

INSTALLATION INSTRUCTIONS

S14-390-CD-WT Tank Chamber System

FIBRELITE 
PART OF OPW A DOWDER COMPANY

FC-254 Central Dip Cover

FL90-CD Flat Sealed Cover

FL90 Frame

FL90 Skirt

PSB-50-PS-VITON

Watertight Lid

Stainless Steel Ring
(Factory fitted on corbel)

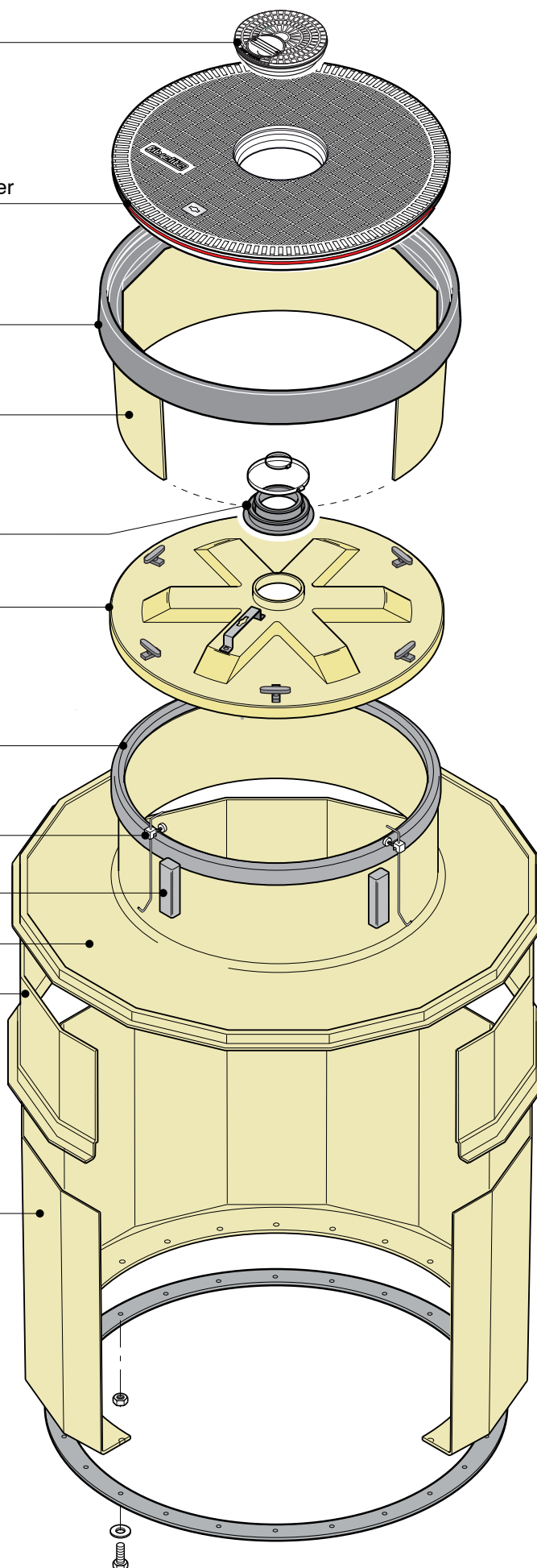
Hangers (4)

Foam Spacers (4)

Corbel Unit

Extension

Tank Chamber



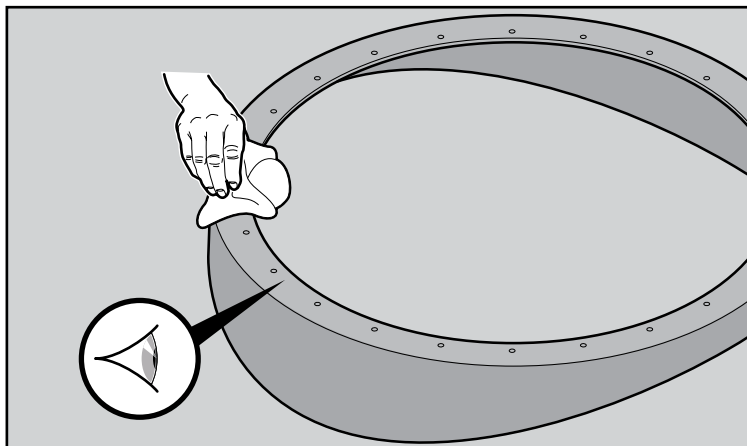
INSTALLATION INSTRUCTIONS

(Chamber Installation Guide)

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PART OF OPW A DOVER COMPANY

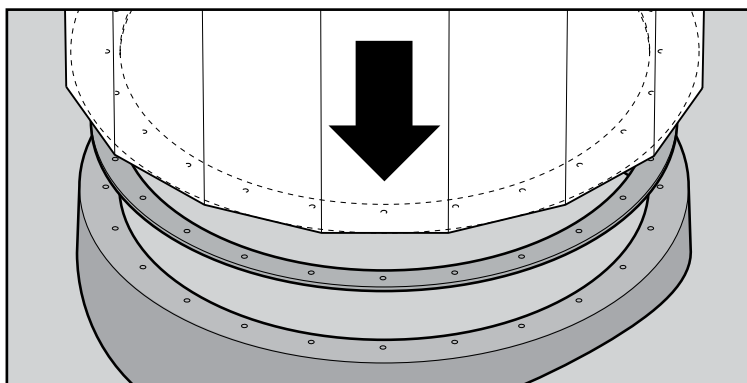
1

Clean the tank connection flange and ensure it is free of all grit etc. Check for flatness and deformation as this can cause the Chamber to become distorted or fail to seal. If in doubt contact our technical department (01756 799773).



2

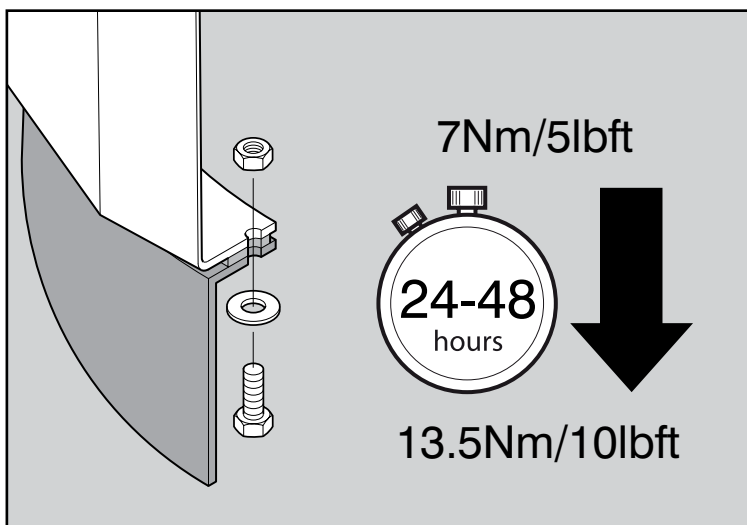
Remove protective cover from base of chamber and position chamber onto tank flange, aligning the holes. Ensure the seal on the base of chamber is not damaged and is free from grit etc.



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.

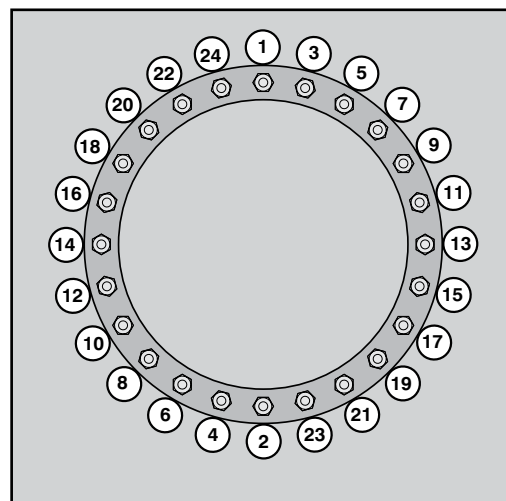
As the nuts and bolts are stainless steel “thread galling” maybe experienced. To overcome this we recommend Lubricating the internal and/or external threads. The suggested lubricants should contain substantial amounts of molybdenum disulfide (moly), graphite, mica, or talc. Some proprietary, extreme pressure waxes may also be effective. Slowing down the installation RPM speed will also reduce thread galling.



