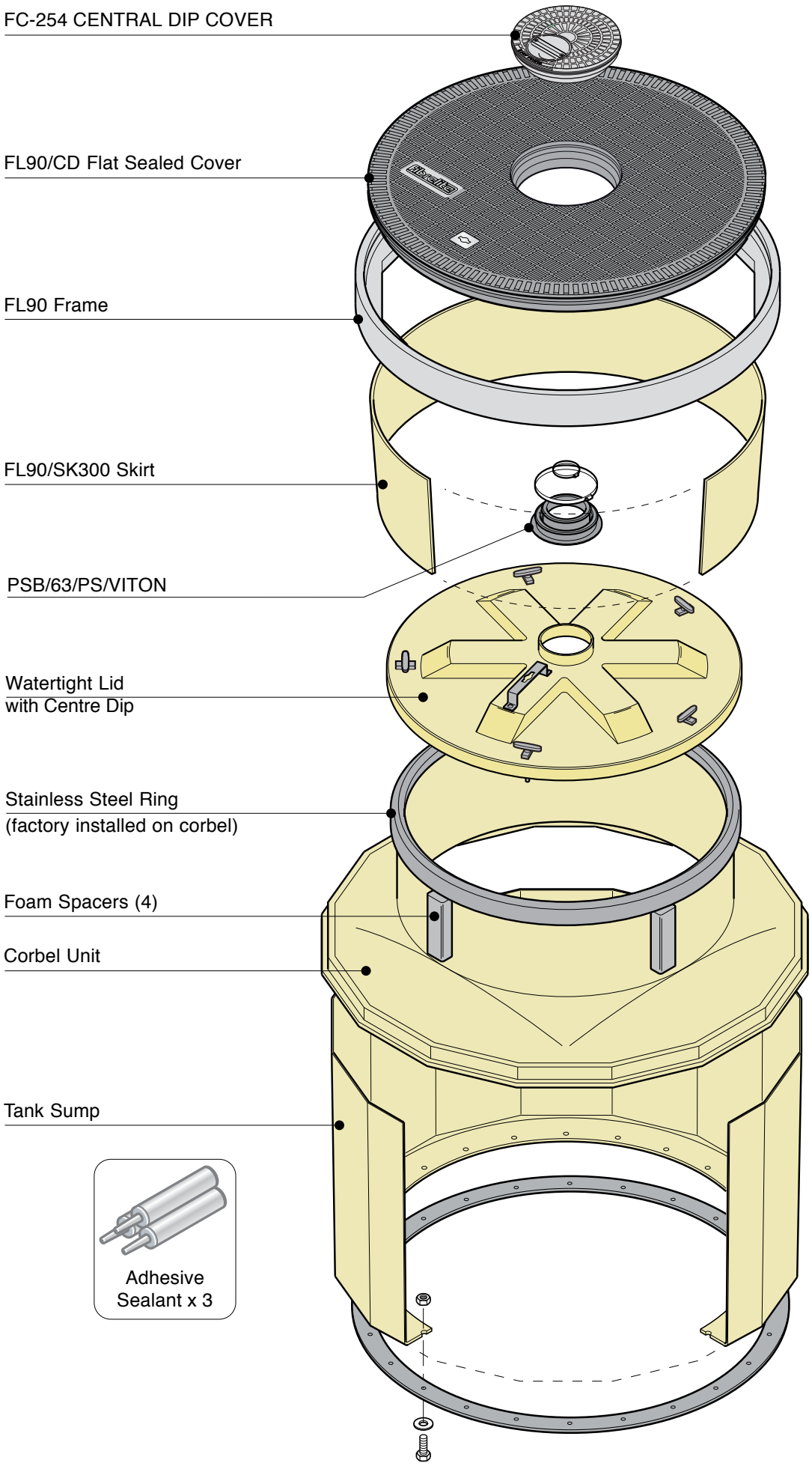


Issue: 12/06/2016

INSTALLATION INSTRUCTIONS
(Sump Installation)

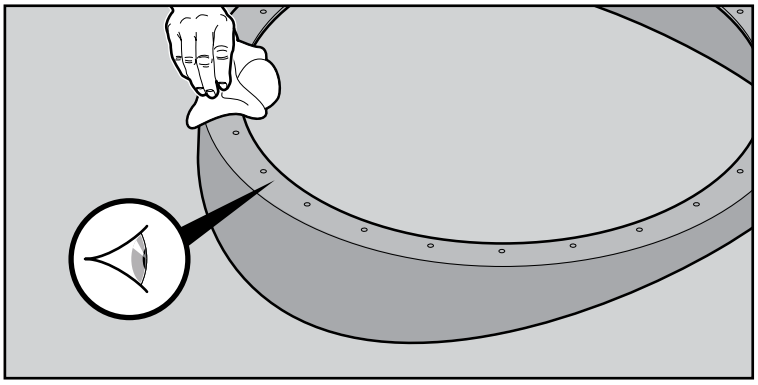
FIBRELITE
PART OF OPW A DOVER COMPANY

DO NOT STORE SUMPS ON THEIR SIDES PRIOR TO INSTALLATION

STOP Failure to follow this instruction may cause the sumps to deform and become “out of round.” Store sumps on either round end to prevent this from happening.

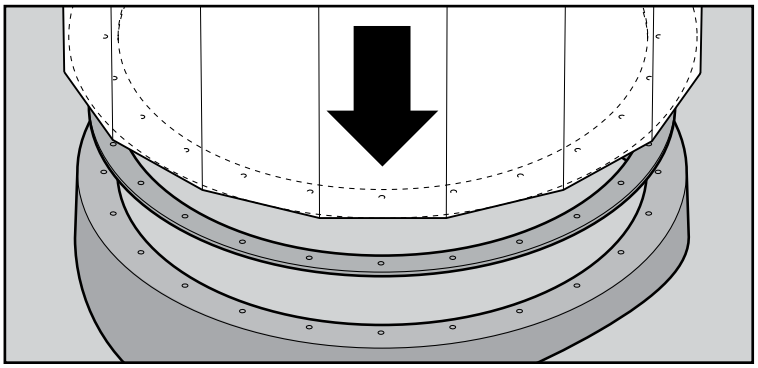
1

Clean the tank connection flange and ensure it is free of all grit etc. Check for flatness and deformation as this can cause the sump to become distorted or fail to seal. If in doubt contact our technical department +44 (0)1756 799 773.



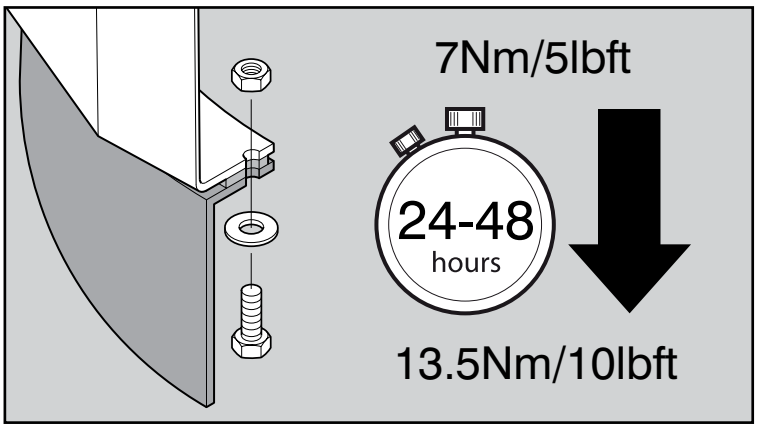
2

Remove protective cover from base of chamber and position chamber onto tank flange, aligning the holes. Ensure the seal on the base of chamber is not damaged and is free from grit etc.



3

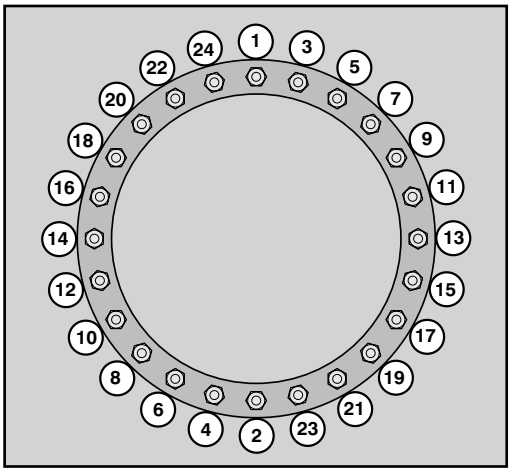
Fit a bolt and washer into each of the 24 holes (use only those supplied). Fit a washer and nut to each of the bolts. Tighten each bolt to 13.5Nm/10lbft torque, employing the following method, to avoid distortion of chamber.



4

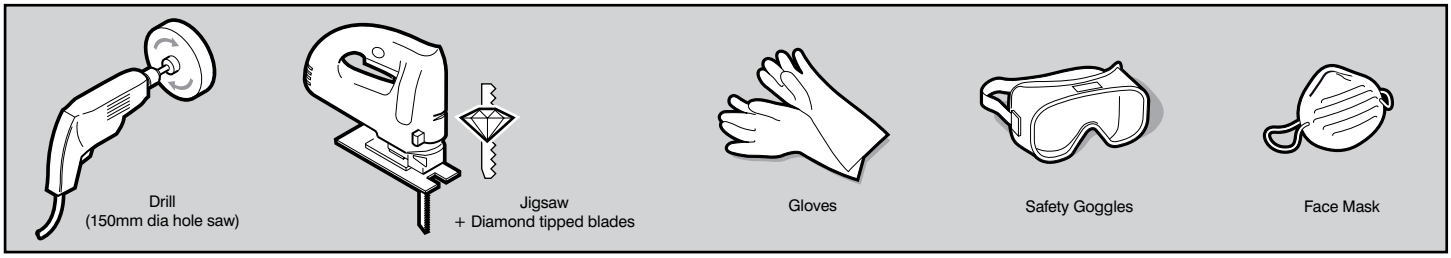
Starting with any bolt tighten to 7Nm/5lbfft torque. Move to the bolt positioned at 180° and tighten to 7Nm/5lbfttorque. Move 180° plus one bolt pitch and tighten to 7Nm/5lbfft of torque. Repeat until all bolts are tightened to 7Nm/5lbfft torque. Now repeat the procedure tightening all bolts to 13.5Nm/10lbfft torque.

