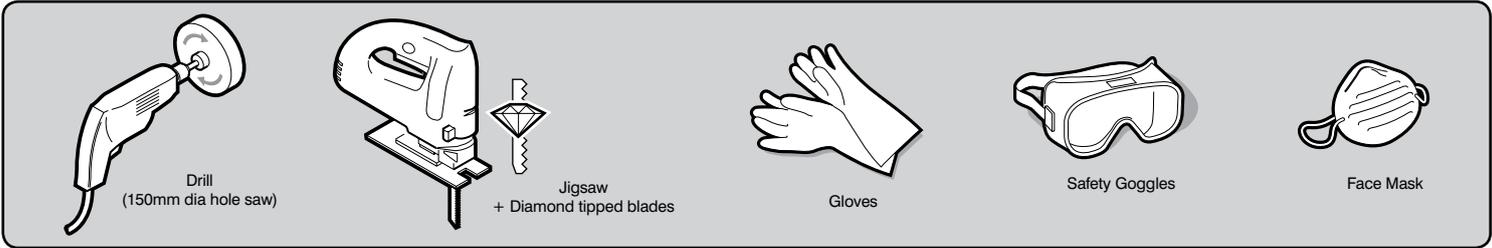
Prepare epoxy resin by mixing 1 litre of epoxy resin and 230 ml catalyst in mixing bucket. Keep material above 15°C until immediately prior to use.



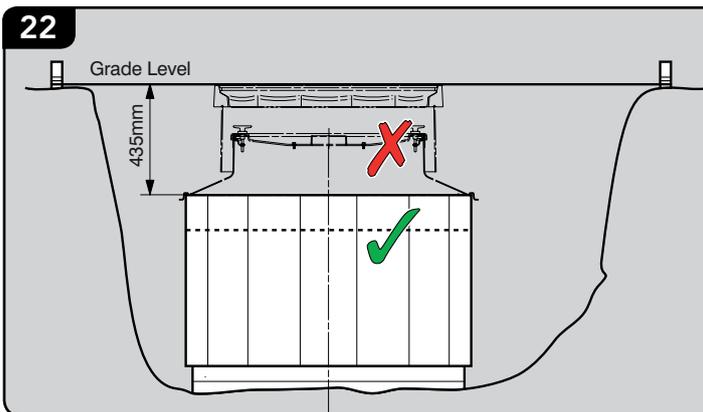
Allow approximately 4 hours for the resin to cure before proceeding with any other work on the tank sump. Allow 24 hours before putting any stress on the sump.

INSTALLATION INSTRUCTIONS

(Installing Penetration Fittings)

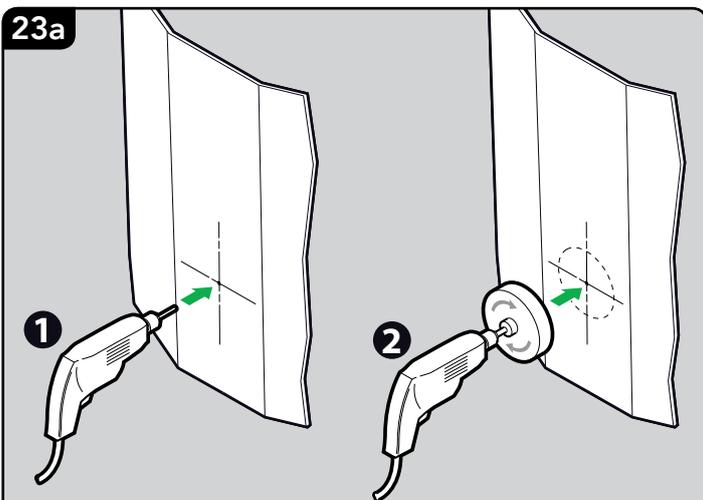


WARNING Care must be taken to position the pipework and conduit so it exits the sump at 90° angle to the sump wall, otherwise undue stress will be placed on the sump wall and entry boot, which may lead to leaks in the future.

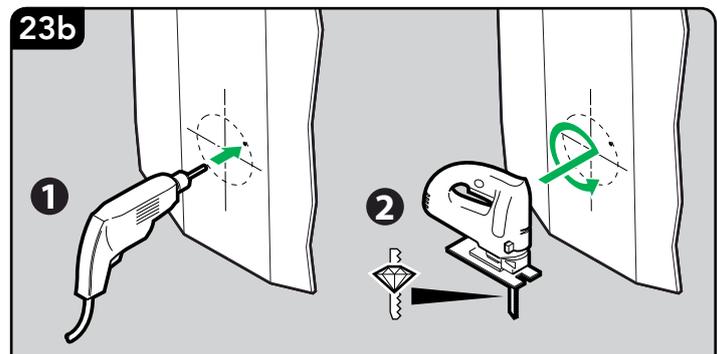


Prior to installing pipework, install a string line at grade level and determine if the sump base will first need to be trimmed.

All height adjustments must be made to the sump base and not to the corbel. To allow sufficient clearance for the corbel and platform under the manhole cover, the top of the sump base must be at least 435mm below grade.



Mark a centre point in the centre of a sump panel. Drill a pilot hole to ensure the hole saw can be positioned and used safely.



For larger holes (190mm) we recommend that the hole is marked and jigsaw is used to cut the hole. Drill a hole through the wall, so the jigsaw can be inserted and used easily and safely.

(Fibreglass will blunt normal blades very quickly, we recommend diamond tipped blades or blades to cut ceramics).

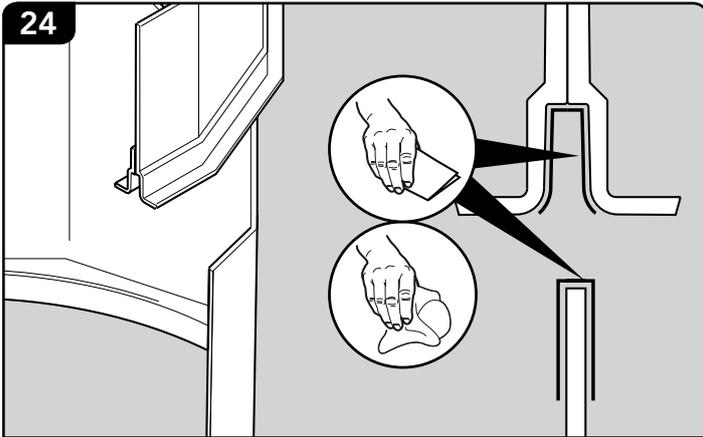
NOTE : When backfilling ensure the pipework is not disturbed.
WARNING : Do not backfill until the sump has been vacuum tested.

INSTALLATION INSTRUCTIONS

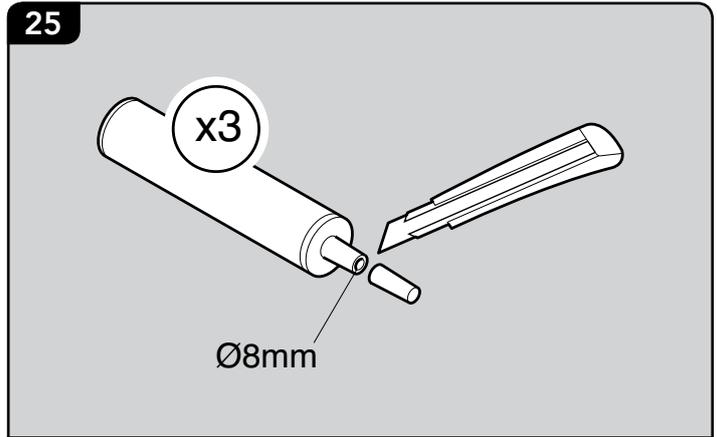
(Bonding the Extension / Chamber)