4

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

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

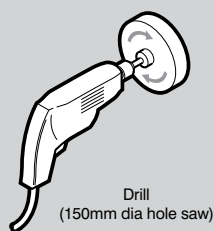


INSTALLATION INSTRUCTIONS

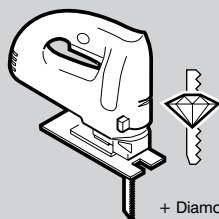
(Pipework and Entry Seal Kits)

FIBRELITE

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Drill
(150mm dia hole saw)



Jigsaw
+ Diamond tipped blades



Gloves

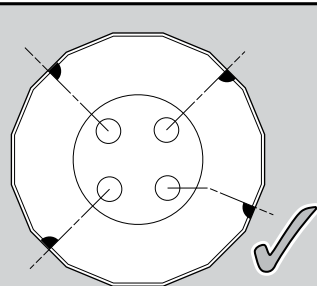


Safety Goggles

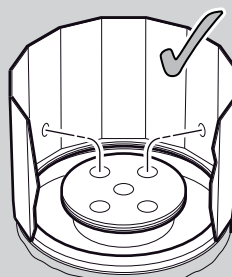
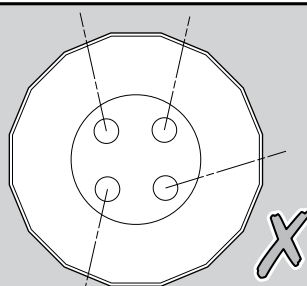


Face Mask

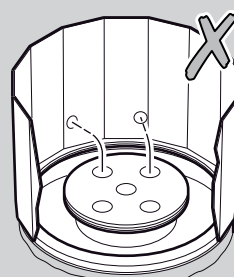
- 5 WARNING** Care must be taken to position the pipework and conduit so it exits the Chamber at 90° angle to the Chamber wall. Otherwise undue stress will be placed on the Chamber wall and entry boot, which may lead to leaks in the future.



Position pipeway at 90° angles to the Chamber 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.

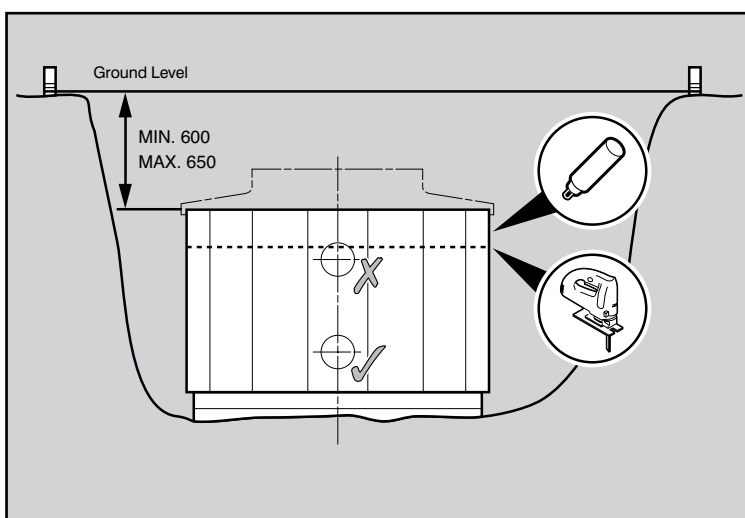
Check to ensure you have the necessary minimum clearance required from the top of the Chamber to the centreline of the pipework/pipe entry kits.

Standard Entry Kit = 145mm

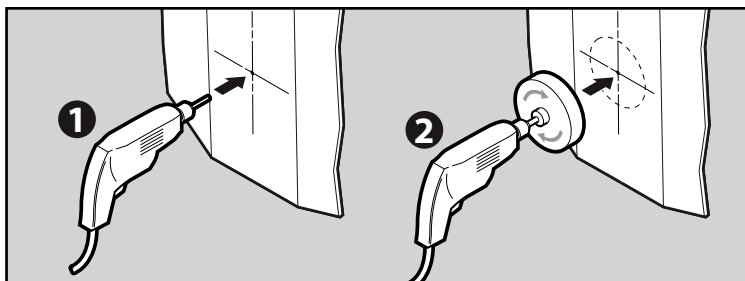
Large Entry Kit = 170mm

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.**

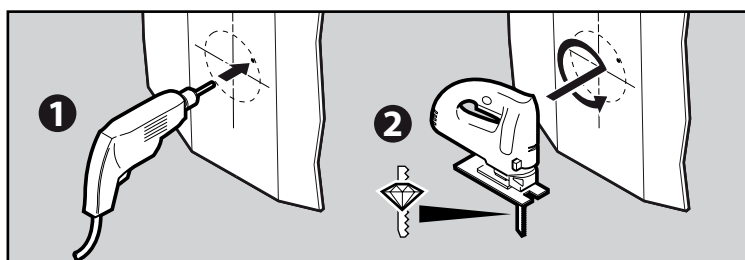
Refer to measurement chart.



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



- 8** For larger holes (190mm) we recommend that the hole is marked and jigsaw is used to cut the hole. Firstly, 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).

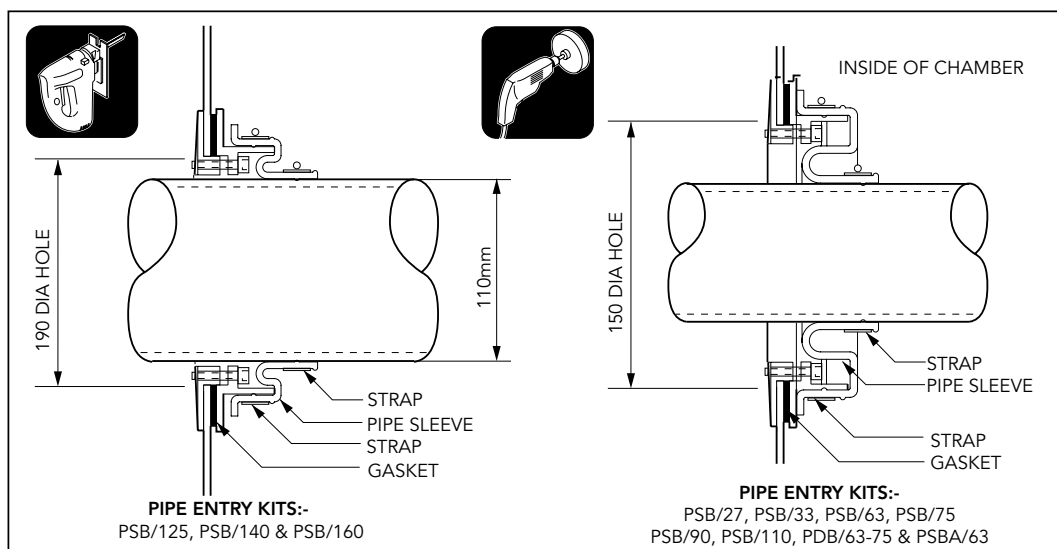
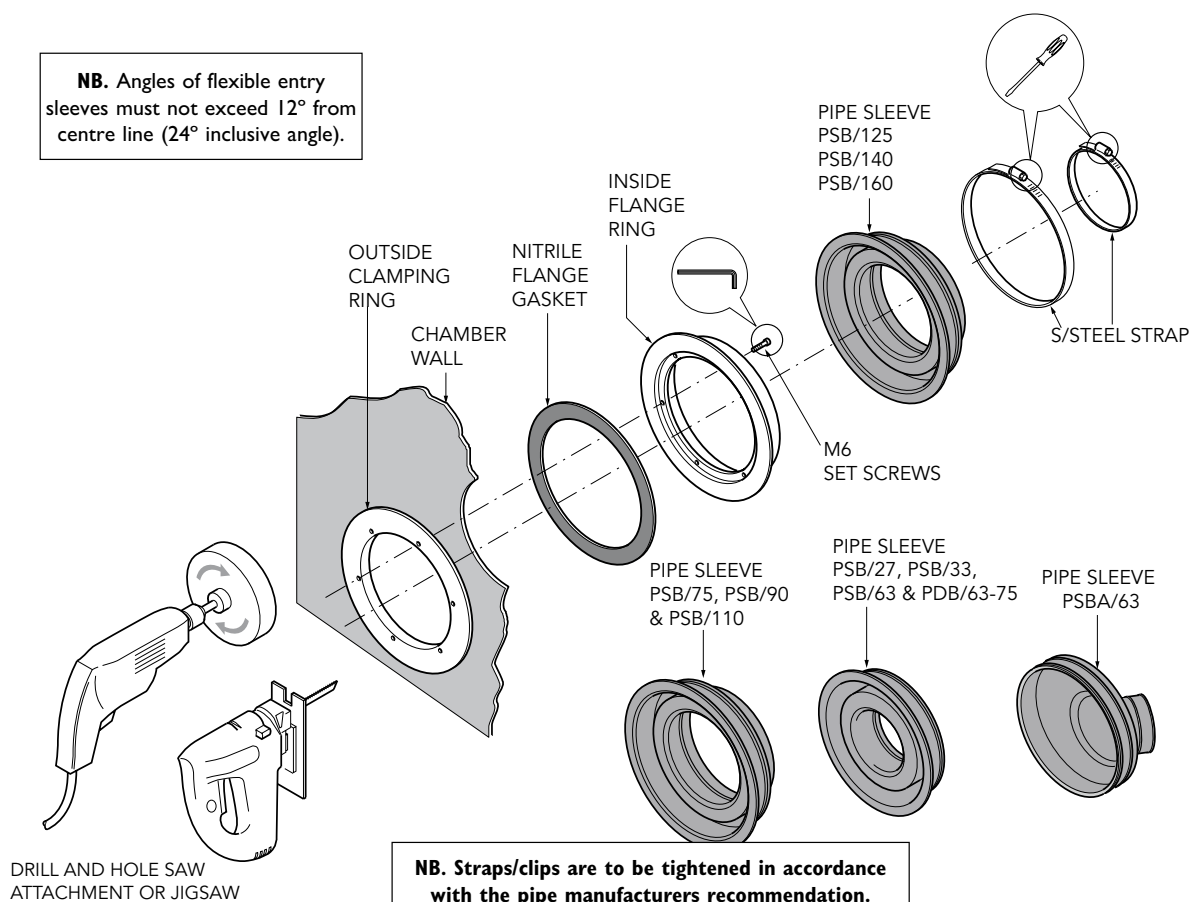