Note: The seal will initially relax and it is an advantage if each bolt is tighten to 13.5Nm/10lbfft torque after a period of 24 to 48 hours after initial assembly.



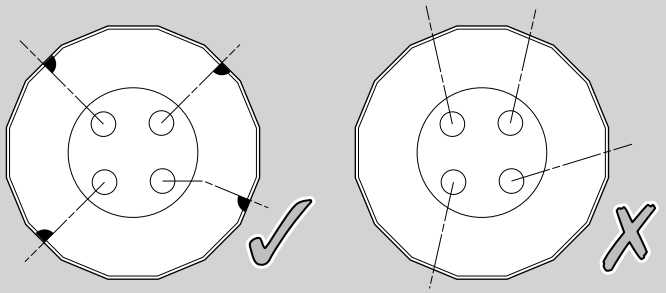
INSTALLATION INSTRUCTIONS
(Installing Penetration Fittings)

FIBRELITE
PART OF OPW A DOVER COMPANY

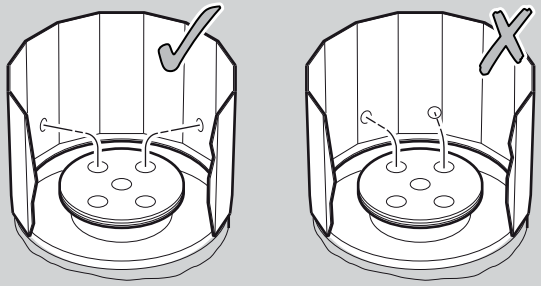


5

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.



Position pipeway at 90º angles to the sump wall.



Ensure pipe entry boot is positioned away from the joints.

6

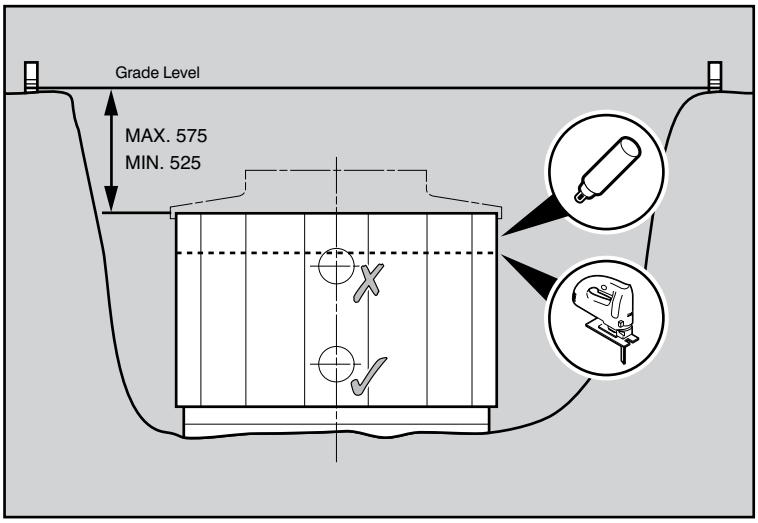
Before installing pipework, fix a string line at ground level across the Chamber to check if material needs to be cut off the Chamber. If so, mark the Chamber with a line along the cut mark.

Check to ensure you have the necessary minimum clearance required from the top of the Chamber to the centreline of the pipework/pipe entry kits.

Standard Entry Kit = 145mm
Large Entry Kit = 170mm

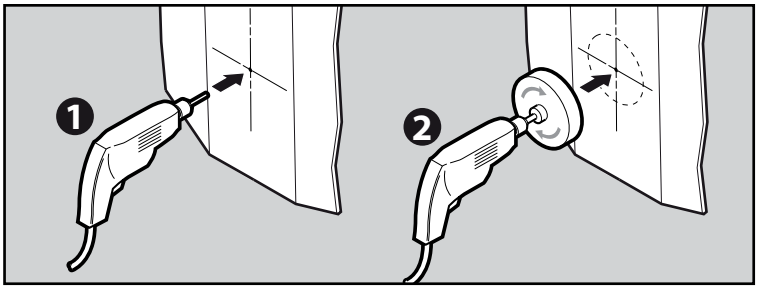
For shallow burials, it may be necessary to cut less material off the Chamber, and cut the remainder off the corbel and skirt to allow pipe entry boots to be fitted. **PLAN THIS CAREFULLY.**

Refer to measurement chart.



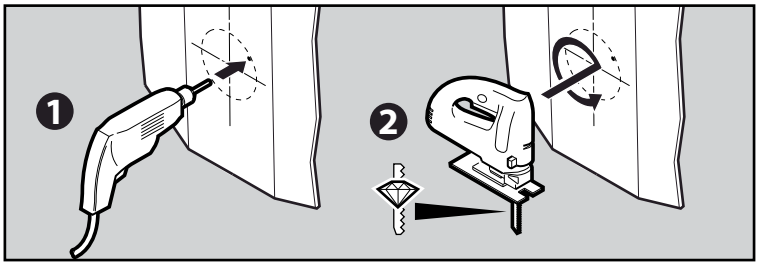
7

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



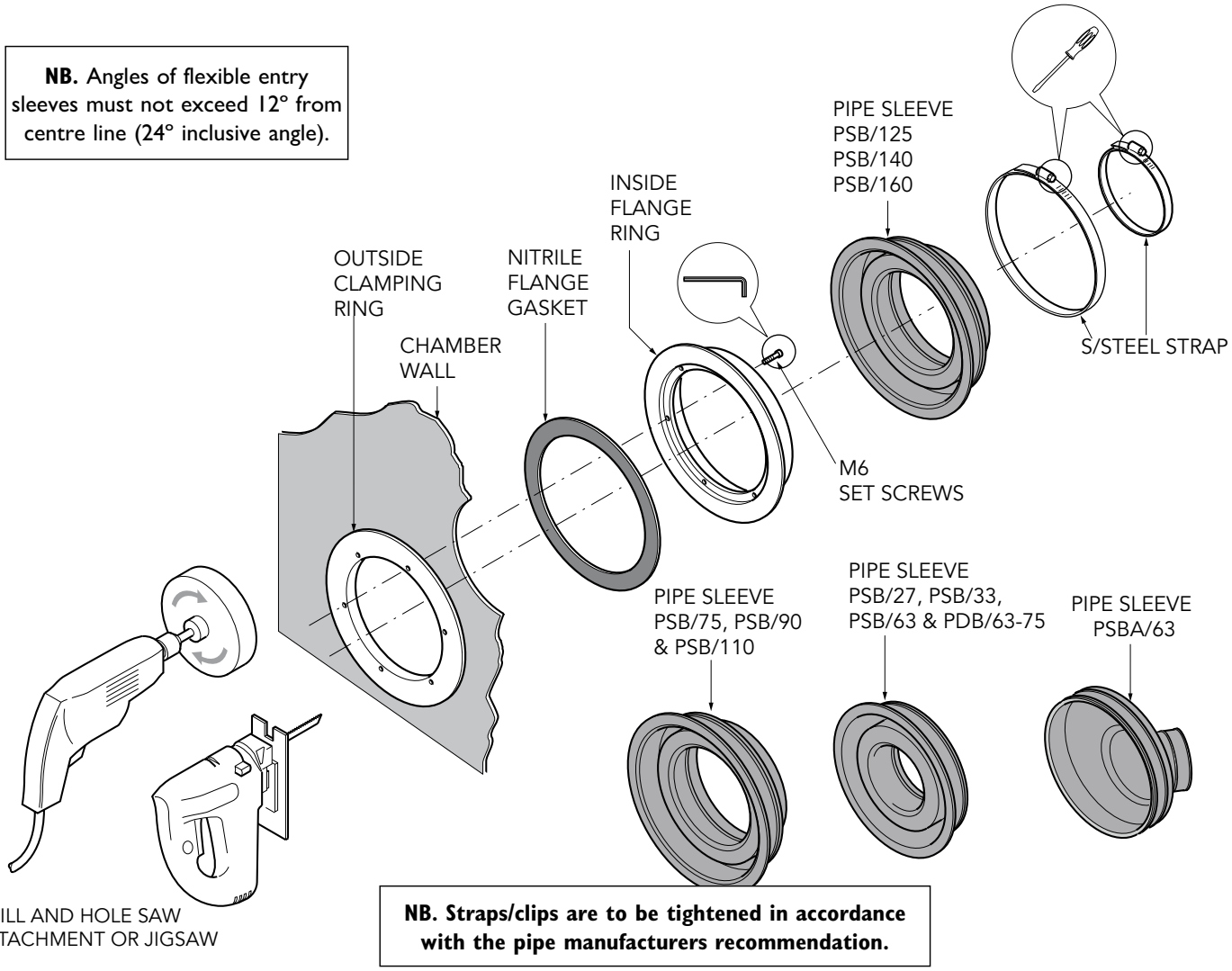
8

For holes larger than 150mm diameter, we recommend using a jigsaw to cut the hole. Drill a pilot hole prior to inserting the jigsaw blade. As fiberglass will blunt normal blades very quickly, always use a diamond tipped blade.