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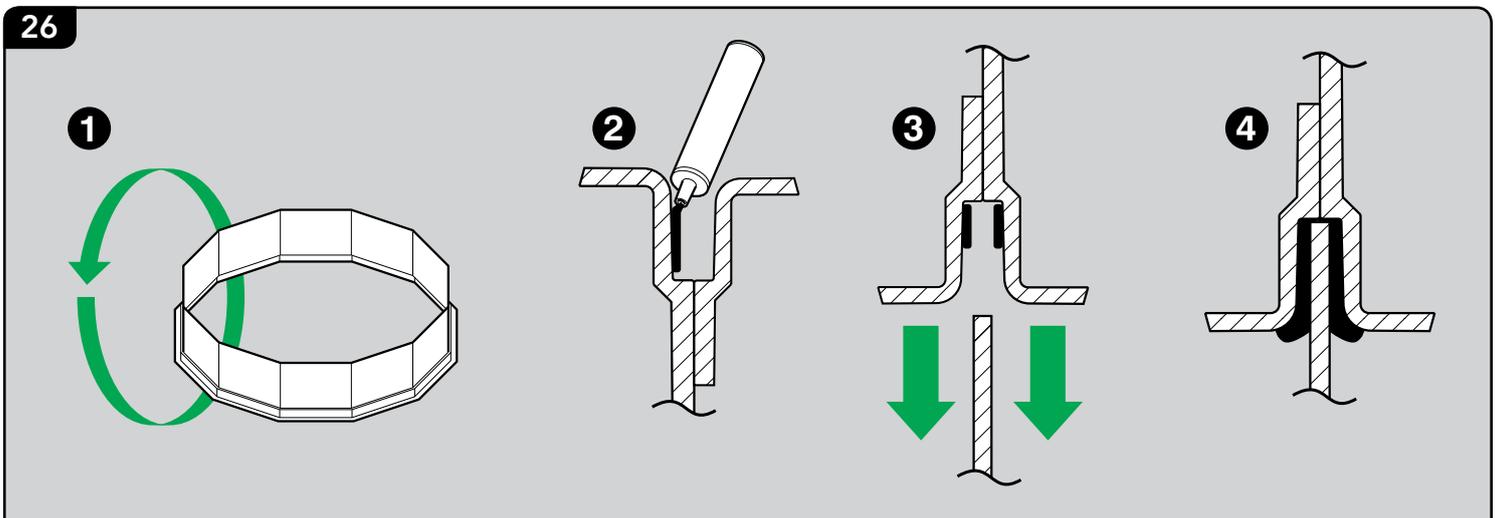
PART OF OPW A DOVER COMPANY



Abrade and wipe with a degreasing solvent, the sump top edge / wall and the extension recess shoulder.

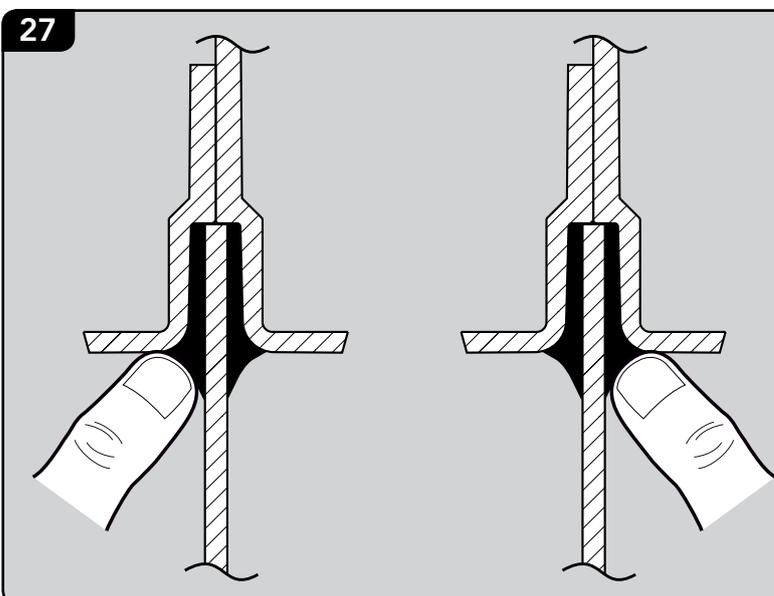


Cut nozzle of the adhesive sealant tube to approx. Ø8mm.



To permanently fix the extension, invert the extension and apply a bead of adhesive sealant to the vertical wall of the extension recess.

Position the extension(s) onto the sump, ensure the extension is horizontal and press down uniformly.



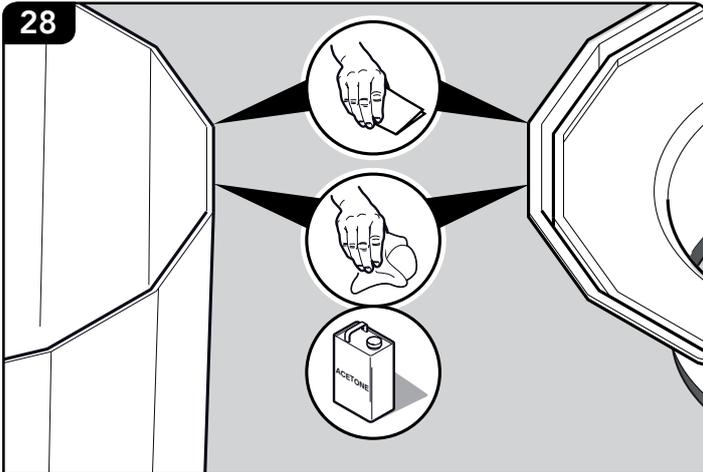
Apply a fillet of adhesive sealant (same nozzle size) to both the internal and external horizontal joint and smooth off.

INSTALLATION INSTRUCTIONS

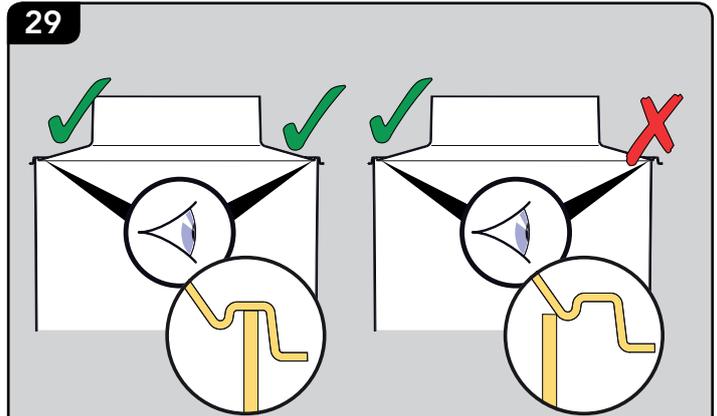
(Bonding the Corbel to the Sump Base or Extension)

FIBRELITE

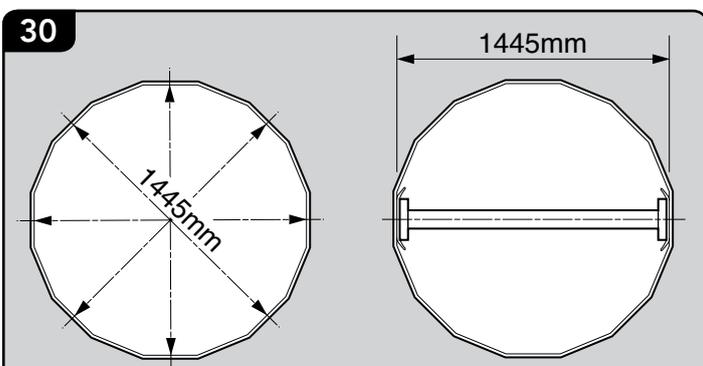
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Abrade and wipe with a degreasing solvent the sump or extension top edge/wall and the corbel groove.



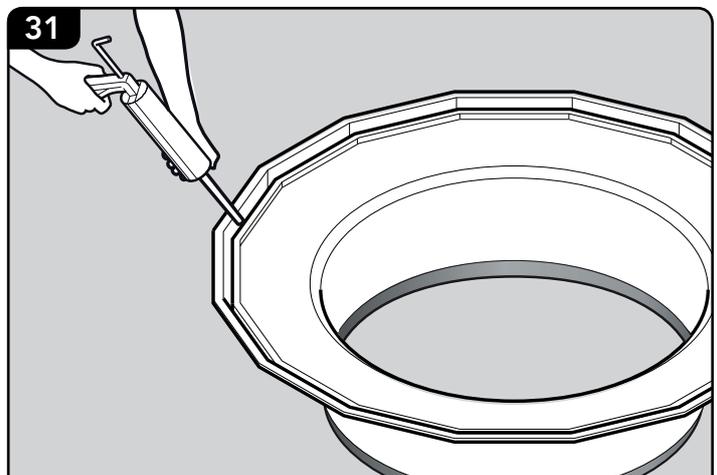
Dry fit the corbel on the sump to ensure it fits - push corbel groove onto sump wall. If it does not fit, pipework may have distorted the sump wall shape.