NOTE : When backfilling ensure the pipework is not disturbed.
WARNING : Do not backfill until the Chamber has been vacuum tested.

INSTALLATION INSTRUCTIONS

(Pipework and Entry Seal Kits)

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



NB. Where appropriate, 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.

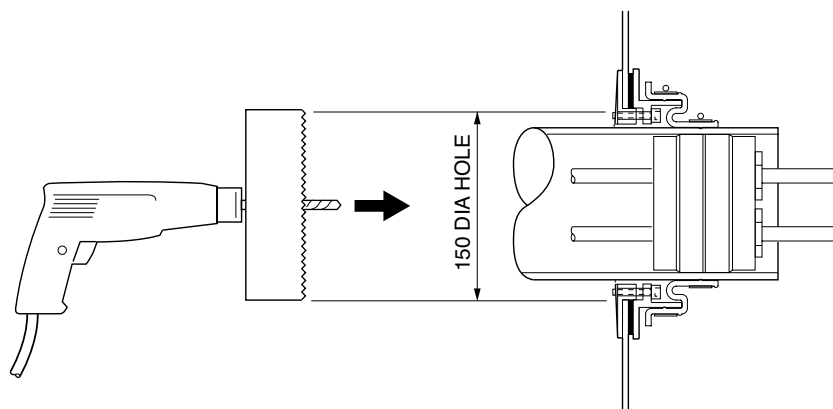
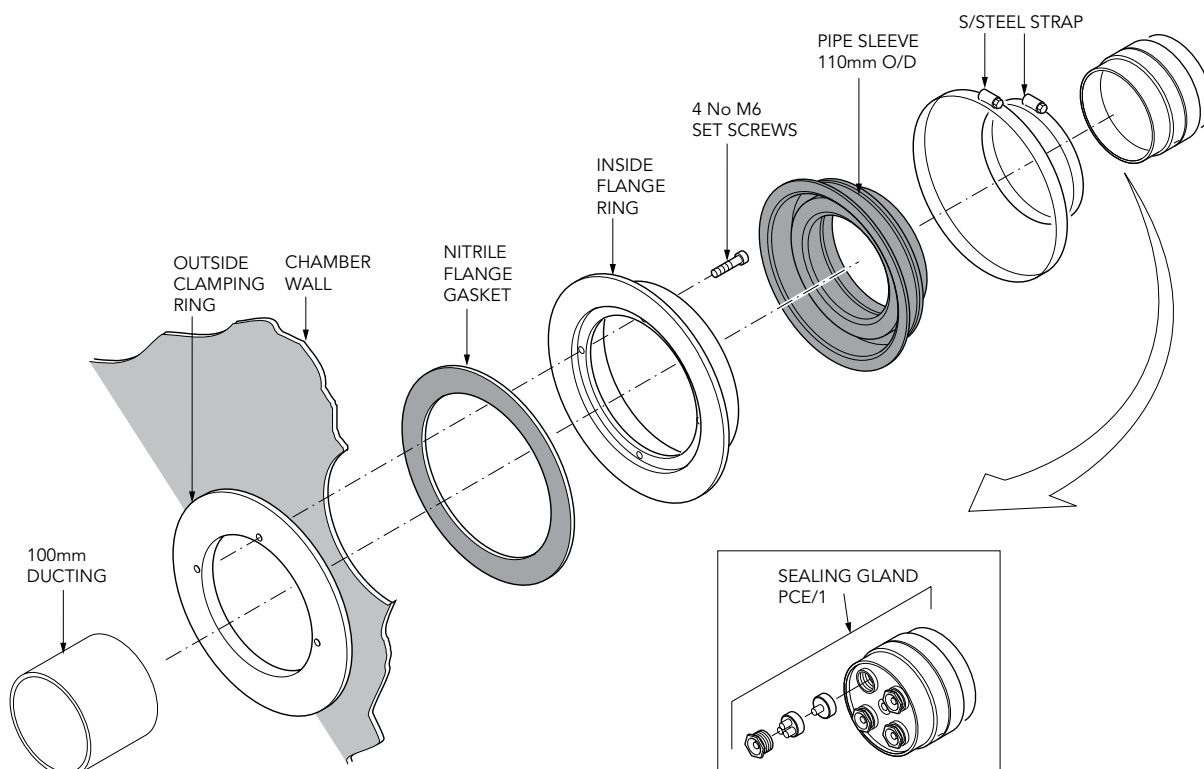
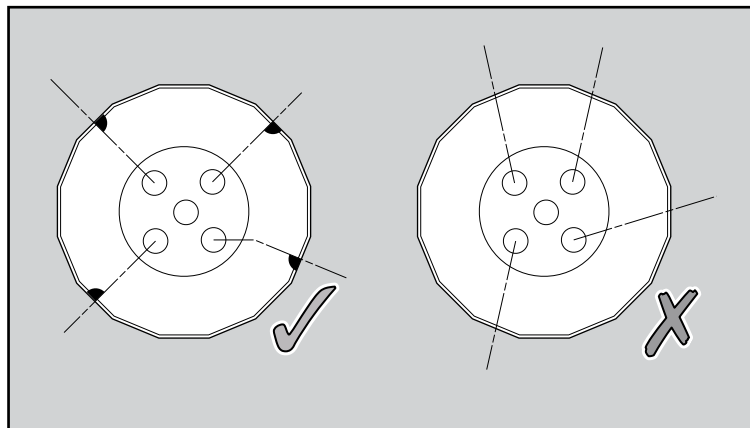
INSTALLATION INSTRUCTIONS

(Conduit entry seal kit installation guide)

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9 PCE-1-KIT

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



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.