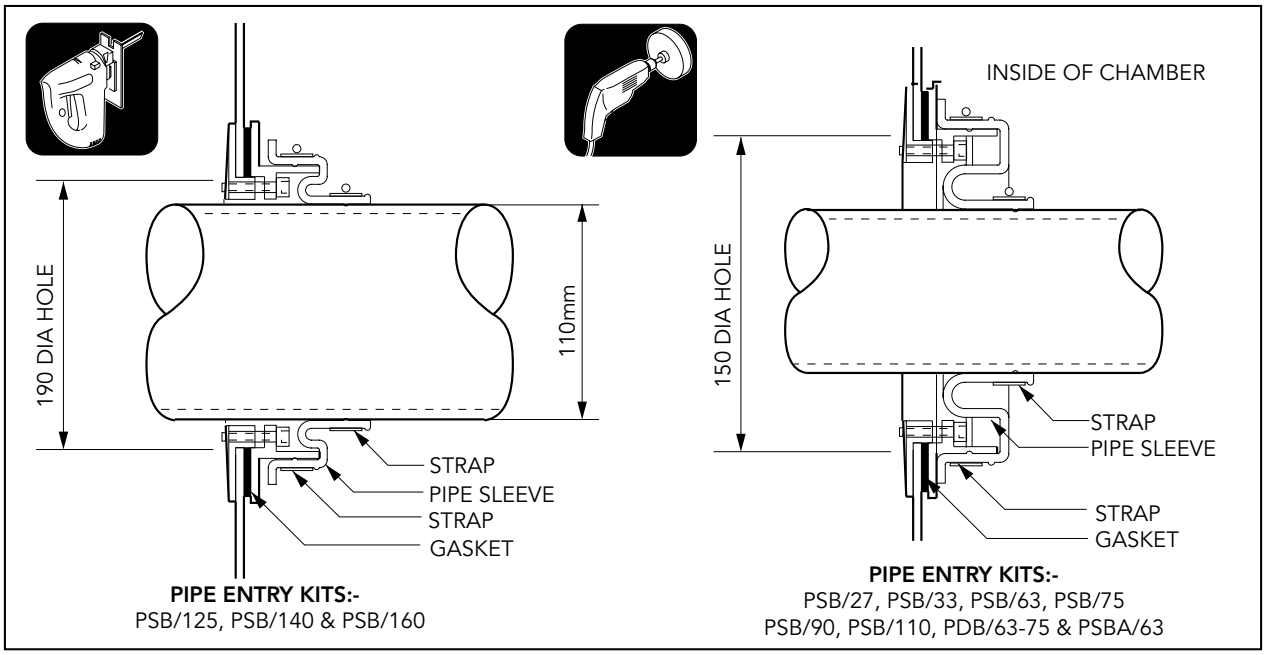


NOTE : When backfilling ensure the pipework is not disturbed.
WARNING : Do not backfill until the sump has been vacuum tested.

NB. Angles of flexible entry sleeves must not exceed 12° from centre line (24° inclusive angle).



NB. Straps/clips are to be tightened in accordance with the pipe manufacturers recommendation.



PIPE ENTRY KITS:-
PSB/125, PSB/140 & PSB/160

PIPE ENTRY KITS:-
PSB/27, PSB/33, PSB/63, PSB/75
PSB/90, PSB/110, PDB/63-75 & PSBA/63

NB. Where appropiate, it is recommended that a drill piloted hole saw be used to cut the pipe/cable seal entry hole in the chamber.
The exit position of the pipework through the chamber wall must be as close as possible to 90°. The pipe kit should be fitted so that the pipework is centrally positioned to the seal. When backfilling ensure that the pipework is not disturbed from this central position.

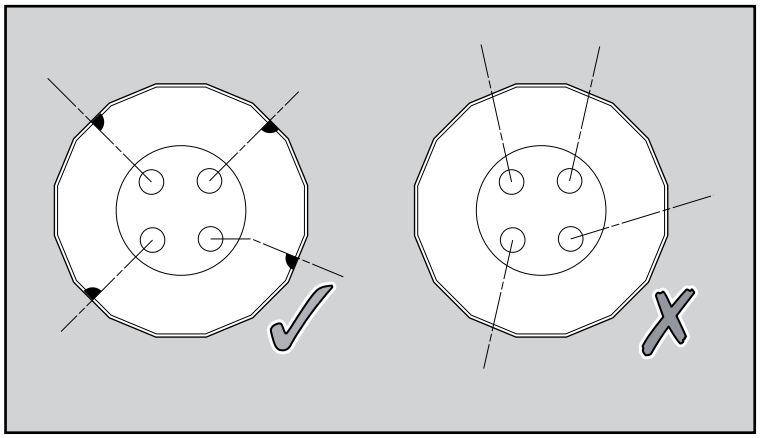
9 **PEC KITS**

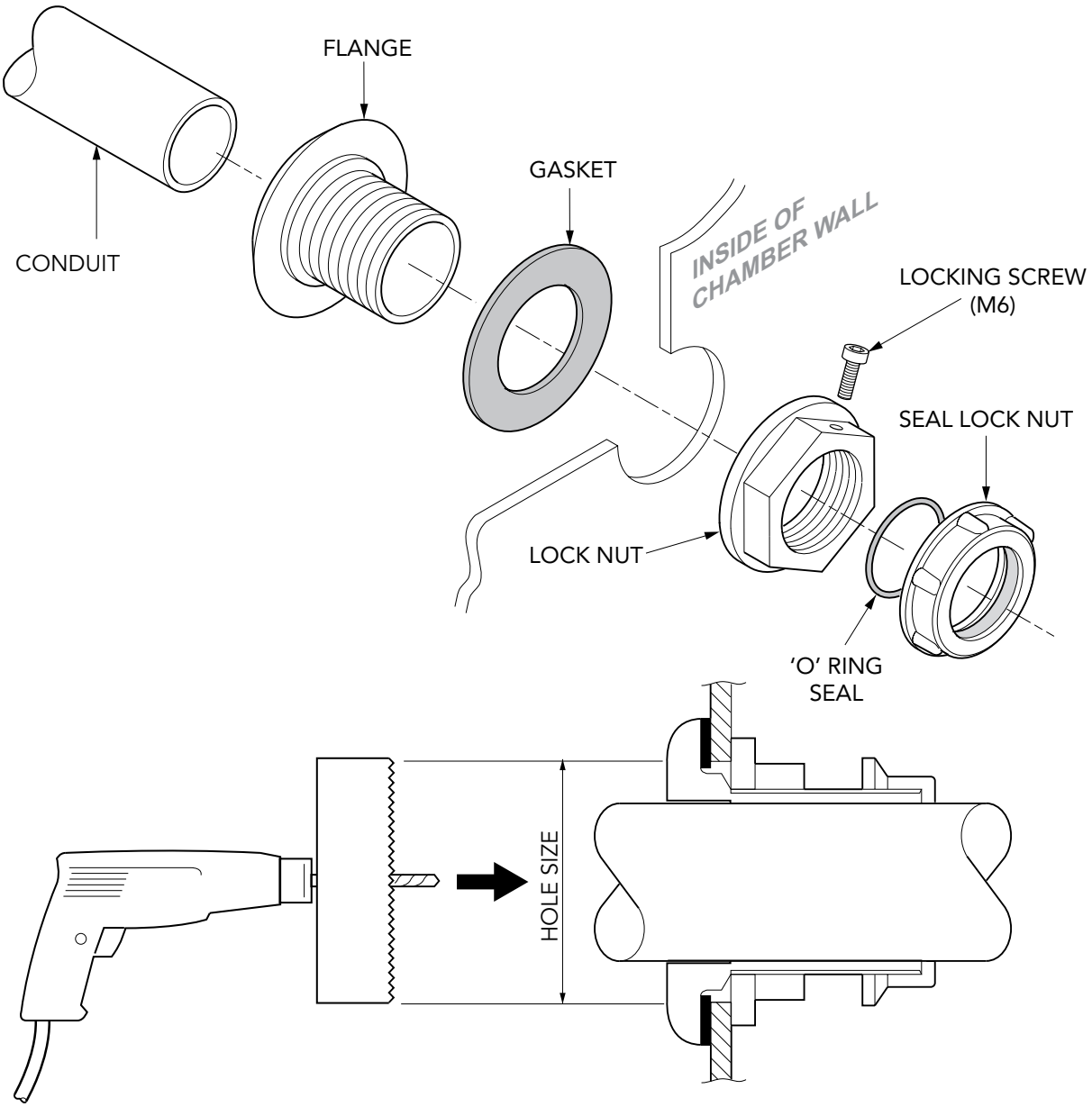
Refer to pipe entry boot instructions on positioning of the hole.

Conduit must be installed at 90º angle to the side wall.

Use Fibrelite entry seal kit model PEC/32 to fit UPP + NUPI 32mm conduit.

PEC/27, PEC/33, PEC/50 to fit metal conduit sizes ¾", 1" and 1½" respectively.





NB: Use the correct size drill piloted hole saw for each entry kit. The cable entry seal must be fitted perpendicular to the chamber wall and the conduit must enter the entry kit perfectly aligned. When backfilling ensure the conduit is not disturbed.

ENTRY KIT	HOLE SIZE
PEC/27	Ø2"
PEC/32	Ø2"
PEC/33	Ø2 3/8"
PEC/50	Ø2 7/8"