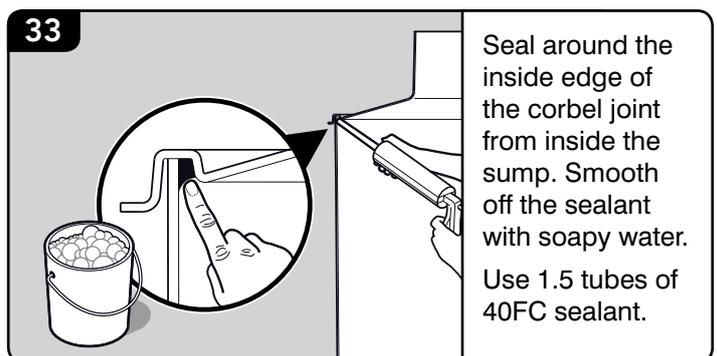
Measure distance between opposite walls, this should be 1445mm. If less than this you will need to brace out the sump.

Using wooden batons (1445mm \pm 5mm long) with timber spreader plates (150 x 150) to spread the load, brace out the sump to the correct size.

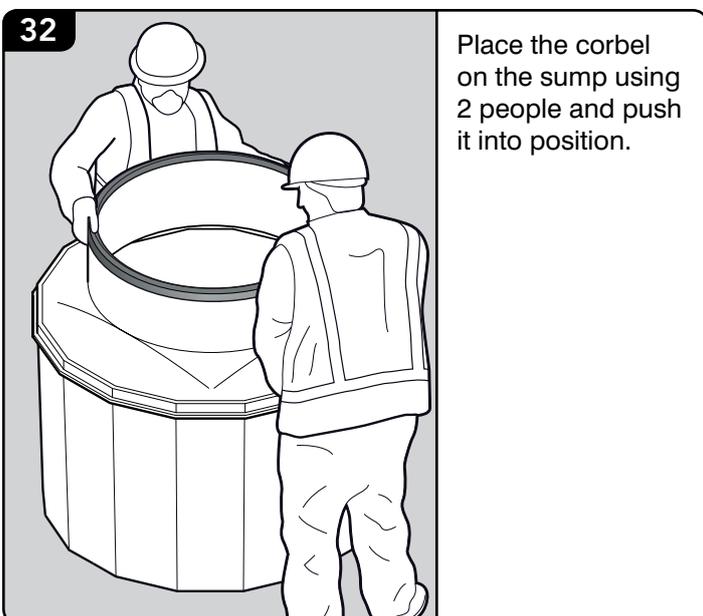
Repeat this process on all walls to get the correct shape.



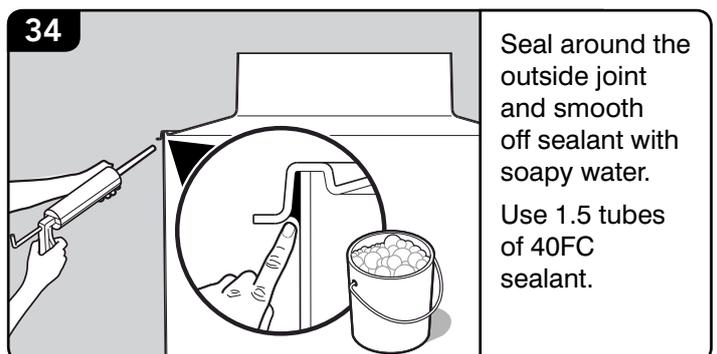
Apply 2 tubes of Soudaflex 40FC sealant in the groove of the corbel. Sealant should fill 1/2 the groove.



Seal around the inside edge of the corbel joint from inside the sump. Smooth off the sealant with soapy water. Use 1.5 tubes of 40FC sealant.



Place the corbel on the sump using 2 people and push it into position.

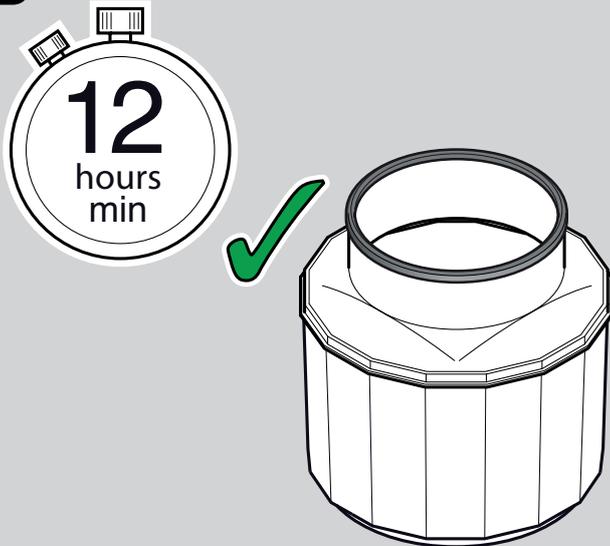


Seal around the outside joint and smooth off sealant with soapy water. Use 1.5 tubes of 40FC sealant.

INSTALLATION INSTRUCTIONS

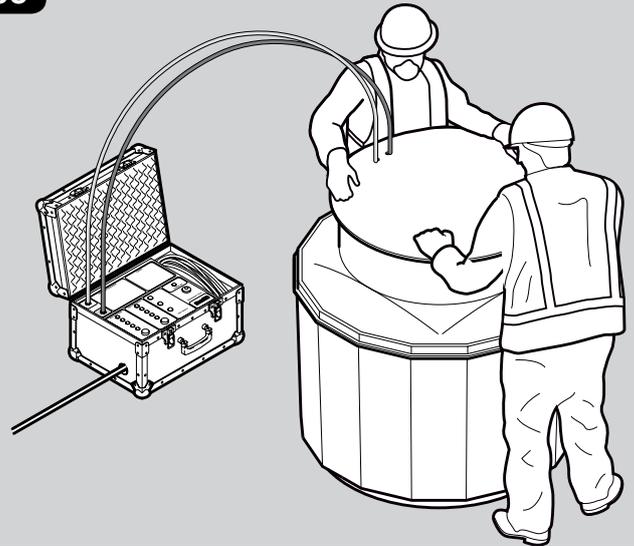
(Performing Hydrostatic or Vacuum Testing)

35



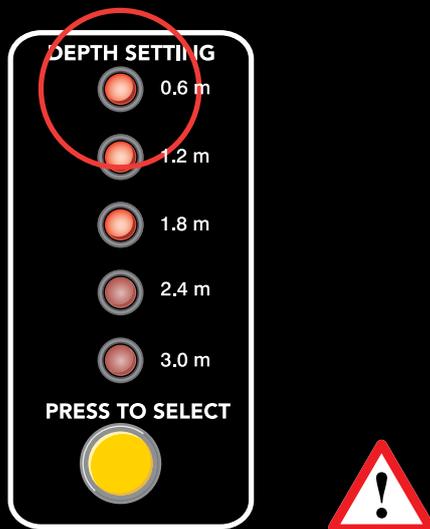
Wait a min of 12 hours before vac testing, preferably overnight to allow sealant to set before vacuum testing.
Do not disturb the sump during this time.

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Ensure all pipework and electrical entries have been completed before vacuum testing, this is a final test for all penetrations in the sump.

37



Warning: Test the corbel at a 0.6m depth setting only or irreparable damage may occur.

Refer to vacuum testing instructions for correct method.

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CRITICAL DIMENSION

All dimensions shown below are measured from a string line set at manhole grade level.