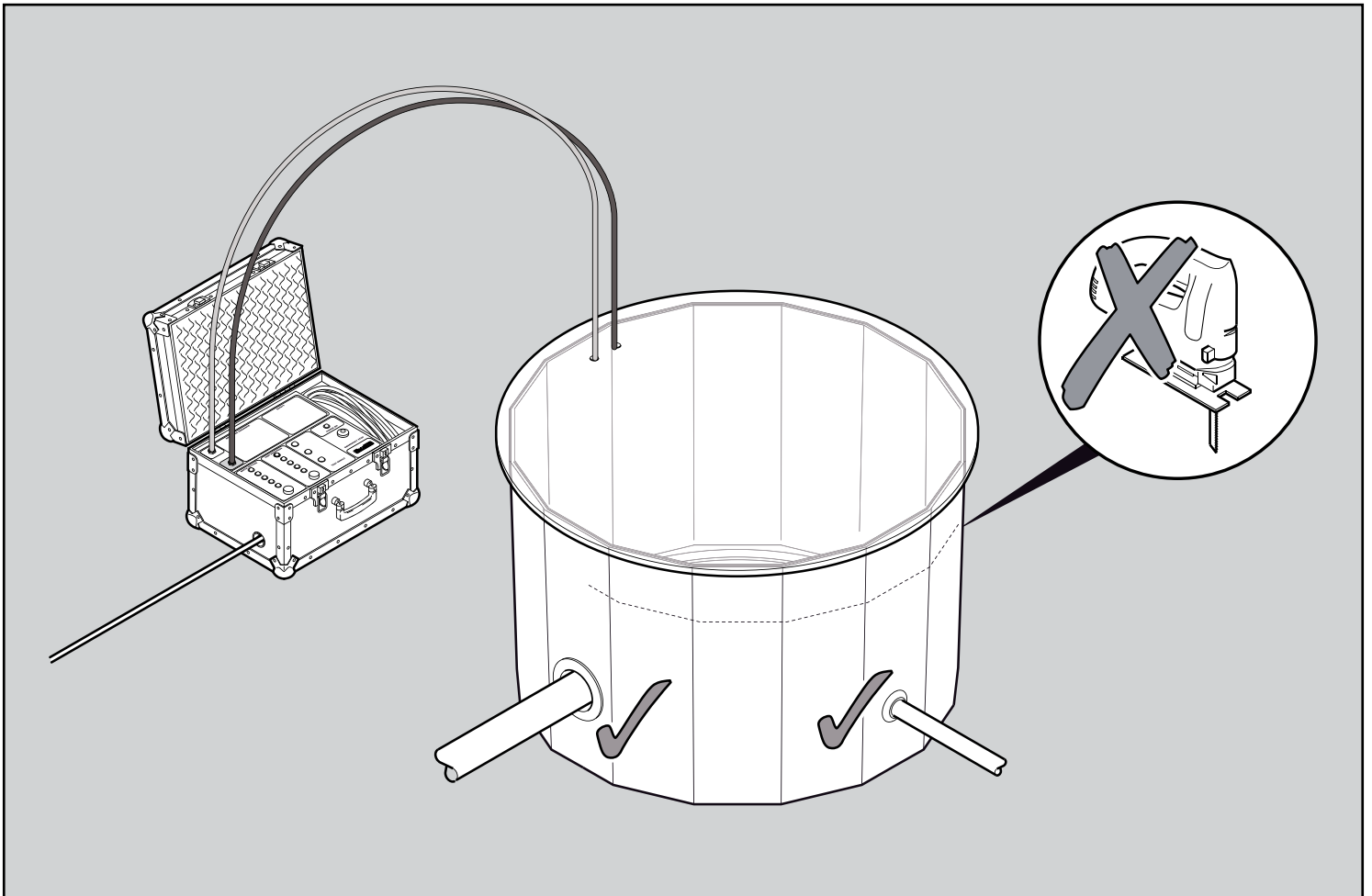
INSTALLATION INSTRUCTIONS

(Chamber Vacuum Test)

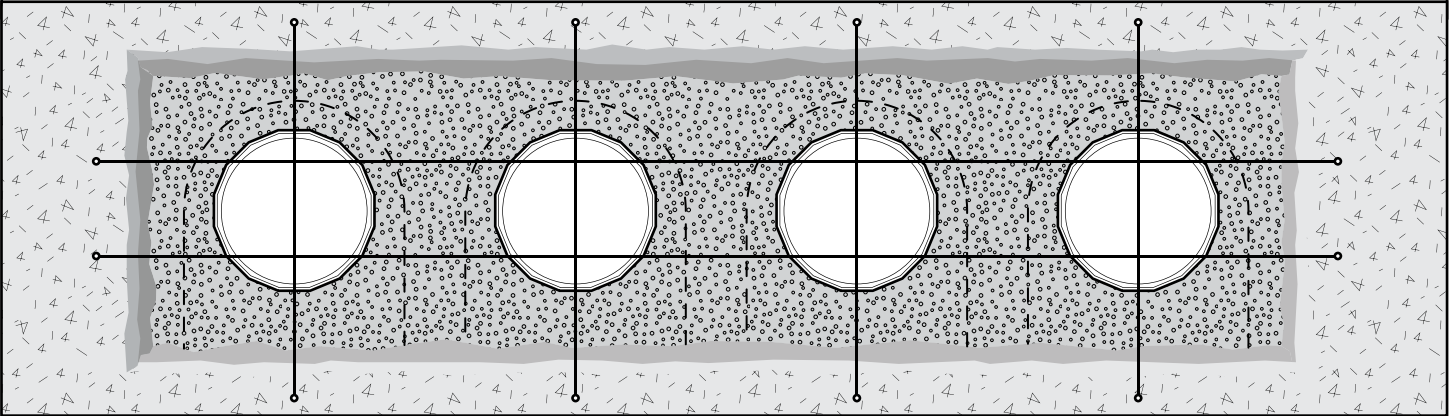
- 10** After penetrations have been fitted, ensure all connections on the manway lid are sealed. Perform vacuum test. Refer to Vacuum test instructions.

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

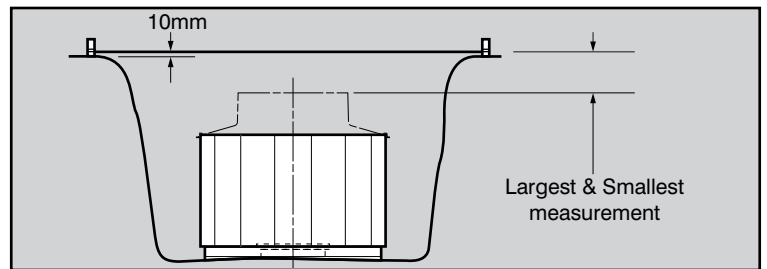
Note: Chamber to be tested to a depth setting of 1.2 meters/12 kPa.



- 11** Fix string lines 10mm above grade level across the Chamber - across length and width of the tank farm to highlight any falls.



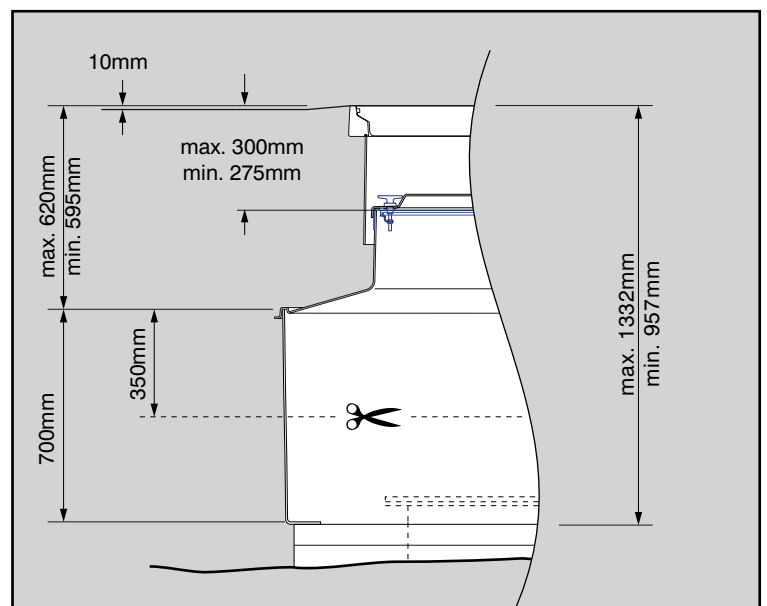
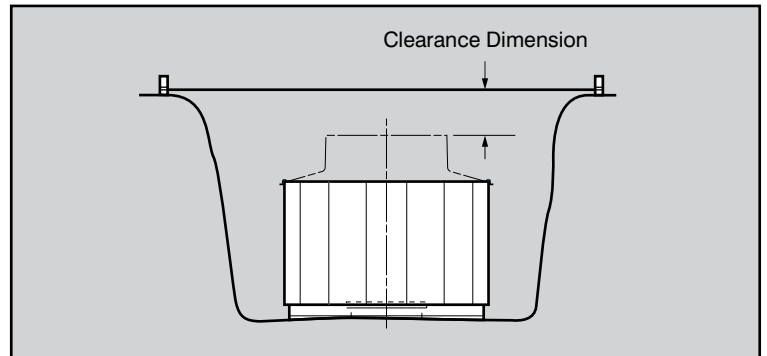
- 12** Place the corbel onto the Chamber (only 'dry fit' the corbel do not bond at this stage). Check the measurement from the top of the corbel to the string line, which is set 10mm above the general grade level. Check all sides of the Chamber and select the largest and smallest measurement to take account of falls across the forecourt.