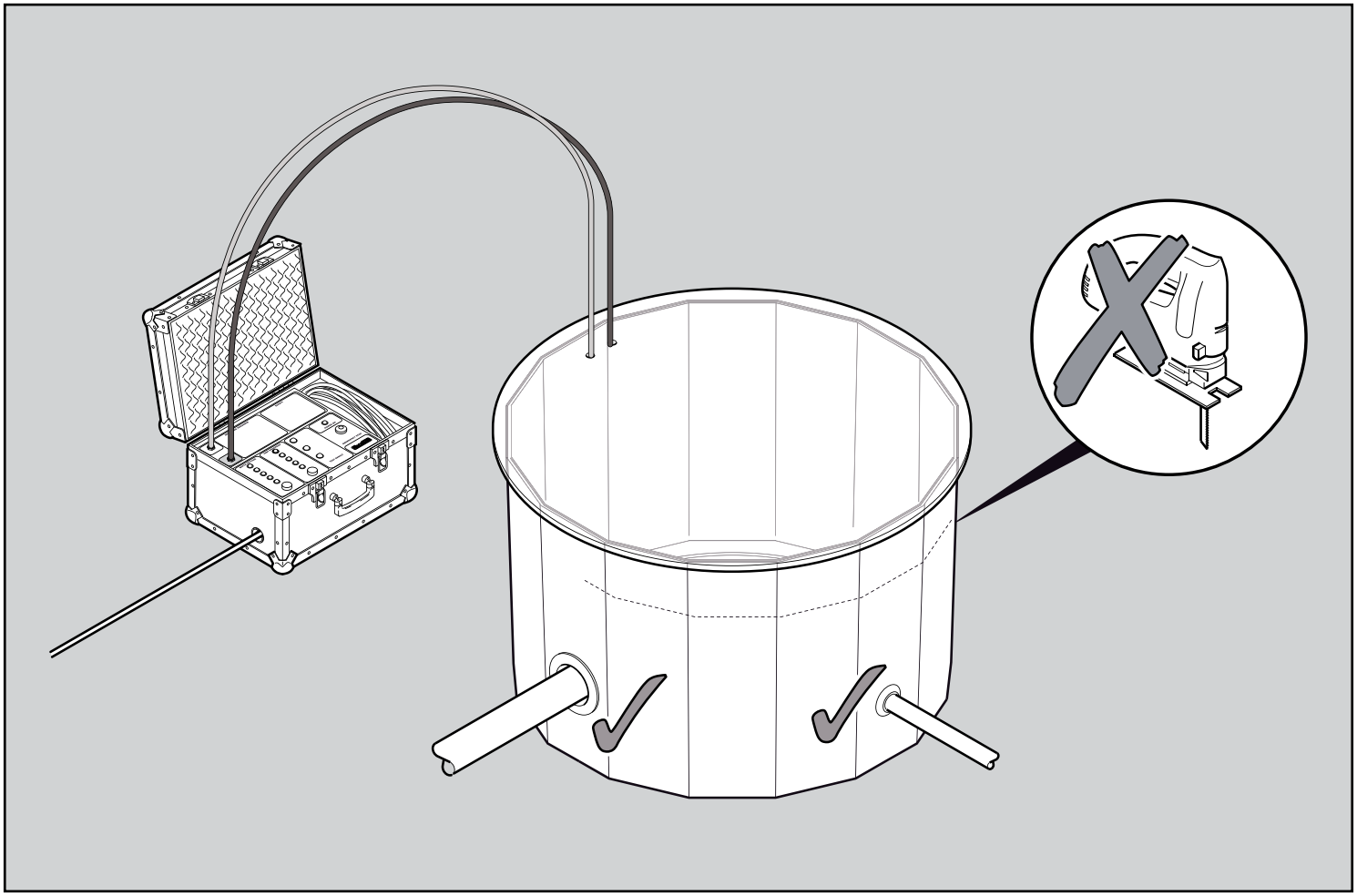
10 After penetrations have been fitted, ensure all connections on the manway lid are sealed.

Perform vacuum test.

Refer to Vacuum test instructions.

Do not backfill around Chamber or cut material off the Chamber until the test has passed successfully.

Note: Chamber to be tested to a depth setting of 1.2 meters/12 kPa.

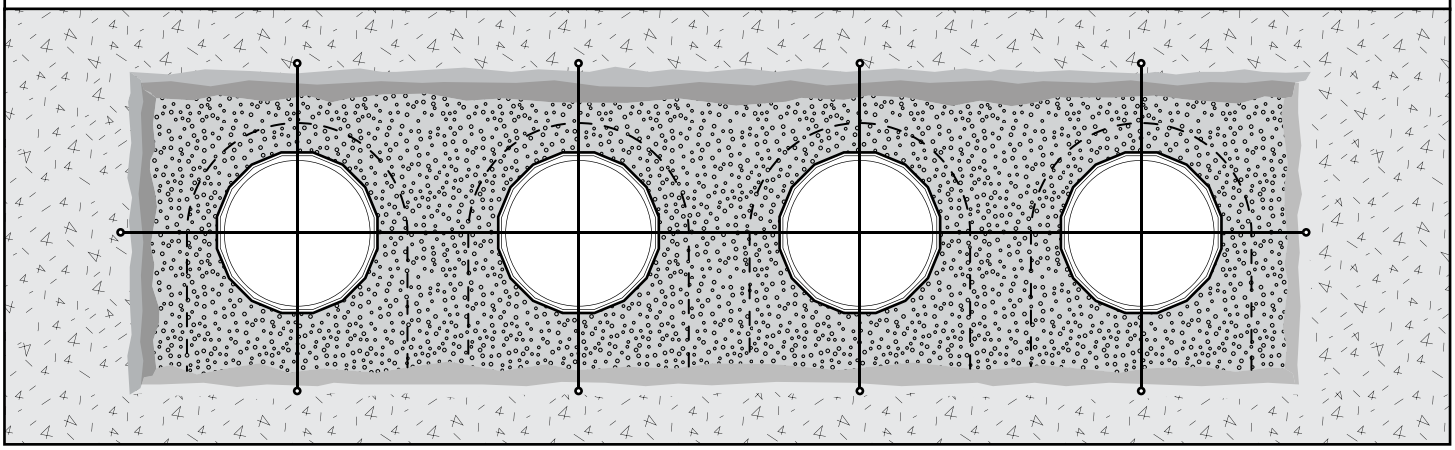


INSTALLATION INSTRUCTIONS
(Inspecting Parts and Achieving Correct Sump Height)

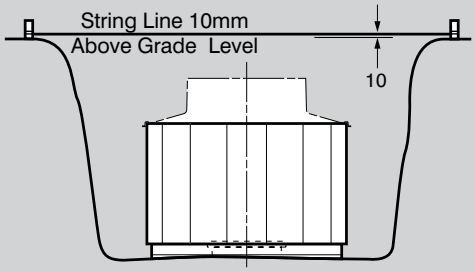
FIBRELITE
PART OF OPW A DOVER COMPANY

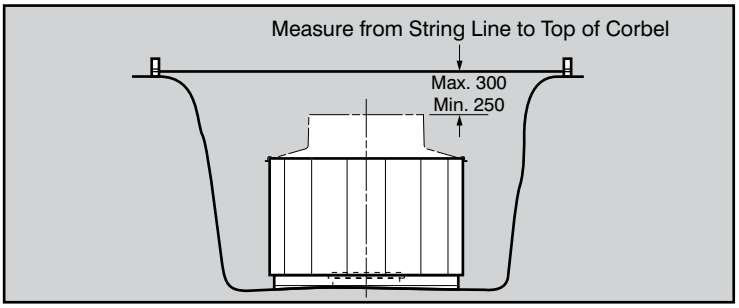
11 Using the packing list and the drawing on the front page of these instructions as a reference, confirm that all sumps, manholes and related parts and accessories have been received.

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



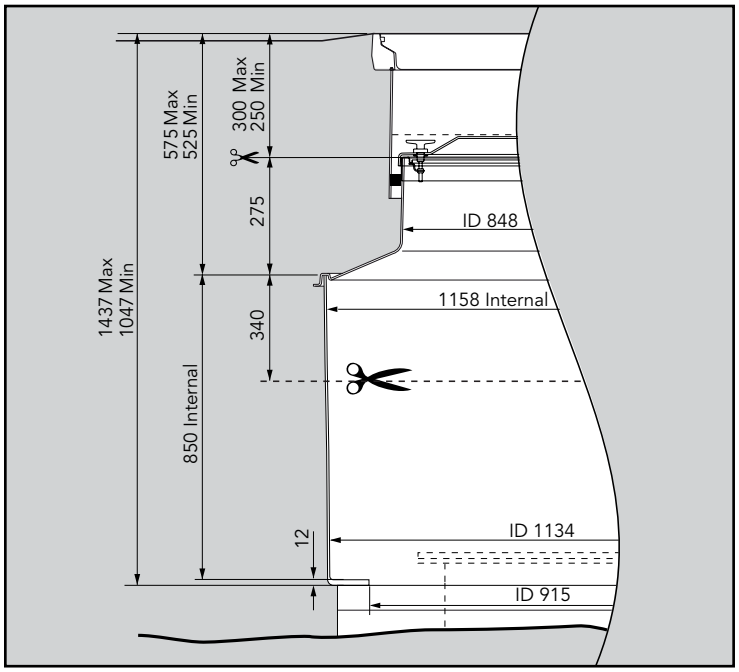
13 Place the sump base onto each of the tank manways and place the corbels onto the sump bases ("dry fit" the sump bases and corbels at this stage). Use a marker to mark each sump to reflect the tank it is installed on. Measure the distance from grade level to the top of the sump corbel for each sump and note the measurement in a log or on the side of the sump. Compare each measurement against the measurement chart in Instruction 4 below and take the appropriate action.



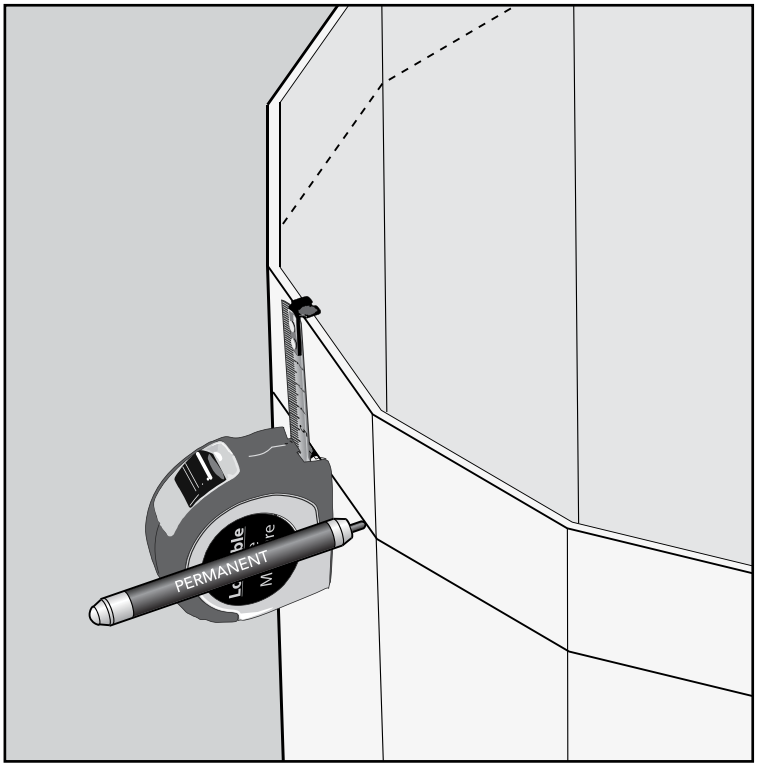


14 Refer to this measurement chart;

Distance from Grade Level	Action
Max. 300mm Min. 250mm	No trimming or extensions required, proceed with installation.
Less than 250mm	Sump base only (do not trim corbel) must be trimmed to allow for minimum 250mm clearance – follow instructions on next page. **Do not trim more than 340mm from sump base – contact distributor for shorter base if required.**
More than 300mm	Install 300mm extension to sump base – contact distributor and order S8-EXT300 extension. Follow "Bonding the Extension" instructions.