CRITICAL DIMENSION

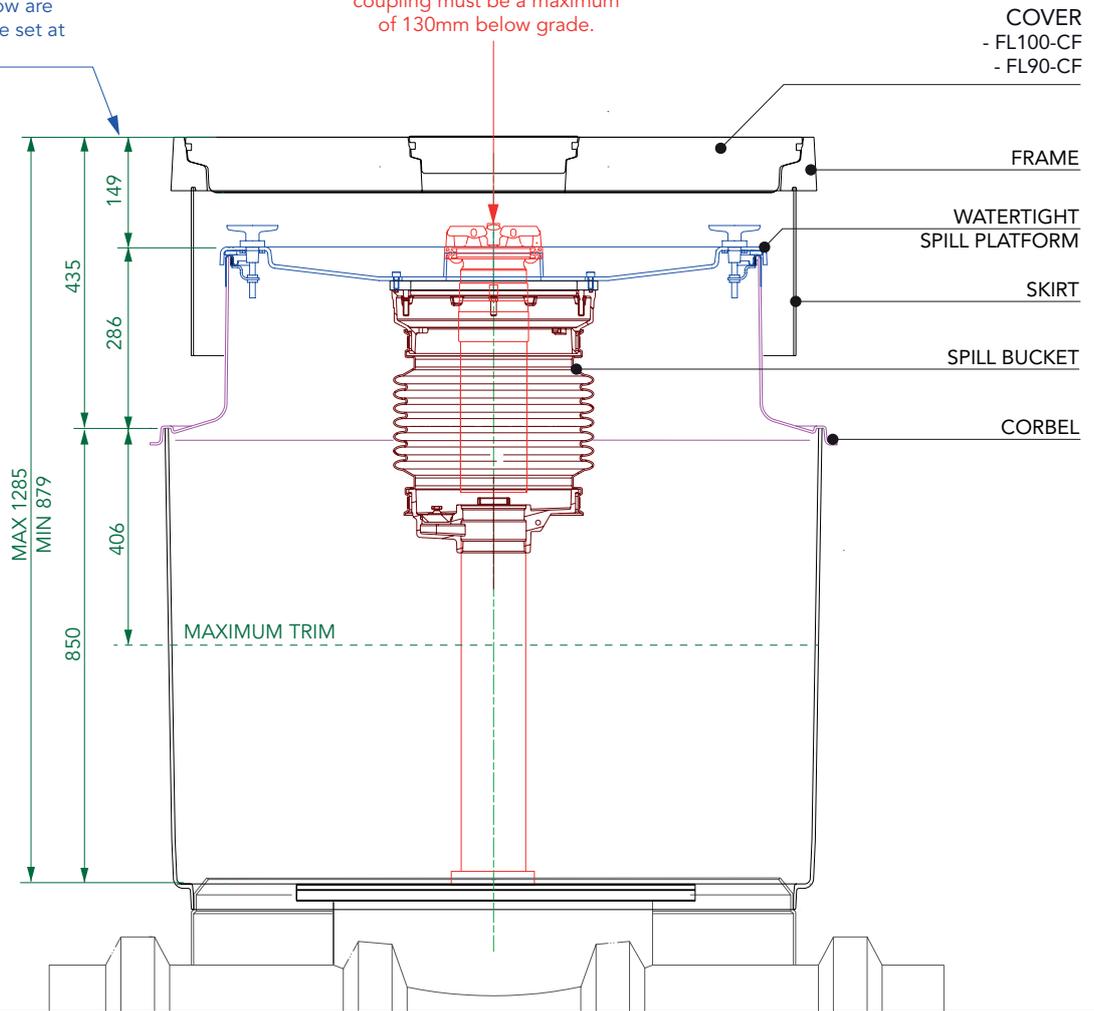
From grade level to top of platform must be 149mm

CRITICAL DIMENSION

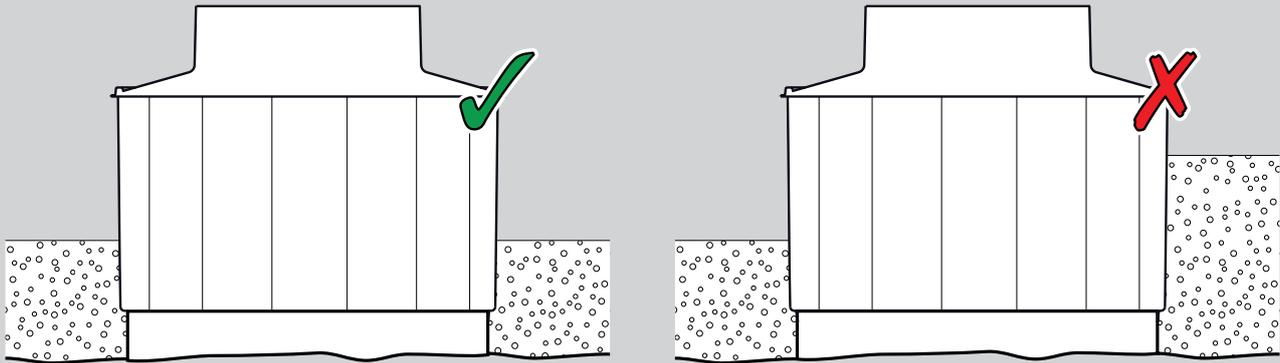
From grade level to top of sump riser must be 435mm.

Critical Dimension for Fill and Vapor Adaptors

Top of adaptor cap or dry break coupling must be a maximum of 130mm below grade.



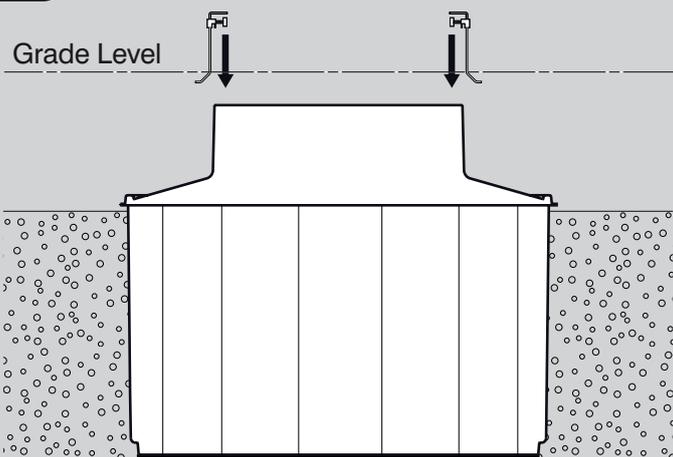
39



Once the corbel test has been performed with a PASS result, the area around the sump can be carefully backfilled with peagravel or sand. Backfill equally around the sump in layers to prevent damage or deformation.

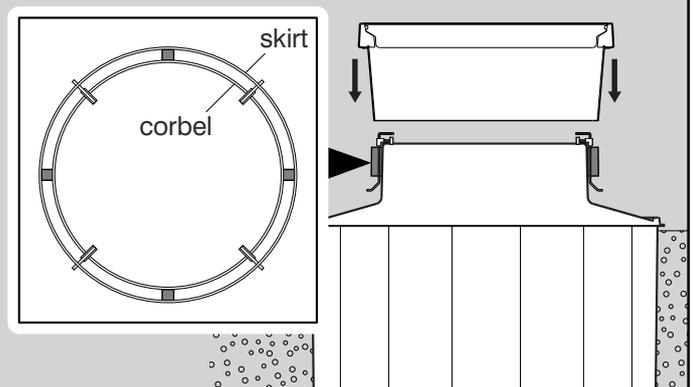
(Adjusting the Skirt & Frame to Grade Level)

40



Fix a string line 25mm above grade level across the sump, fix 4 hangers on the corbel top with base support facing out.

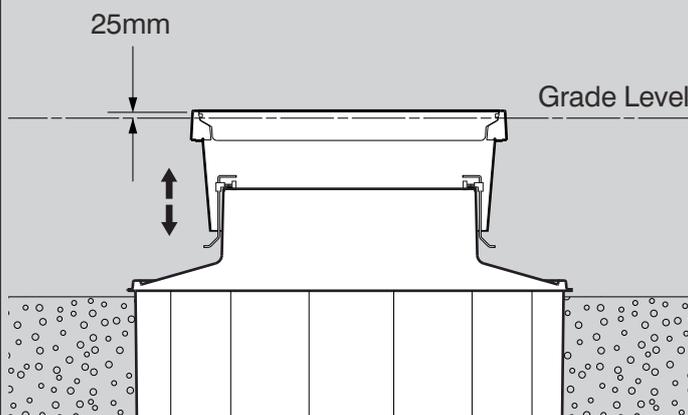
41



Put the skirt and frame on the hangers.

Locate the 4 foam blocks supplied between the skirt and corbel turret to centralise the skirt about the corbel. Failure to do this may result in the platform fouling.

42



Adjust knobs to set the frame to stringline level, adjust for fall in grade. Set the frame 25mm above grade level.

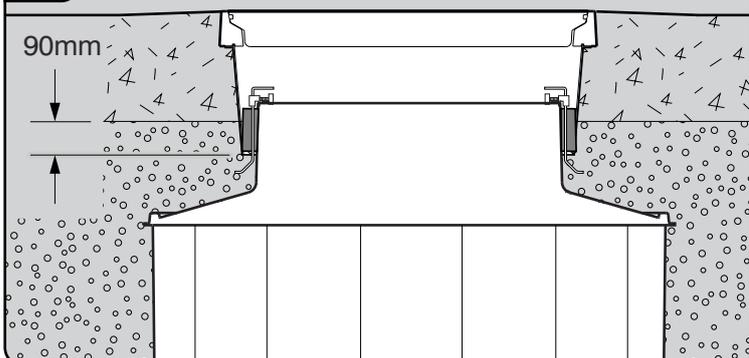
INSTALLATION INSTRUCTIONS

(Concreting)

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Ensure the void between corbel and skirt is kept free from concrete and a depth of 90mm overlap minimum is maintained (120mm on high water table installations).