13 IMPORTANT

Refer to this measurement chart;

Measurement (clearance dimension)	Action
Max. 300mm Min. 275mm	No trimming required, corbel can be bonded onto the Chamber. Adjust frame height using hangers.
less than 275mm	Trim material from chamber until clearance dimension falls within the range 300 to 275mm. NB:- The maximum amount of material that can be removed from the chamber is 350mm.
more than 300mm	The burial depth of the tank is greater than the maximum burial depth of the standard S14-390/ WT. Bond a 300mm extension onto the Chamber. Then proceed as above.



See page 10 for extension bonding instructions

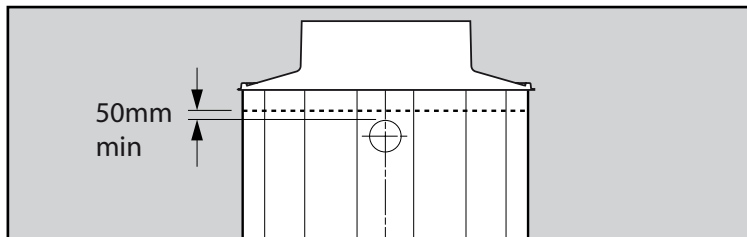
INSTALLATION INSTRUCTIONS

(Achieving the correct height)

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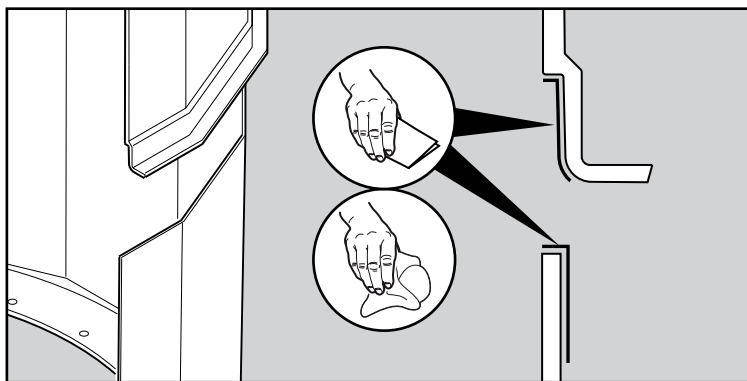
- 14** Before trimming the sump check pipe entry positions allow 50mm from top edge to be able to fit the corbel in position.
If necessary cut a smaller amount off the sump height, then cut the remaining material from the corbel and skirt.



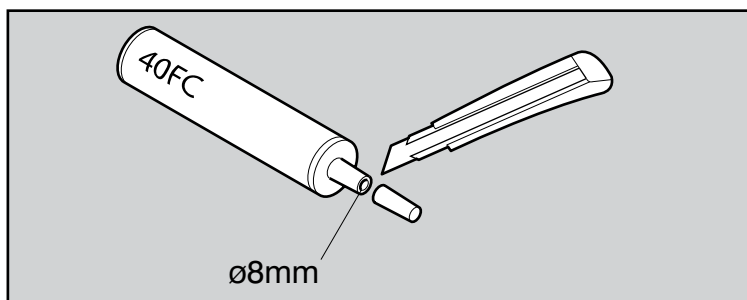
WARNING Do not trim Chamber until Chamber has been vacuum tested with pipework installed and completed.

(bonding the extension / chamber)

- 15** Abrade and wipe with a degreasing solvent the chamber top edge / wall and the extension recess shoulder

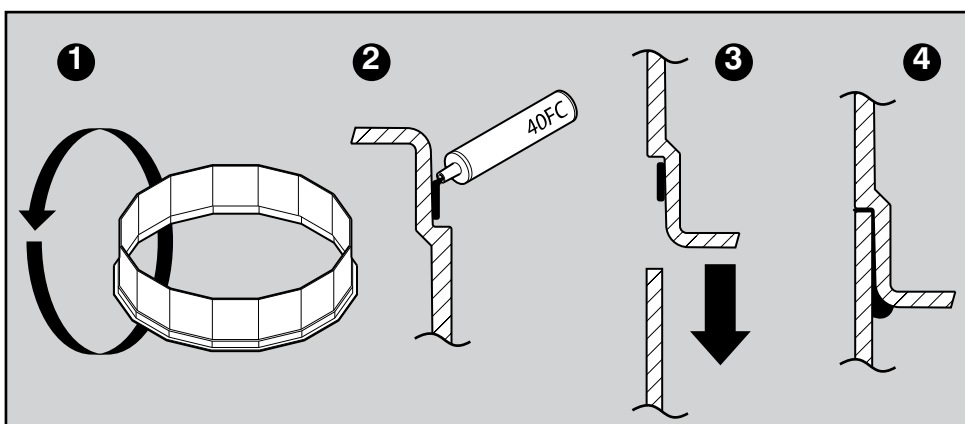


- 16** Cut nozzle of the adhesive sealant tube to approx. Ø8mm.



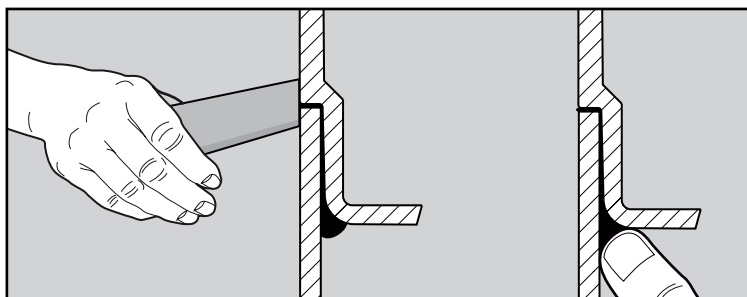
- 17** To permanently fix the extension, invert the extension and apply a bead of adhesive sealant to the vertical wall of the extension recess.

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



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

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



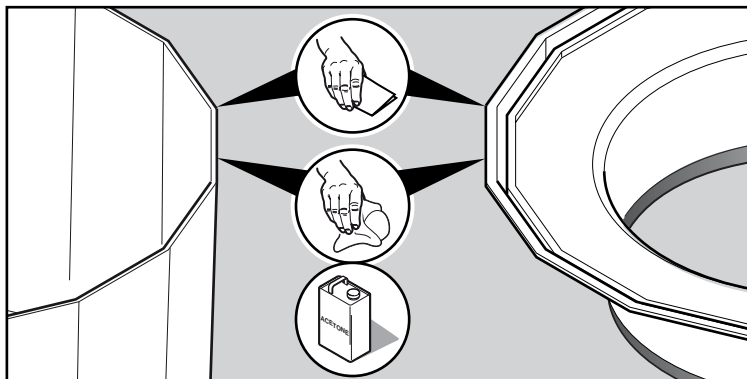
INSTALLATION INSTRUCTIONS

(Bonding the corbel)

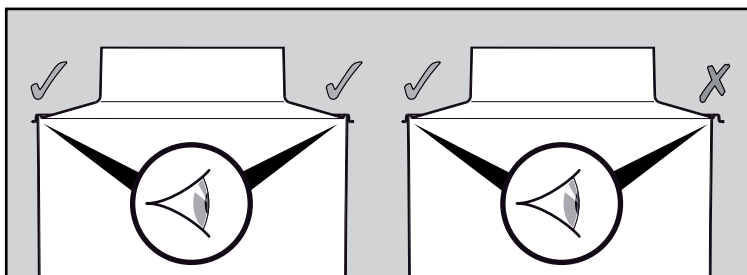
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- 19** Abrade and wipe with a degreasing solvent the chamber or extension top edge/wall and the corbel groove.