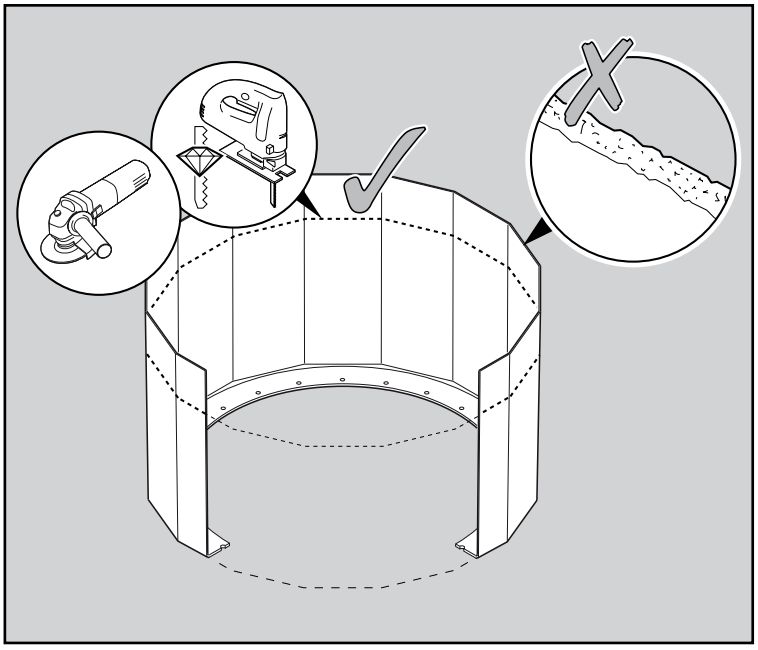


15 As shown in the drawing to the right, mark the trim line on the sump base using an indelible marker - make sure to mark a level line on the tank sump for cutting (use a locked tape measure as shown). If the line is not level, re-measure and re-mark until the marked line is correct and level. The sump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



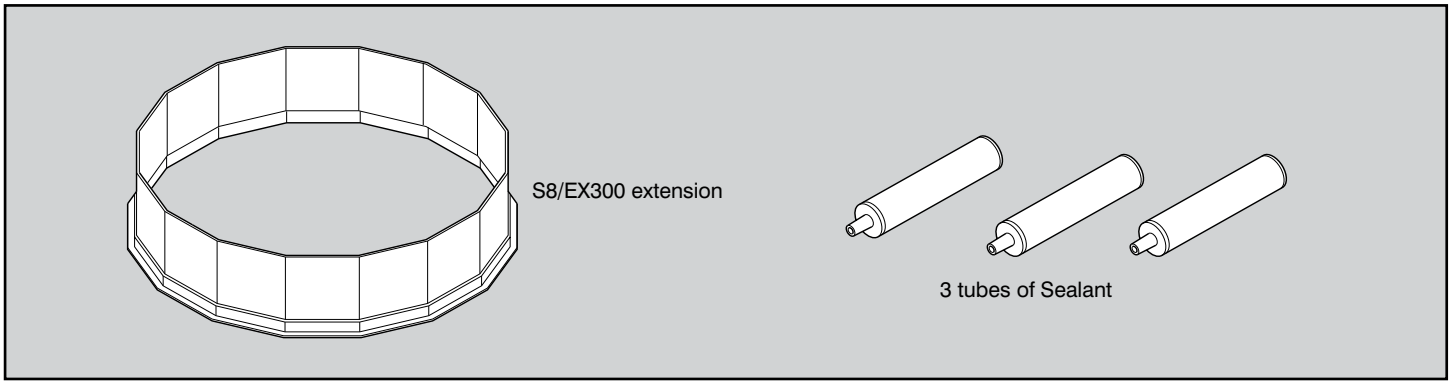
16 Use an appropriate cutting tool and blade such as a diamond blade cutter (as shown in the drawing) to ensure that the sump is cut evenly.

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



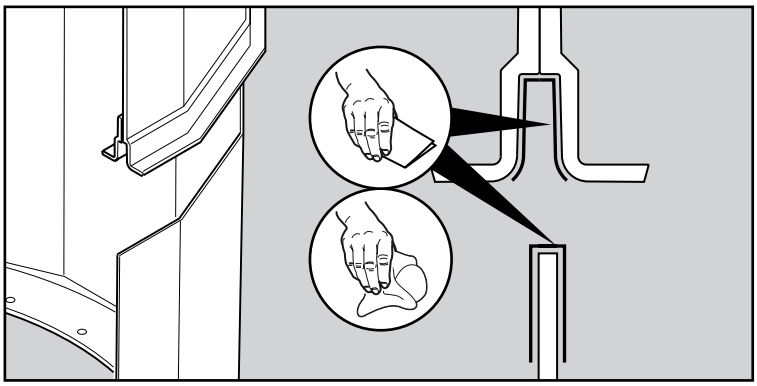
INSTALLATION INSTRUCTIONS
(Bonding the extension to the sump base)

FIBRELITE
PART OF OPW A DOVER COMPANY



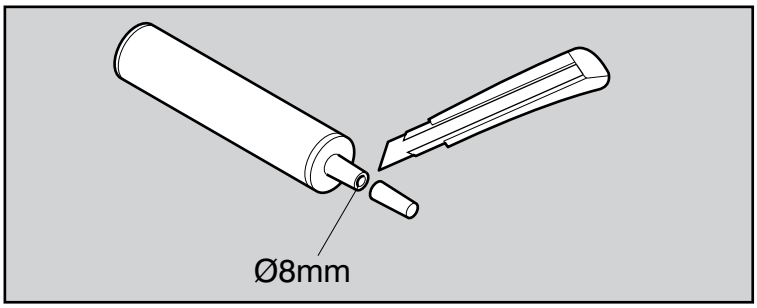
17

Prepare the mating surfaces of the tank sump base and the downward facing groove on the extension (as shown at right). Use heavy grit sandpaper to ensure that the fiberglass surface is exposed. After sanding, clean both surfaces using acetone (or equivalent solvent).



18

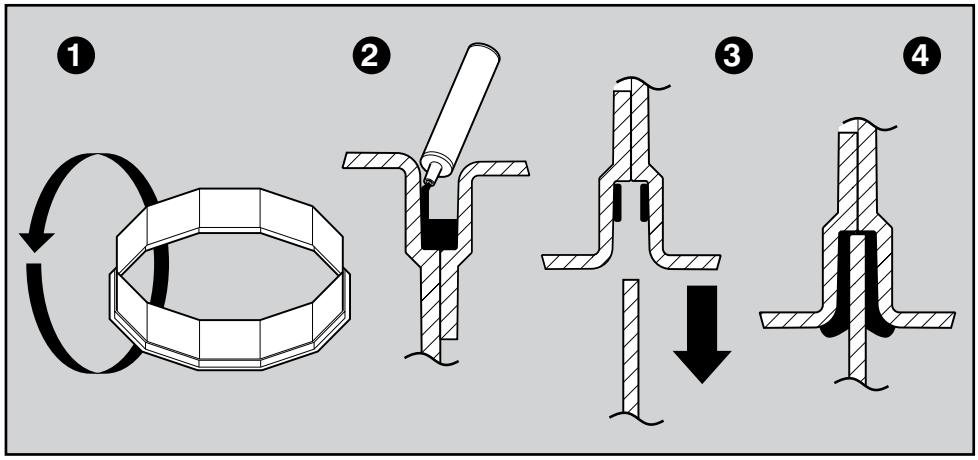
Cut nozzle of the adhesive sealant tube to approximately Ø8mm.



19

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

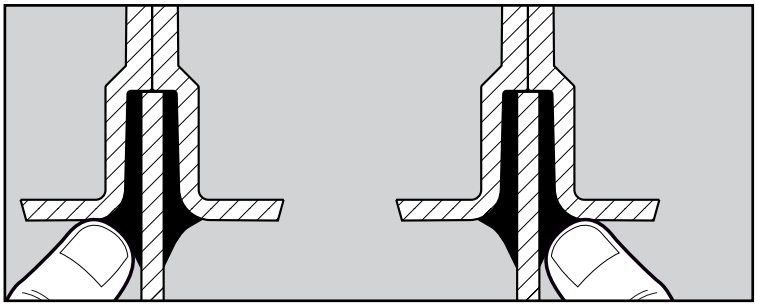
Position the extensions(s) onto the chamber, ensure the extension is horizontal and press down uniformly.



20

Remove excessive adhesive sealant from the internal joint with a scraper and smooth off.

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

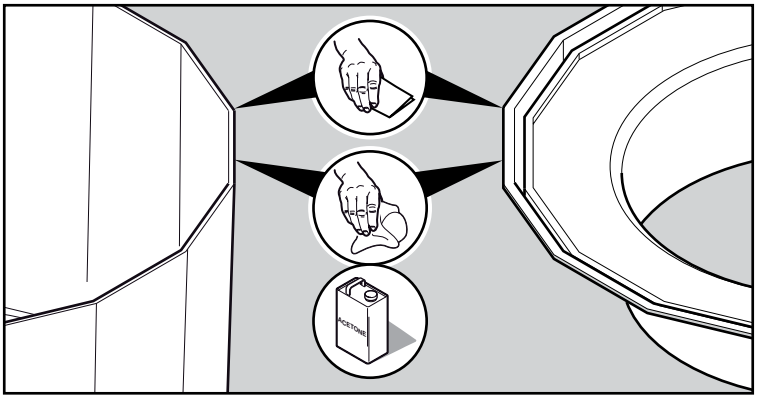


INSTALLATION INSTRUCTIONS
(Bonding the corbel to the sump base or extension)

FIBRELITE
PART OF OPW A DOVER COMPANY

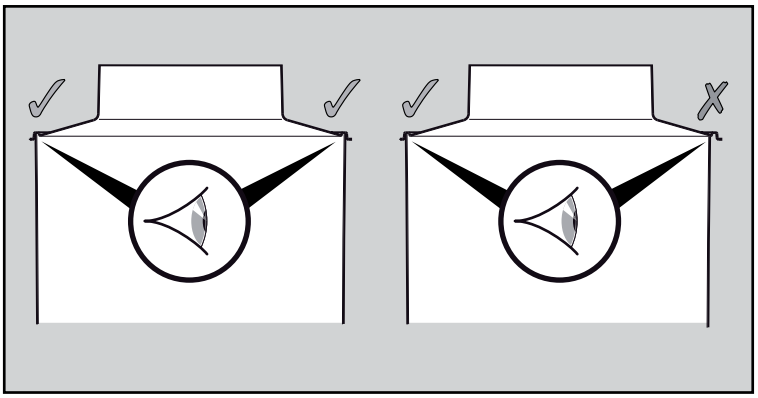
21 Prepare the mating surfaces of the tank sump base (or extension) and the downward facing groove on the corbel (as shown at right).