Ensure foam spacers are in position to locate the skirt centrally around the corbel.

44



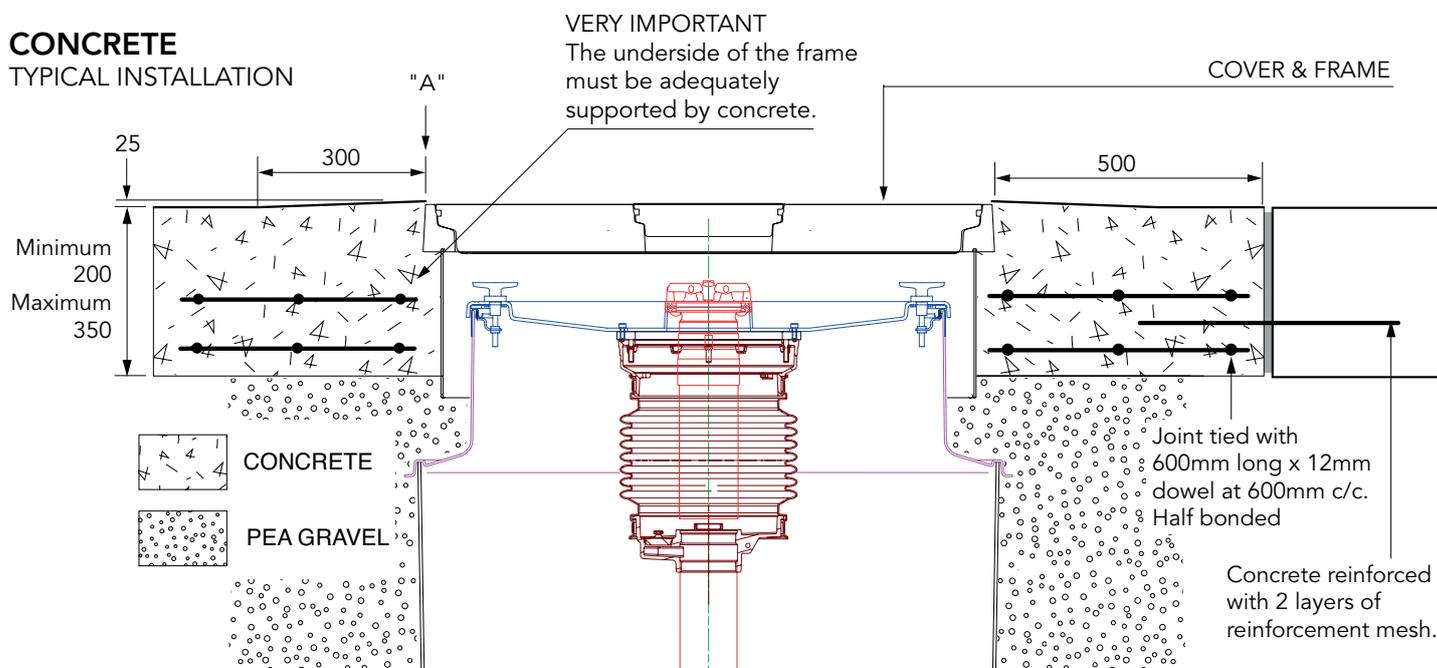
VERY IMPORTANT

To allow for drainage, Fibrelite recommends that the concrete be sloped away from the top outer edge of the frame (A) a minimum of 25mm over a 300mm distance. Do not expose the top outer edge of the frame (A) – the concrete pad must be flush with the top outer edge of the frame.



CONCRETE

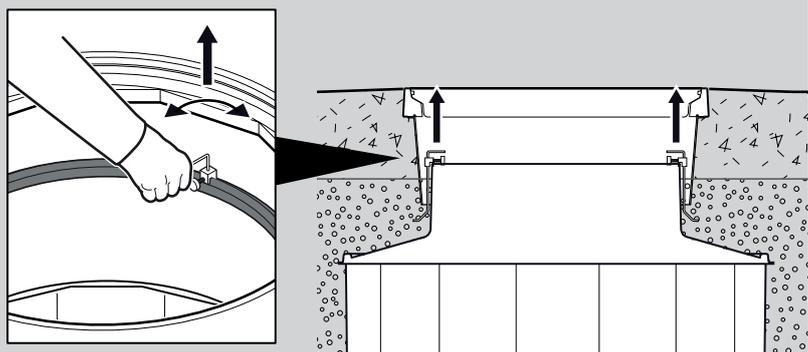
TYPICAL INSTALLATION



Complete backfilling to appropriate level. Frame must be supported by a minimum depth of 200mm of concrete

Concrete ties must be inserted as close to the frame as possible. Minimum block of 500mm square around the frame. Joint must be tied as per diagram. Continuous pour preferred if possible.

45



After minimum concrete cure time, hangers can be removed. Loosen the 'T' knob, push down on the rod, turn the rod through 90° and pull rod up to remove.

Complete other third party equipment installation inside the sump.

INSTALLATION INSTRUCTIONS

(Installation of Corbel / Skirt Sealant)

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Ensure void is free of concrete to a depth of 90mm (120mm on a high water table installation).

47

Abrade surface of corbel and skirt with sand paper.

Use acetone to clean surface of corbel and skirt. Ensure surfaces and channel are dry and free from dirt and grease.

48

Insert sand in the void to a depth of 50mm from the top of corbel. Compact the sand.

49

Application Temp: 5 to 45°C
(Do not apply below 4°C)

Pot Life: 45 min at 25°C

Tack Free (at 25°C): 2 1/2 hrs

Full Cure (at 25°C): 2 days

Using a suitable container stir the contents of Pack B and add the entire contents to Pack A to give a combined content of 4.5Ltrs. Ensure white sediment from can B is put into can A before mixing. Stir for a full 5 minutes using a slow speed electric drill (400 - 500 RPM) with a mixer paddle until a completely homogeneous mix is obtained. Take care to avoid including excess air. Mixing is made easier if the Pack B is added and mixed in two stages.

WARNING If white sediment is not added to mixture, or contents are not mixed thoroughly using an electric mixer - the sealant will not set and will need replacing

50

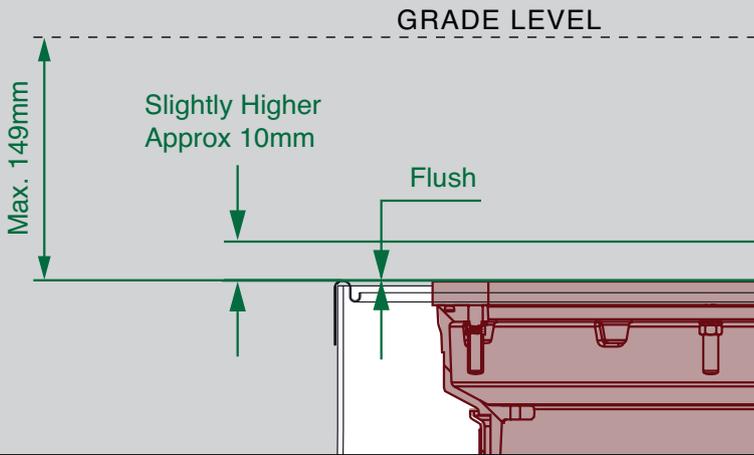
1 set of cans A+B will seal 2 sumps. Decant mixture from can A into can B to have more control when pouring the mixture into the void, onto the sand base. Avoid spilling the contents to ensure a clean finish on the side walls of corbel and skirt.

The sealant shall be poured to level 30mm below the top edge of the Corbel (the amount of sealant required is dependant on the height of the system but should be between 1.5 and 1.7 Litres).

51

Do not install the internal platform until the sealant has set. Allow approximately 12 hours.