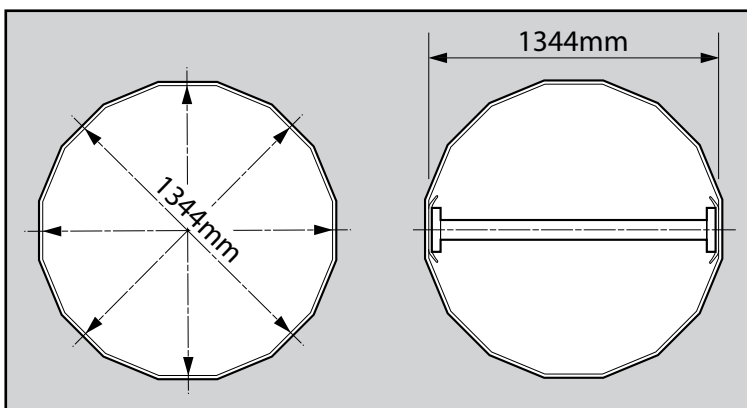
- 20** Dry fit the corbel on the Chamber to ensure it fits - push corbel groove onto Chamber wall. If it does not fit, pipework may have distorted the Chamber wall shape.



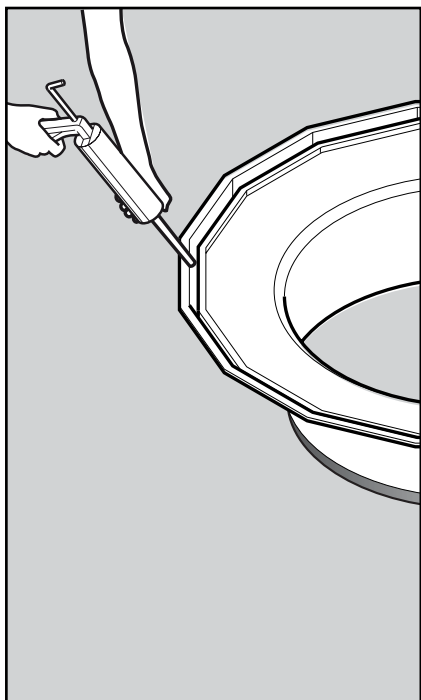
- 21** Measure distance between opposite walls, this should be 1344mm. If less than this you will need to brace out the Chamber.

Using wooden batons (1344mm \pm 5mm long) with timber spreader plates (150 x 150) to spread the load, brace out the Chamber to the correct size.

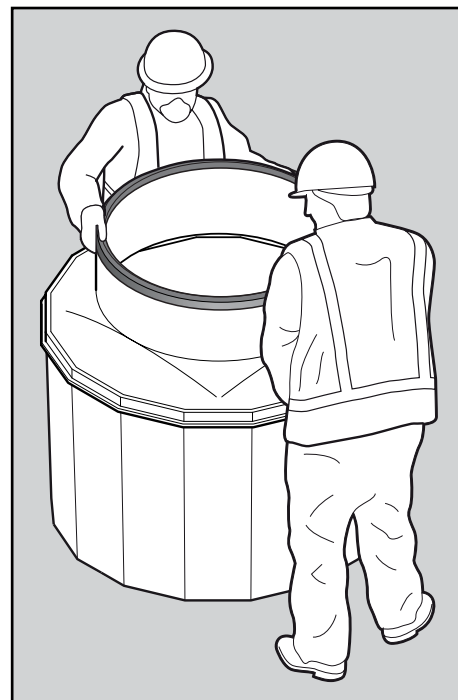
Repeat this process on all walls to get the correct shape.



- 22** Apply 2 tubes of soudaflex 4 sealant in the groove of the corbel. Sealant should fill 1/2 the groove.



- 23** Place the corbel on the Chamber using 2 people and push it into position.



INSTALLATION INSTRUCTIONS

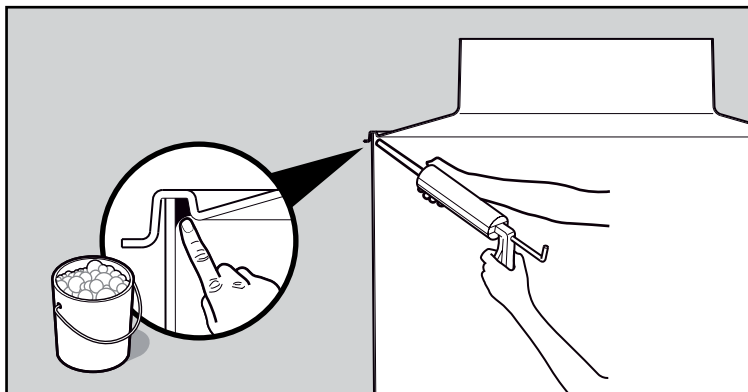
(Bonding the corbel)

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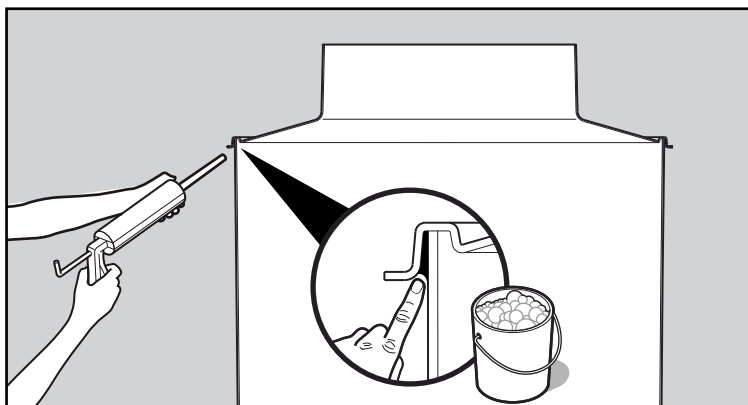
- 24** Seal around the inside edge of the corbel joint from inside the Chamber. Smooth off the sealant with soapy water.

Use 1.5 tubes of soudaflex 4 sealant.



- 25** Seal around the outside joint and smooth off sealant with soapy water.

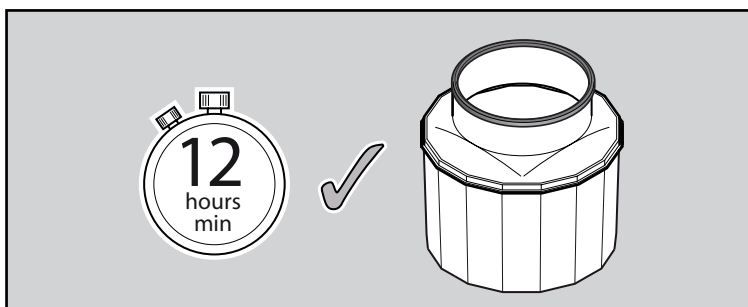
Use 1.5 tubes of 4 sealant.



(Performing Corbel Vacuum Test)

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

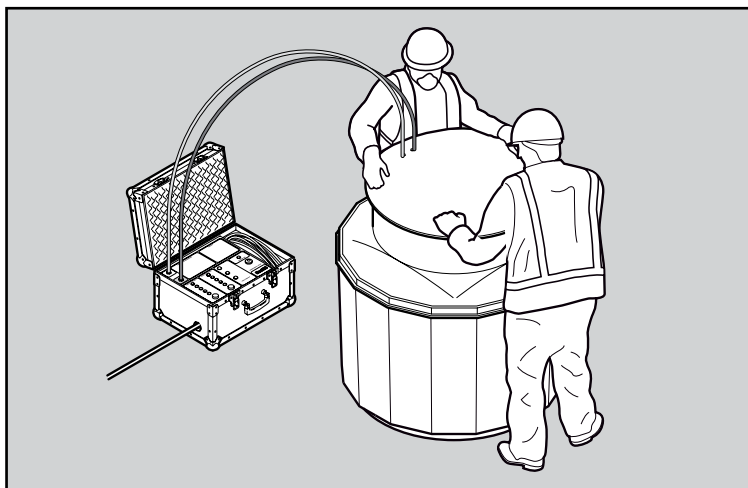
Do not disturb the Chamber during this time.