Use heavy grit sandpaper to ensure that the fiberglass surface is exposed. After sanding, clean both surfaces using acetone (or equivalent solvent).

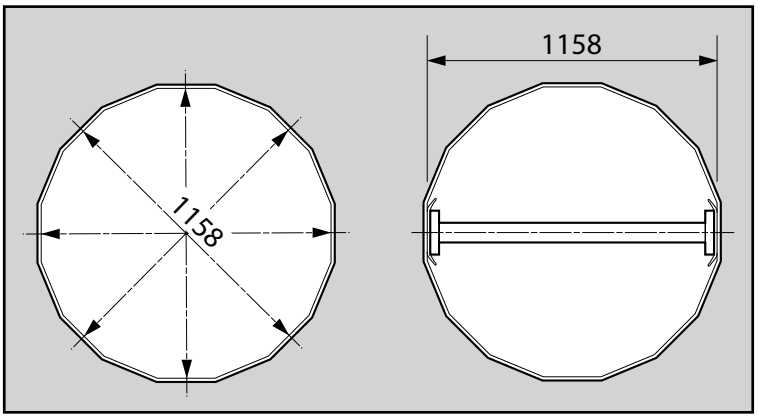


22 Dry fit the corbel on the sump to ensure it fits - push corbel groove onto sump wall.

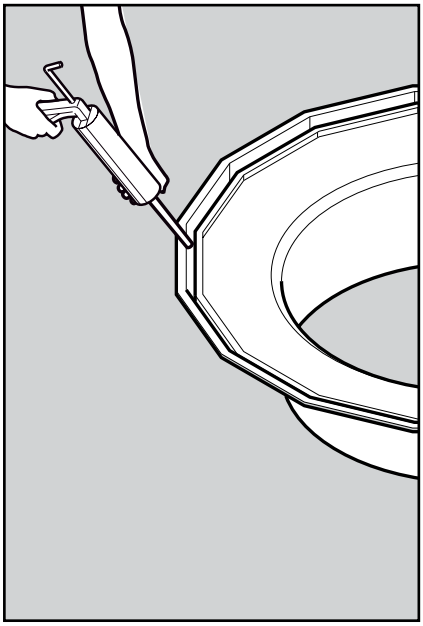
If the corbel does not fit properly onto the sump wall, measure the inside diameter of the sump walls (as shown to the right). The measurement should be between 1156mm and 1168mm (+/- 5). If the measurement is not within these specifications, the sump may have become out-of-round due to improper storage or installation.



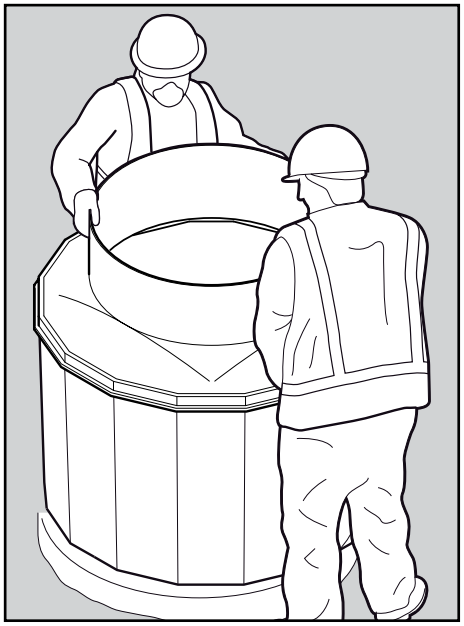
23 To fix an out-of-round sump base, first find the shortest distance between any 2 sump walls. Using a wooden 2x4 cut to 1158mm length, install the 2x4 at an angle into the sump and use it to brace out the sump walls to the correct size. Repeat this process on all sump walls to return the sump to its correct size.



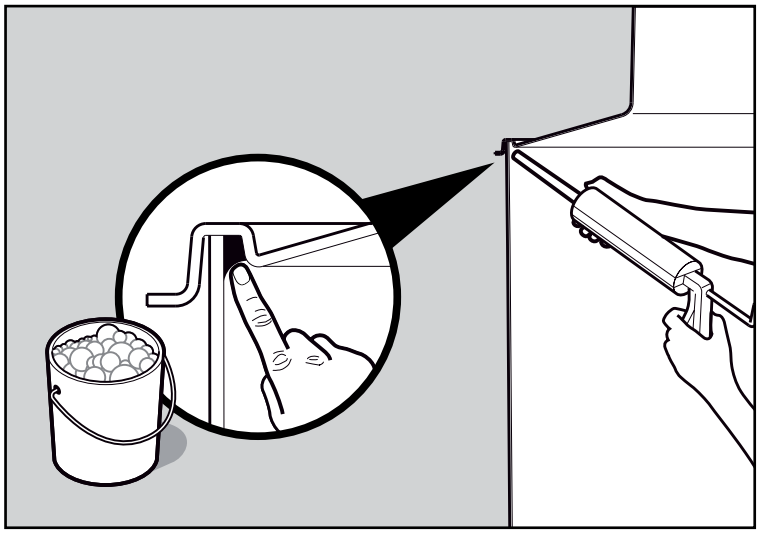
24 Apply 2 tubes of sealant in the groove of the corbel. Sealant should fill half the groove.



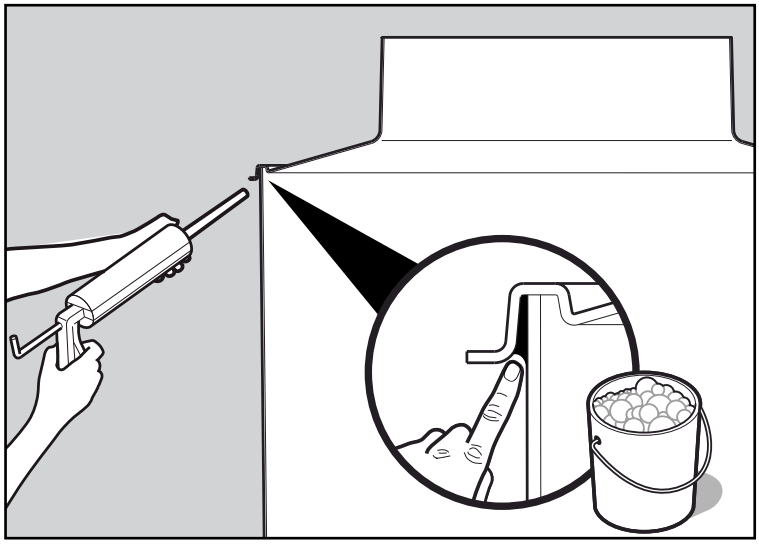
25 Place the corbel on the sump using 2 people and push it into position.



26 Seal around the inside edge of the corbel joint from inside the sump. Smooth off the sealant with soapy water.

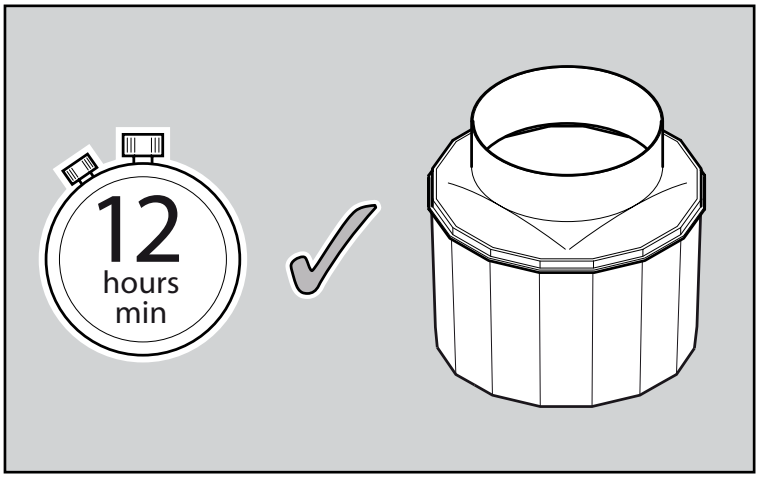


27 Seal around the outside joint and smooth off sealant with soapy water.



28 Wait a min of 12 hours before vac testing, preferably overnight to allow sealant to set before vacuum testing.

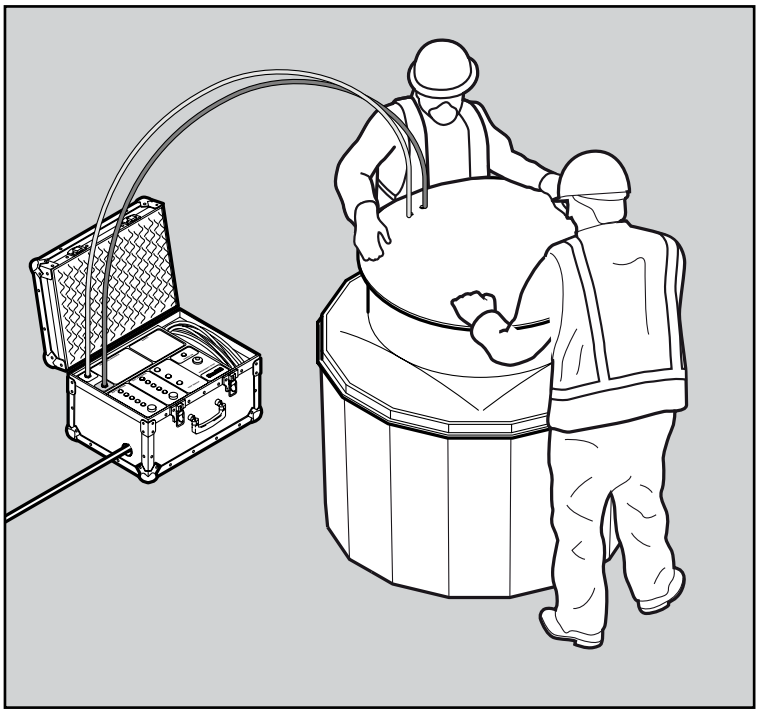
Do not disturb the sump during this time.