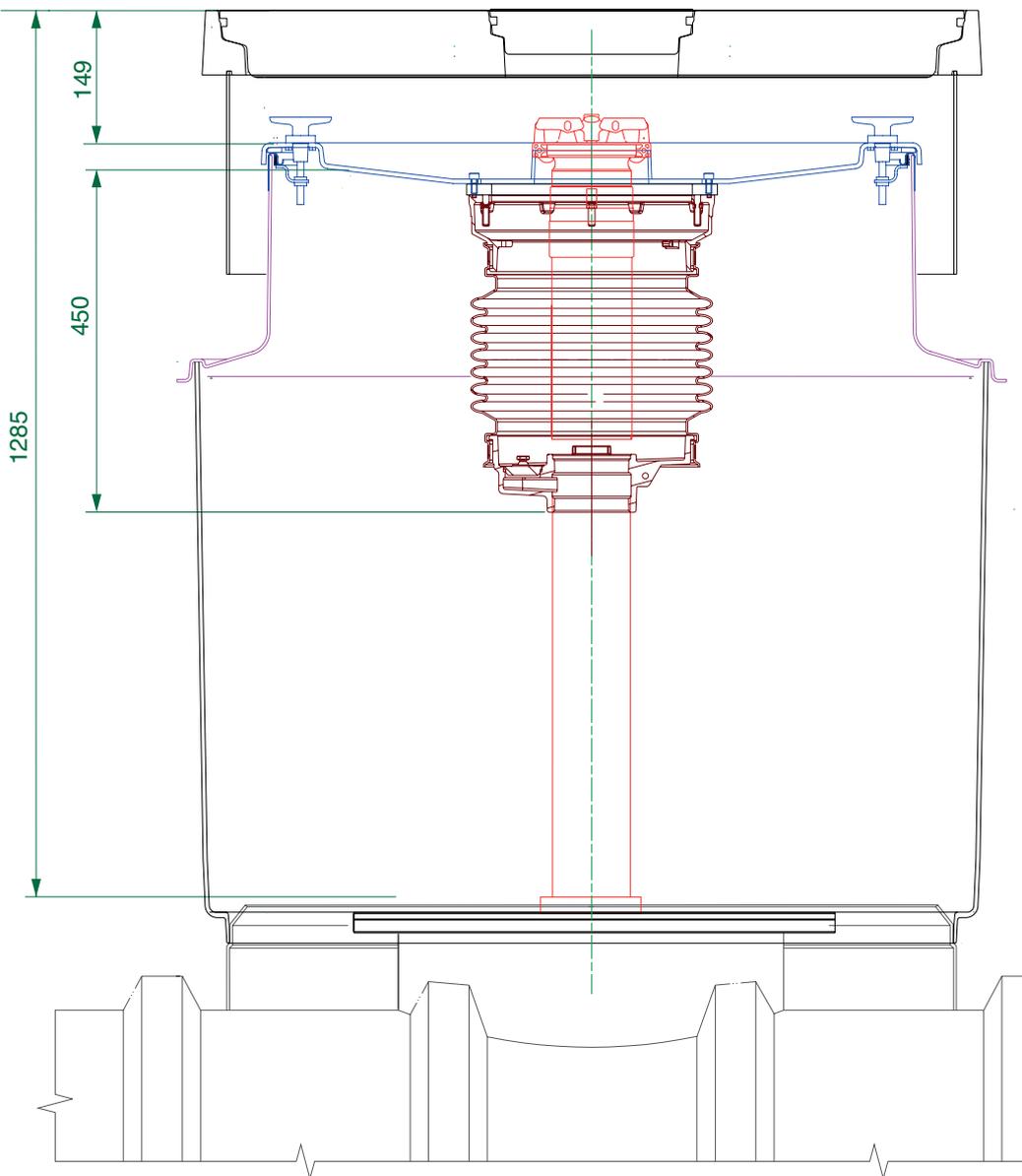
52



Installation of Riser and Spill Bucket: Once the tank sump and corbel with stainless steel ring has been installed so that there is a maximum 149mm clearance from grade to the top of the stainless steel ring, it will be necessary to install the fill or vapour riser.

Note: It is critical that the length of the risers be set so that the top of the spill bucket is flush with or just slightly higher (approx. 10mm) than the top of the stainless steel ring. If the spill bucket is set too high or too low, they will be difficult to connect to the underside of the watertight spill platform.

53



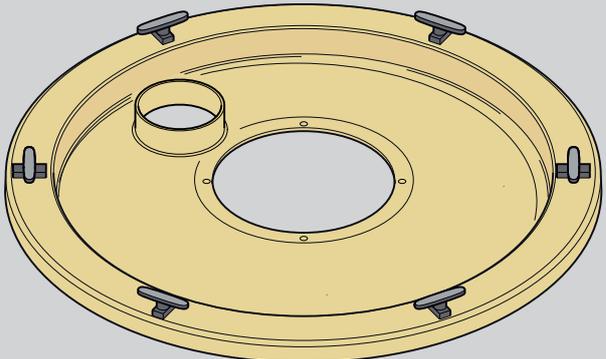
Determining Riser Length = Distance from Grade to the Manway/Bung – Spill Bucket Height – Distance from Grade to top of Spill Platform + 25mm + Thread Length

In the example shown left, the fill riser length will be $1285 - 450 - 149 + 25 = 711 + \text{Threads}$

Remember to add sufficient thread length on both ends.

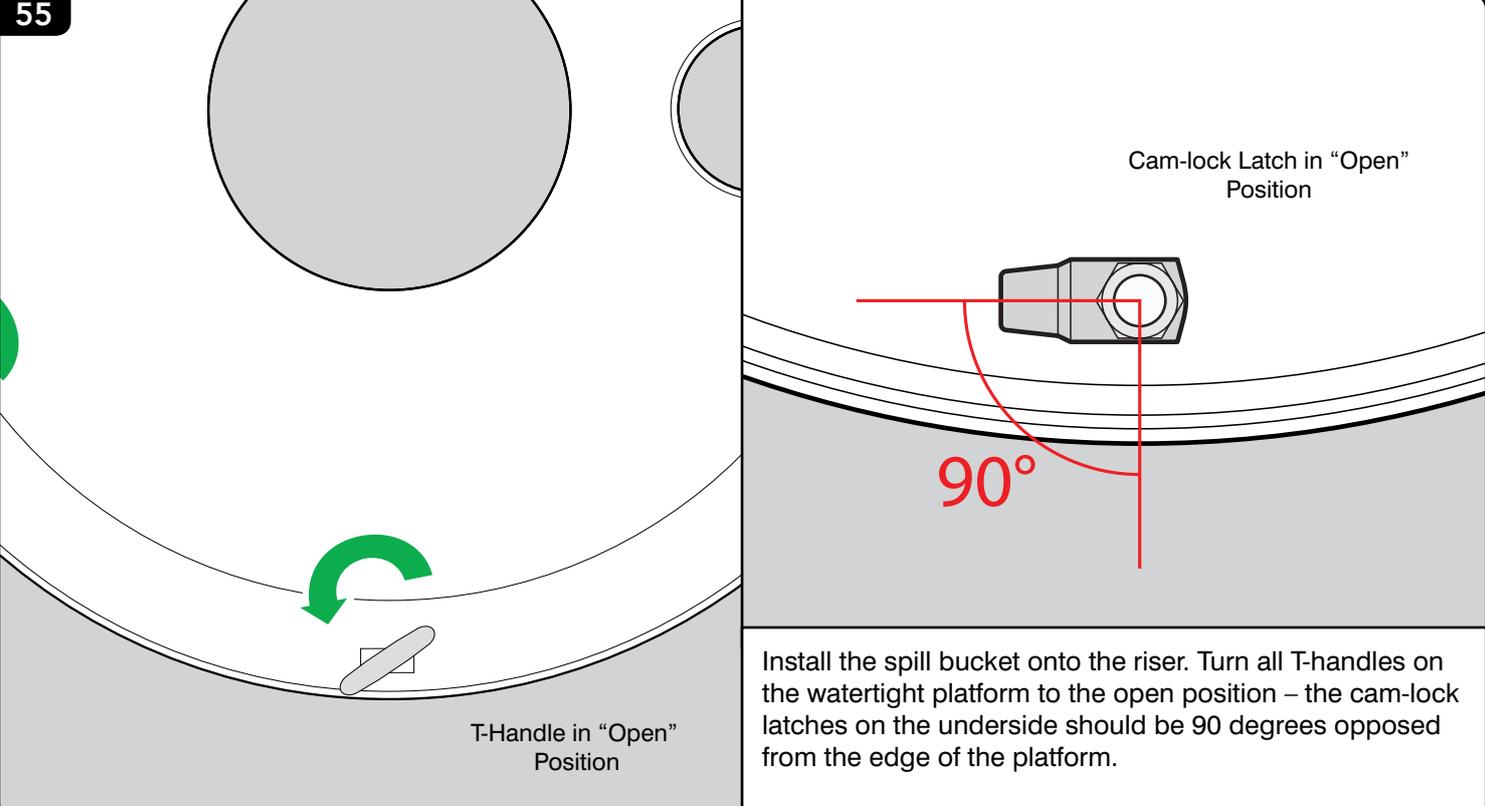
Once the riser is set at the correct length, the spill bucket can be threaded onto the riser. If the spill bucket is not flush with or just slightly higher than the stainless steel retaining ring, it will be necessary to adjust the riser.