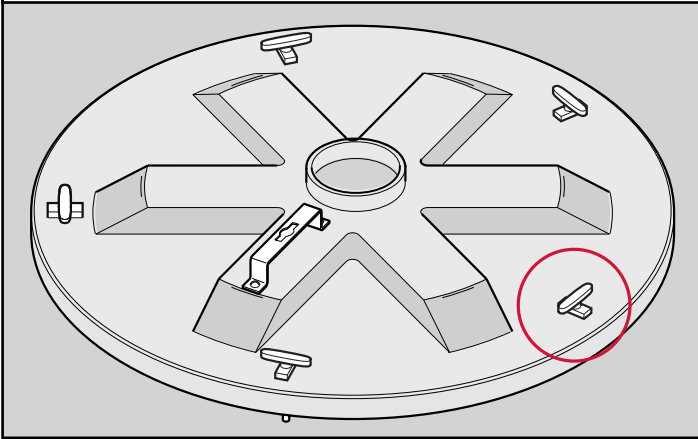
- 27** Ensure all pipework and electrical entries have been completed before vacuum testing, this is a final test for all penetrations in the Chamber.

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

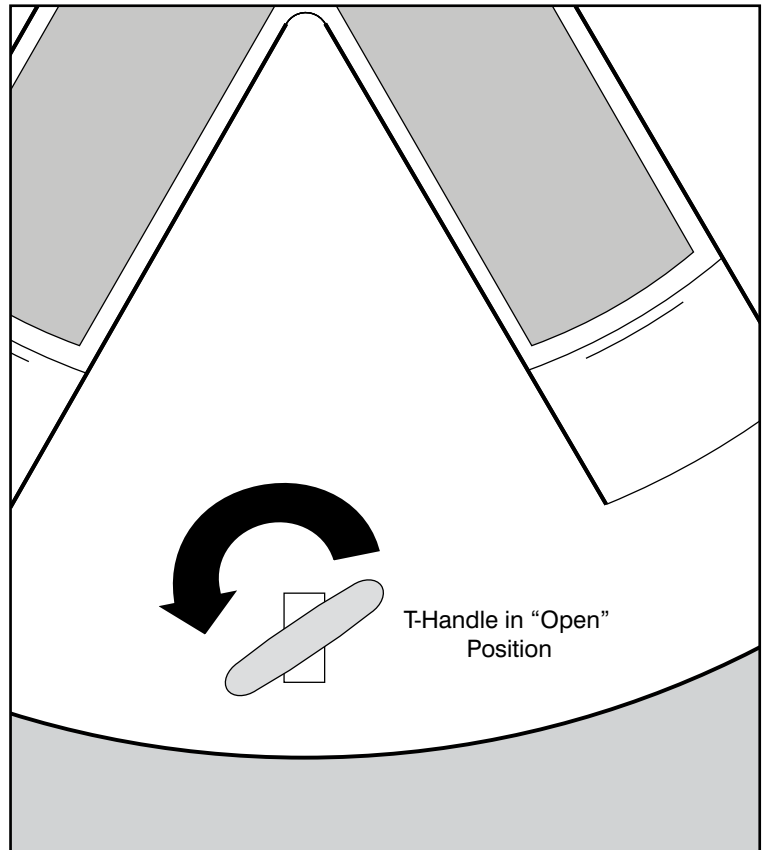
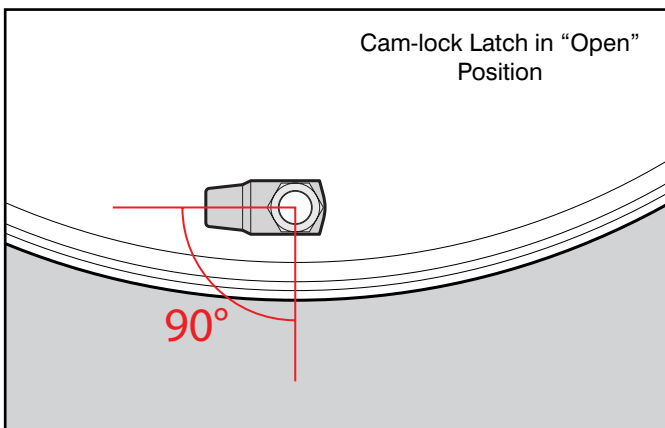
Refer to vacuum testing instructions for correct method.



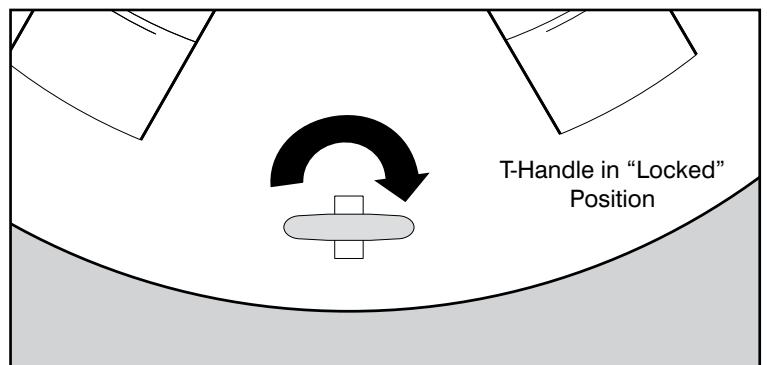
Installation of Watertight Lids: Once the chambers are properly installed and tested, the watertight lids should be installed to ensure that the lids fit properly onto the stainless steel retaining rings.



- 28** 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).



- 29** 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.



REMOVE WATERTIGHT LIDS FOR THE NEXT OPERATION

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 1756 799 773

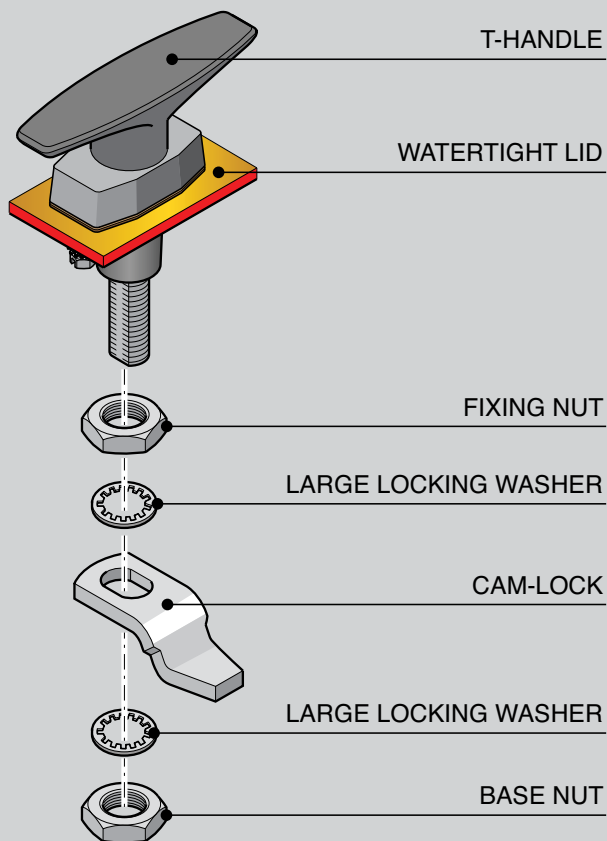
INSTALLATION INSTRUCTIONS

(Adjusting the Cam-lock Height)

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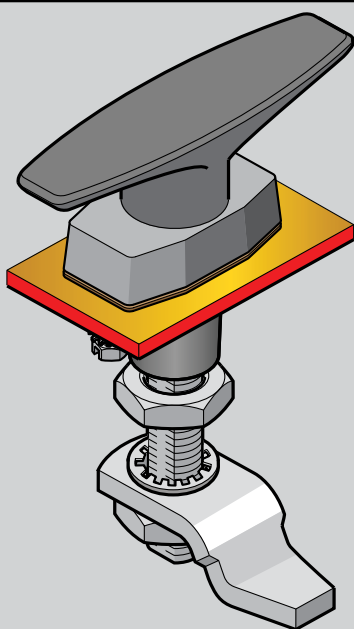
30



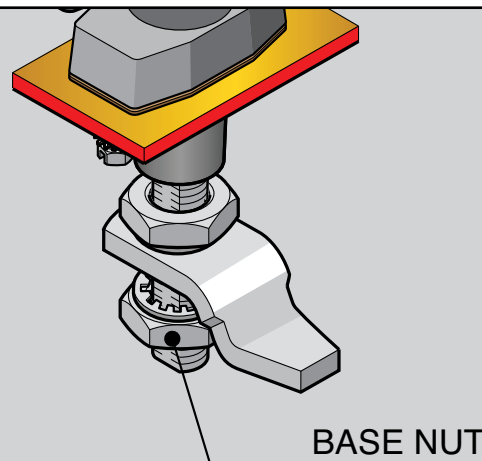
The T-handle mechanism consists of the above items.