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

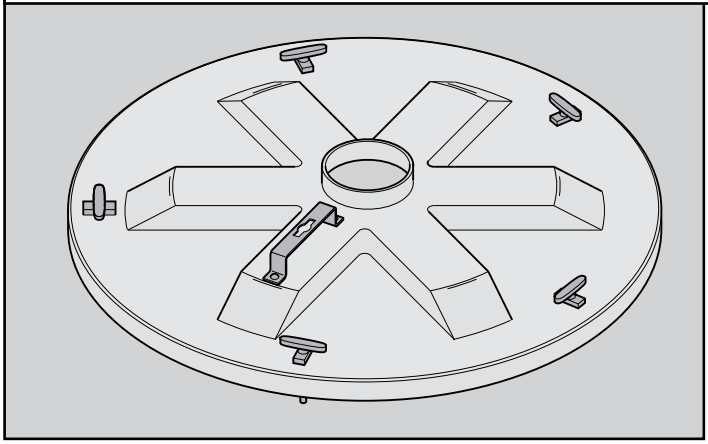
Warning: Test the corbel at a 0.6m depth setting only or irreparable damage may occur.

Refer to vacuum testing instructions for correct method.

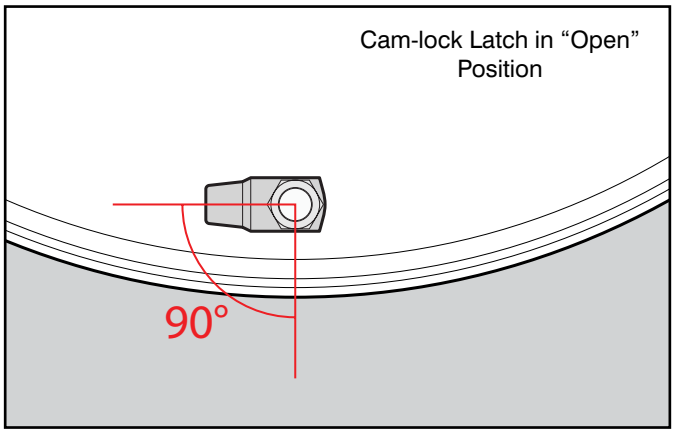


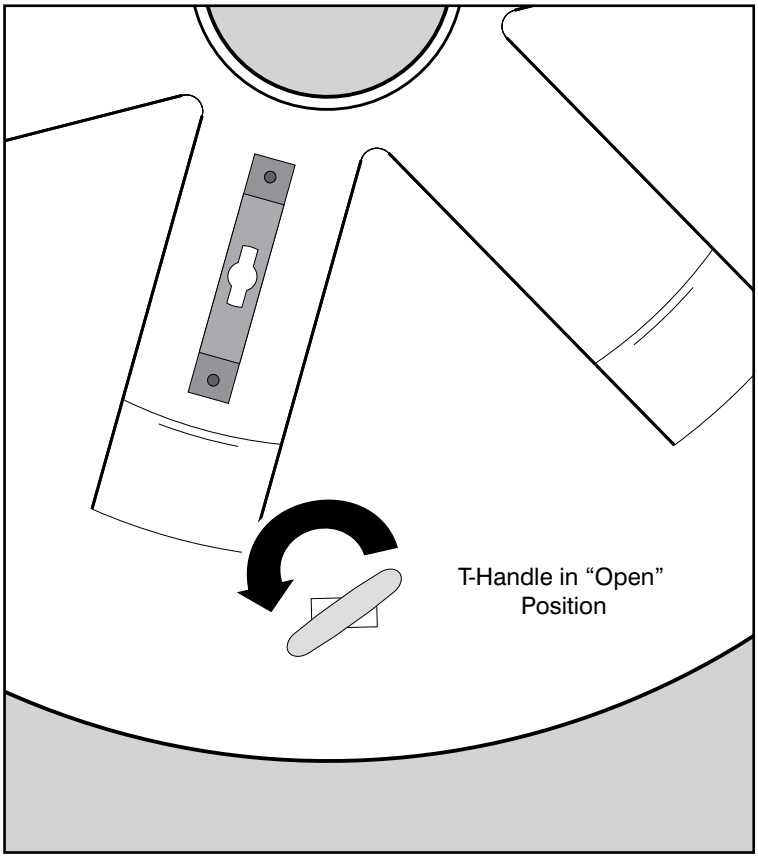
INSTALLATION INSTRUCTIONS
(Installing Watertight Lids)

Installation of Watertight Lids: Once the sumps are properly installed and tested, the watertight lids should be installed to ensure that the lids fit properly onto the stainless steel retaining rings.

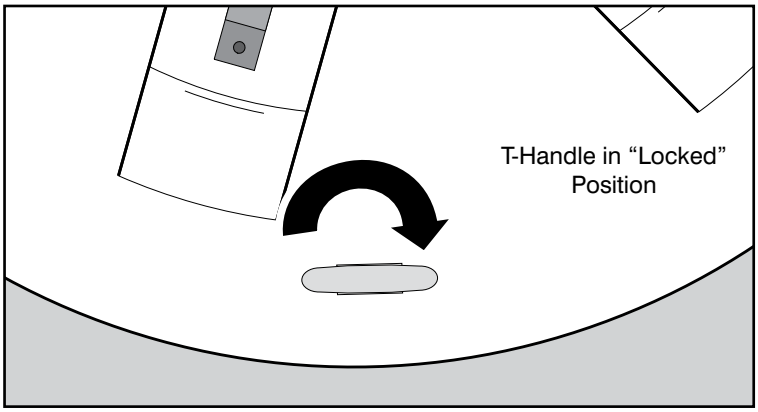


30 Turn all T-handles on the top of the lid fully counterclockwise to the open position (as shown in the drawing to the right) – the cam-lock latches on the underside should be 90 degrees opposed from the edge of the platform (as shown below).



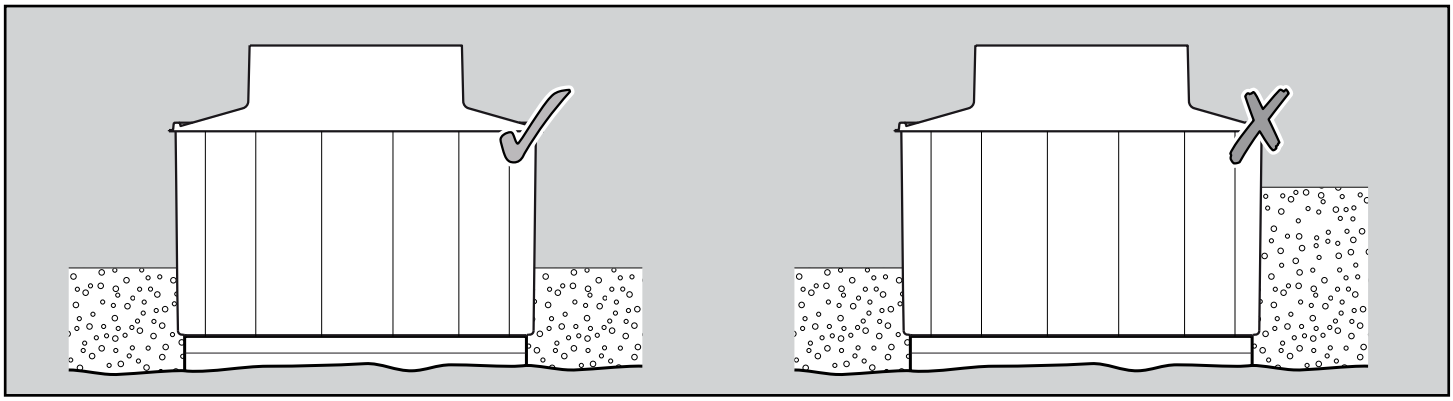


31 Seat the watertight lid on the stainless steel ring. Turn the T-handles fully clockwise to lock the latch beneath the stainless steel ring (T-handle should be as shown in the drawing to the right). When the T-handle is in this position, the lid should be pulled down onto the stainless steel retaining ring so that the gasket on the lid is tightly compressed between the underside of the cover and the ring.



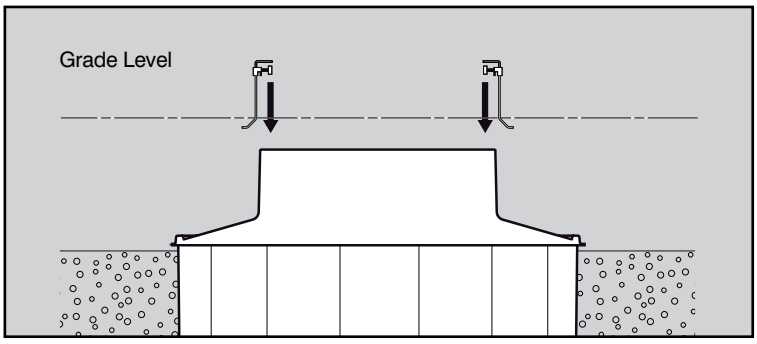
NOTE : If the T-handle cannot be fully engaged or if the lid is not compressing the gasket tightly against the stainless steel ring, it may be necessary to adjust the nut at the base of the cam-lock latch.
If this is the case, contact Fibrelite technical support at +44 (0)1756 799 773

32 Once the sump and corbel have successfully passed vacuum or hydrostatic tightness testing, the area around the sump can be carefully backfilled with peagravel or sand. Back-fill equally around the sump in layers to prevent damage or deformation.