54



Once the fill or vapour riser are properly installed and the spill bucket have been threaded onto the riser, the watertight spill platform should be installed to ensure that the bucket fits properly.

55



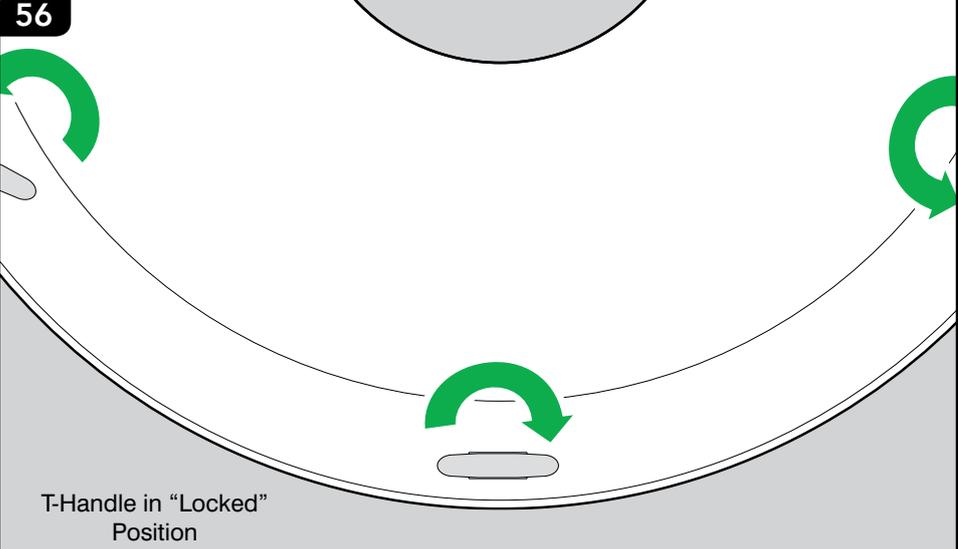
Cam-lock Latch in "Open" Position

T-Handle in "Open" Position

90°

Install the spill bucket onto the riser. Turn all T-handles on the watertight platform to the open position – the cam-lock latches on the underside should be 90 degrees opposed from the edge of the platform.

56



T-Handle in "Locked" Position

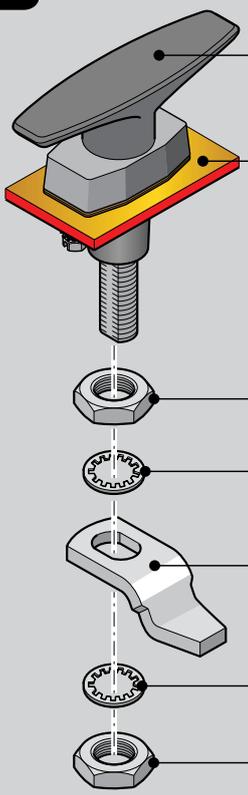
Seat the watertight spill platform on the stainless steel ring so that the spill bucket sits immediately below the spill bucket opening. Press down on the platform, if the bucket is slightly higher than the stainless steel locking ring. Locate the 6" diameter inspection port as required. Turn the T-handles 90 degrees to lock the latch beneath the stainless steel ring.

If the T-handle fails to engage it may be necessary to adjust the 'cam-lock' height. See next page for adjustment instructions.

INSTALLATION INSTRUCTIONS

(Adjusting the Cam-lock Height)

57



T-HANDLE

WATERTIGHT LID

FIXING NUT

LARGE LOCKING WASHER

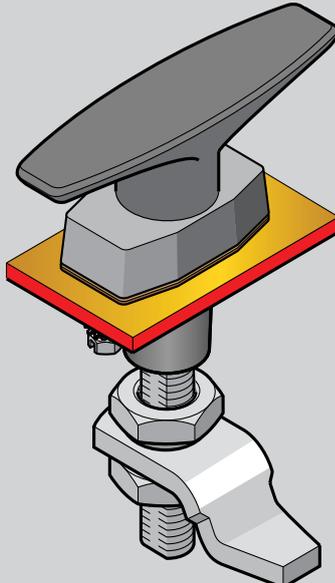
CAM-LOCK

LARGE LOCKING WASHER

BASE NUT

The T-handle mechanism consists of the above items.

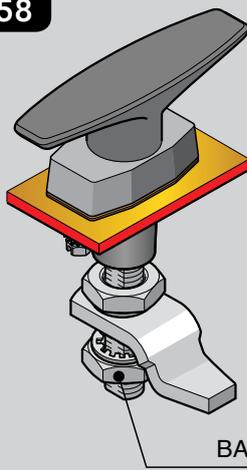
60



Once the cam-lock is secure refit the watertight spill platform as per the steps on the previous page.

Note: It may be necessary to further adjust the cam-lock height until the optimal position is located.

58

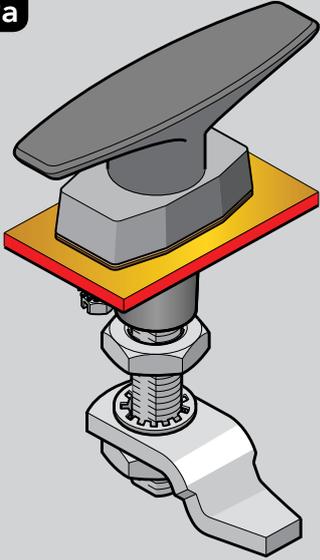


BASE NUT

If the T-handle is not fully engaging it means the cam-lock needs to be lowered. Loosen the base nut to a lower position and go to step 59a.

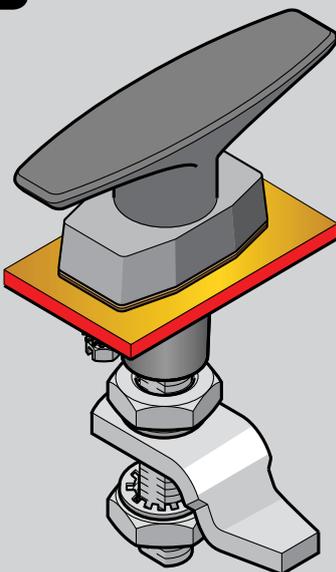
If the platform is not compressing the gasket tightly against the stainless steel ring it means the cam-lock needs to be raised. Loosen the base nut and go to step 59b.

59a



Pull the cam-lock down to rest onto the base nut. Lower and tighten the fixing nut until the cam-lock is secure as per step 60.

59b

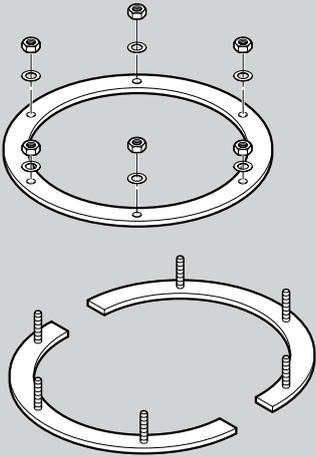


Pull the cam-lock down to rest onto the base nut and raise the fixing nut. Push the cam-lock up to the fixing nut and tighten the base nut until the cam-lock is secure as per step 60.

INSTALLATION INSTRUCTIONS

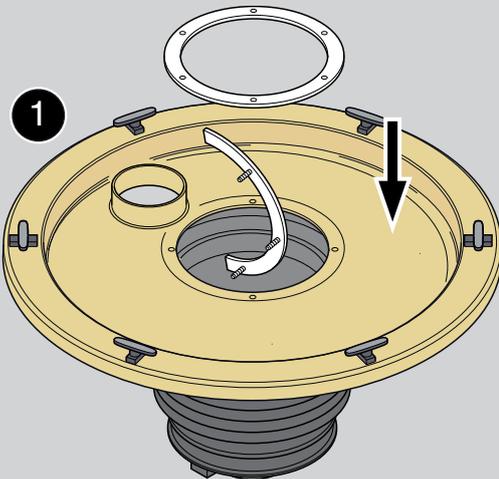
(Connecting Spill Buckets to Watertight Spill Platform)

61



Once the spill bucket has been installed onto the riser and the watertight spill platform is centred over the spill bucket, use the clamping ring assembly to connect the spill platform to the spill bucket. Each clamping ring assembly consists of (1) clamping ring and (2) "half moon" lower clamps.