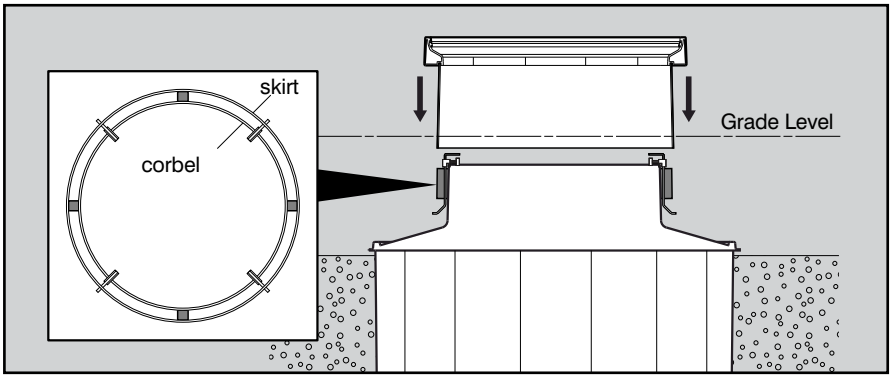
(Installing the Skirt & Frame to Grade Level)

33 Fix a string line 10mm above grade level across the sump, fix 4 hangers on the corbel top with base support facing out.

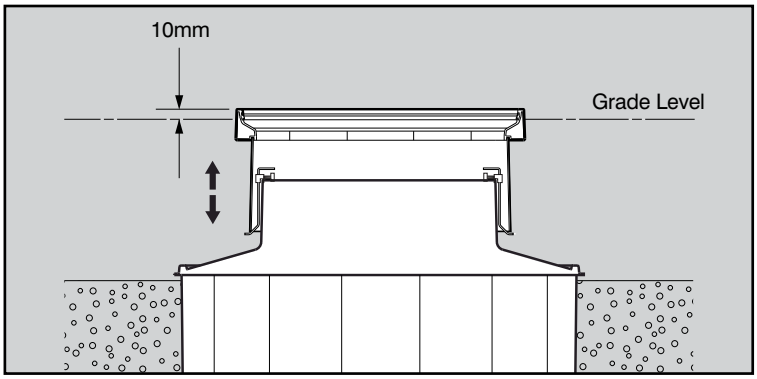


34 Put the skirt and frame on the hangers.

Locate the 4 foam blocks supplied between the skirt and corbel turret to centalise the skirt about the corbel. Failure to this may result in the internal lid fouling.

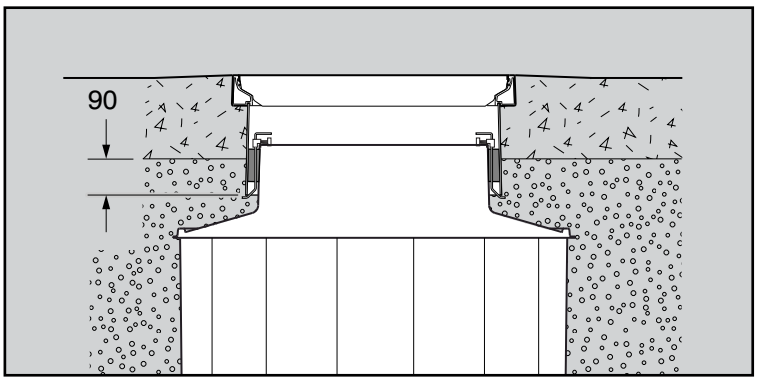


35 Adjust knobs to set the frame to stringline level, adjust for fall in grade. Set the frame 10mm above grade level.



36 Ensure the void between corbel and skirt is kept free from concrete and a depth of 90mm overlap minimum is maintained.

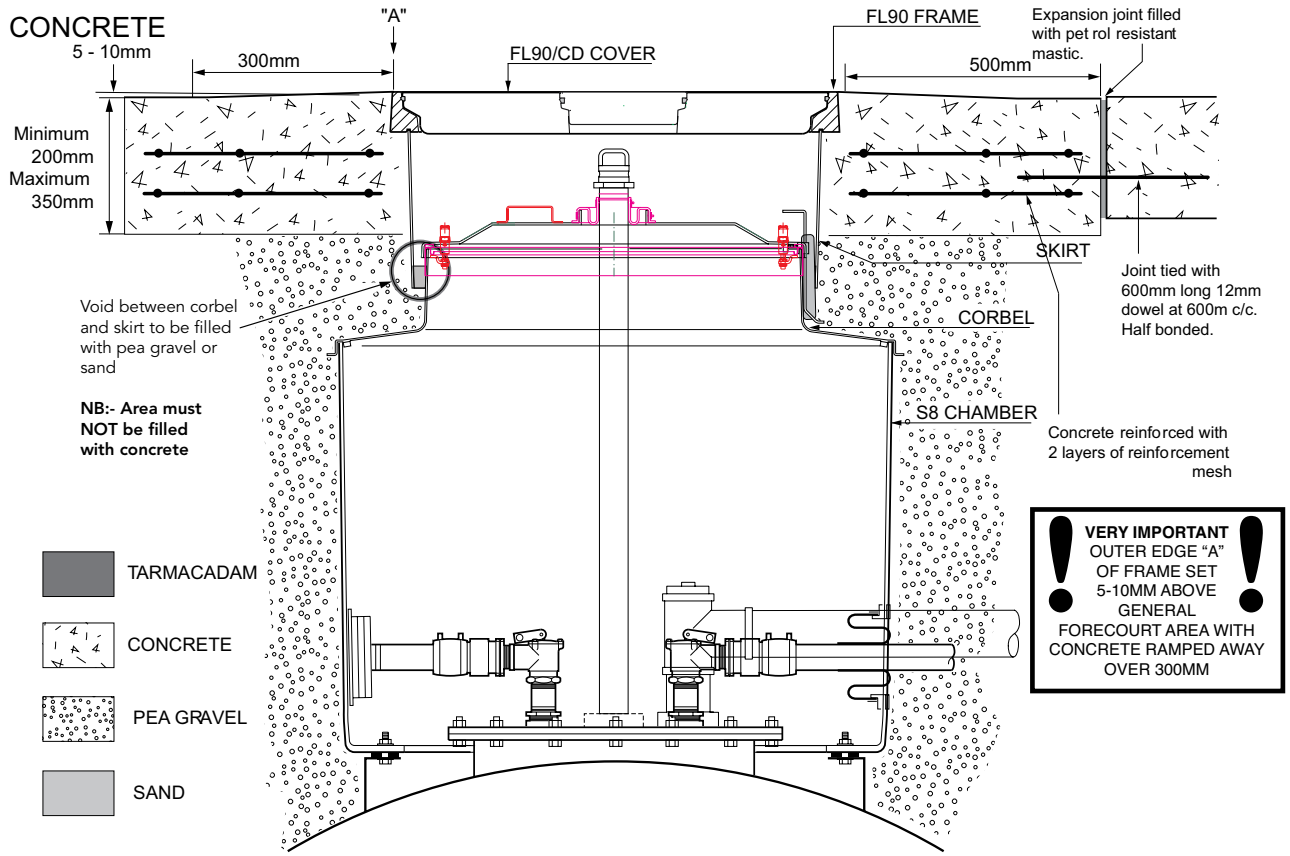
Ensure foam spacers are in position to locate the skirt centrally around the corbel.



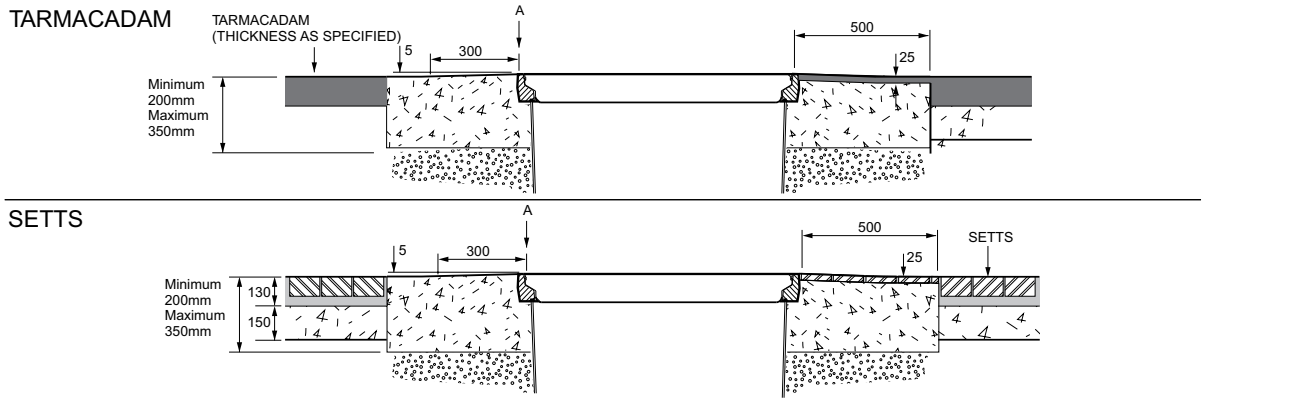
37 Complete backfilling to appropriate level. Frame must be supported by a minimum depth of 200mm of concrete

Concrete reinforcement must be positioned 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.

TYPICAL INSTALLATION

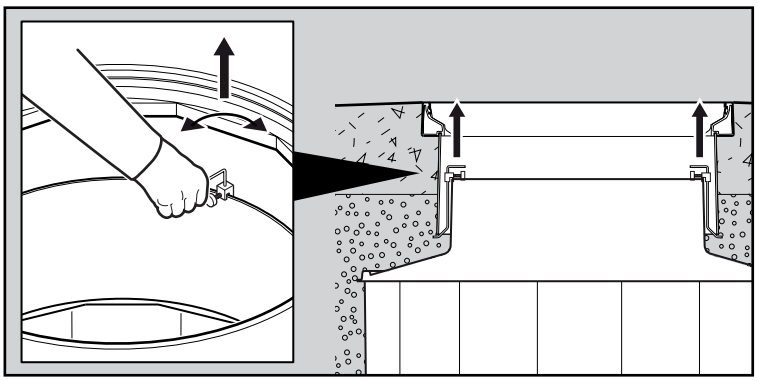


ALTERNATIVE INSTALLATION ADVICE



38 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.



(Final Testing)

39 **Optional vacuum test on corbel.**

Once completed a final test can be performed.

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