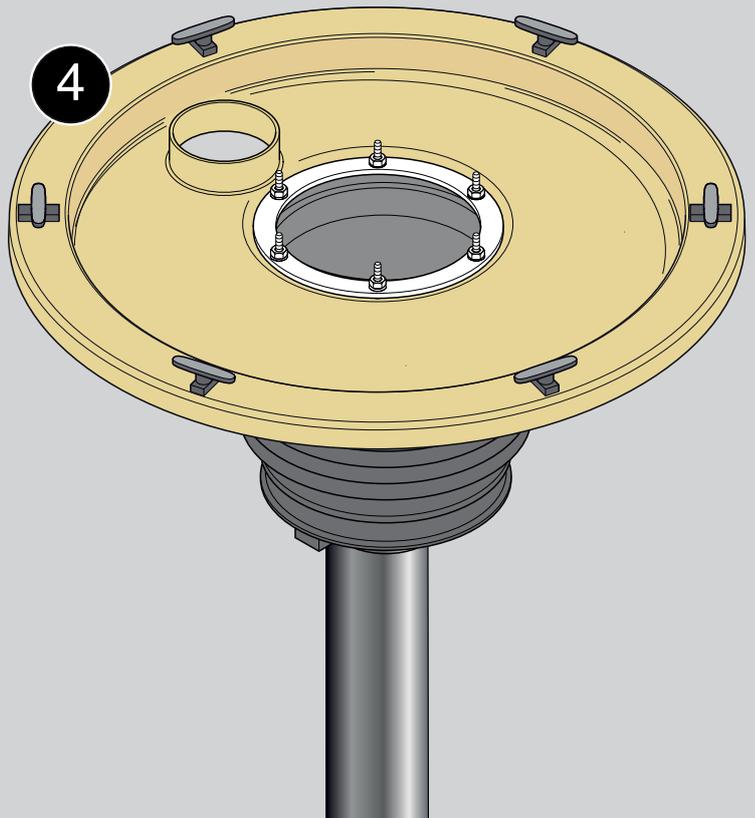
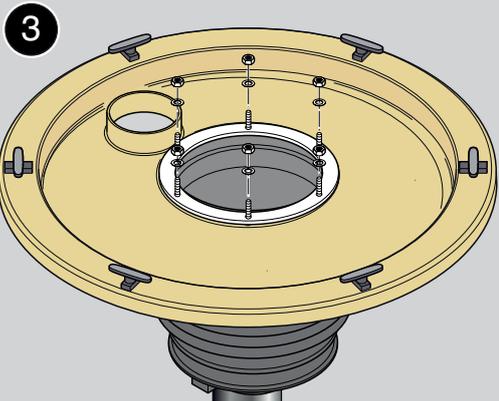
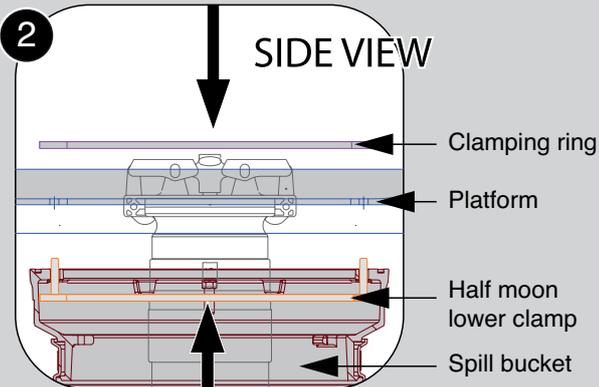
62



Install the clamping ring onto the lip of the spill platform opening into the spill bucket.

The half-moon lower clamps should be installed one at a time. Push the spill bucket so that the upper lip of the spill bucket is flush beneath the platform hole. Place the half-moon lower clamp under the lip of the spill bucket so that the bolts on the clamp pass through the holes on the clamping ring.

Tighten a nut onto each of the lower clamp bolts using the 1/4-20 nut and lock-washer provided. Each nut should be fully tightened so that the gasket under the platform is fully compressed and sealed between the top of the spill bucket and the underside of the platform.



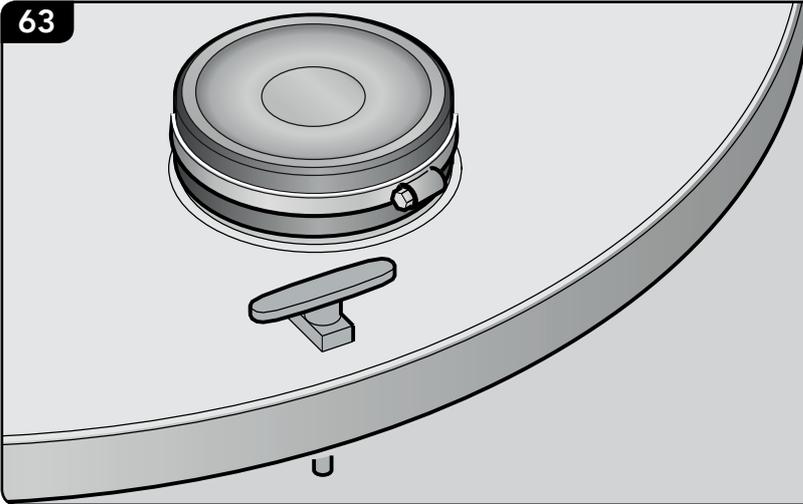
INSTALLATION INSTRUCTIONS

(Inspection Ports)

FIBRELITE

PART OF OPW A DOWDER COMPANY

63



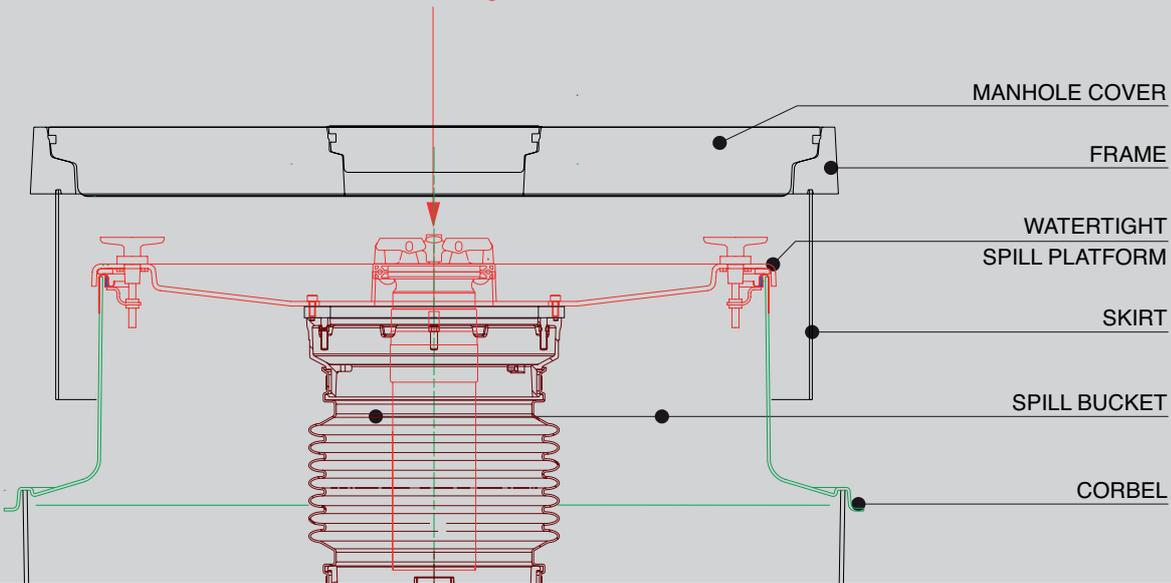
The standard watertight spill platform is equipped with a single 6" inspection port. After installing the clamping rings, ensure that the clamp is tight so that the inspection port fitting does not slip off. Tighten it with a screwdriver or 1/4" socket if required.

(Installing Swivel or Vapour Recover Adaptor)

64

Critical Dimension for Fill and Vapor Adaptor
Top of adaptor cap or dry break coupling must be a maximum of 130mm below grade.

The top of the swivel adaptor or dry break coupling should be positioned no more than 130mm below grade to allow for drivers to connect their nozzles.



(Fit the Cover)

65