31a

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 32.



31

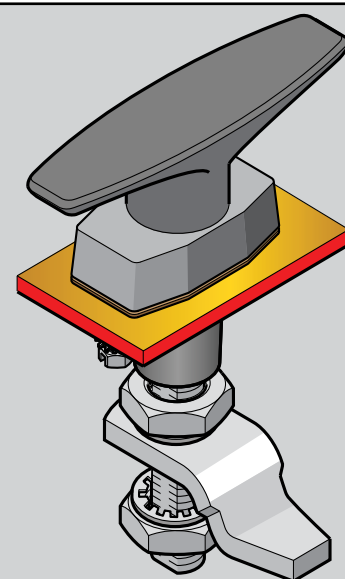


If the T-handle is not fully engaging it means the cam-lock needs to be lowered. Loosen the base nut to a lower position and go to step 31a.

If the lid 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 31b.

31b

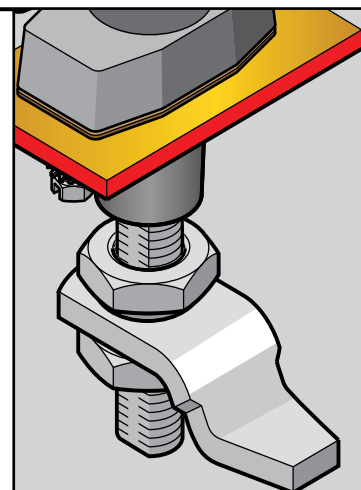
Pull the cam-lock down to rest onto the base nut and raise the fixing nut. Push the cam-lock up to the fixing nut and tighten the base nut until the cam-lock is secure as per step 54.



32

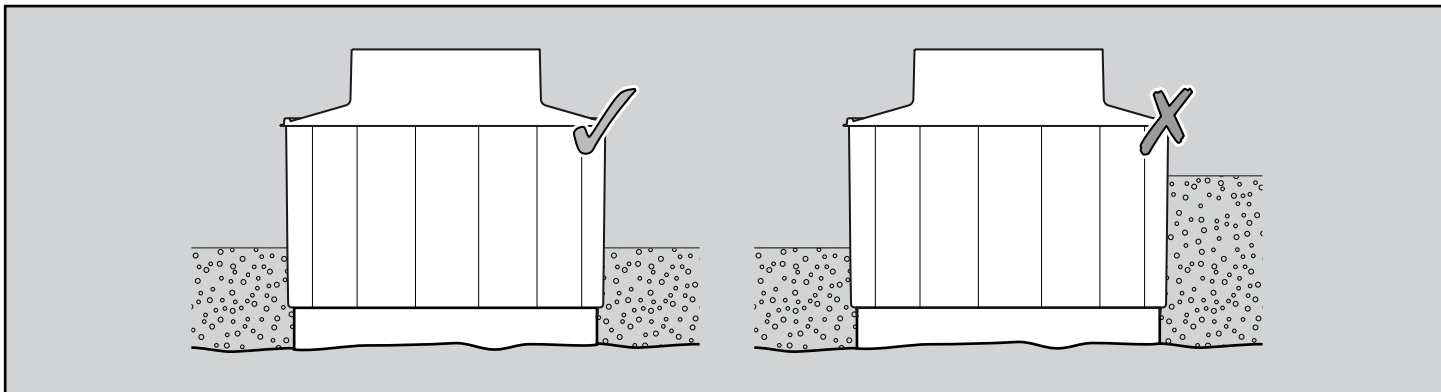
Once the cam-lock is secure, refit the watertight spill platform as per steps 28 and 29.

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



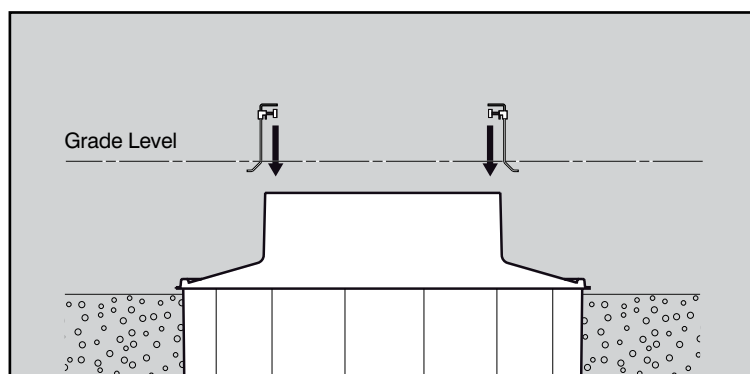
NOTE : If the T-handle cannot be fully engaged or if the lid is not compressing the gasket tightly against the stainless steel ring contact Fibrelite technical support at + 44 (0)1756 799773

- 33** Once the corbel test has been performed with a PASS result, the area around the Chamber can be carefully backfilled with peagravel or sand. Back-fill equally around the Chamber in layers to prevent damage or deformation.



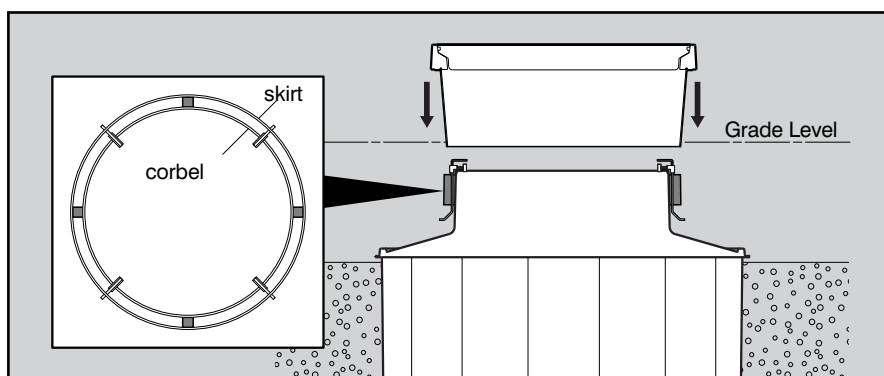
(Adjusting the Skirt & Frame to Grade Level)

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

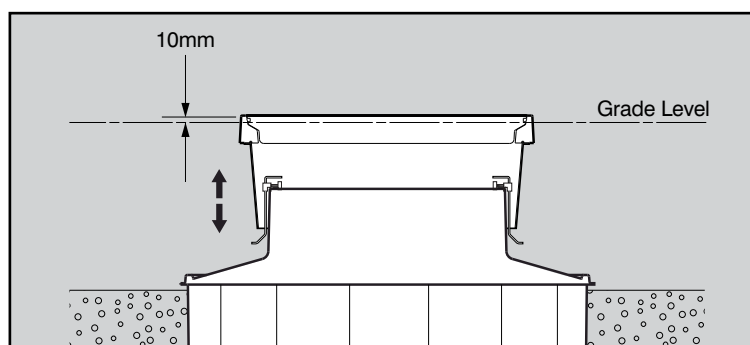


- 35** Put the skirt and frame on the hangers.

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 internal lid fouling.



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

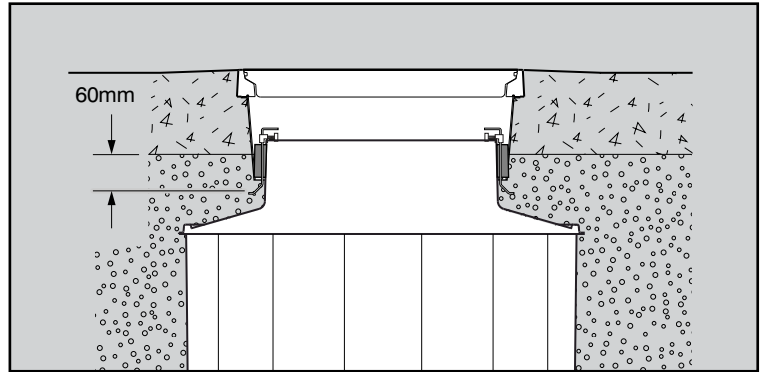


INSTALLATION INSTRUCTIONS

(Concreting)

- 37** Ensure the void between corbel and skirt is kept free from concrete and a depth of 60mm overlap minimum is maintained.

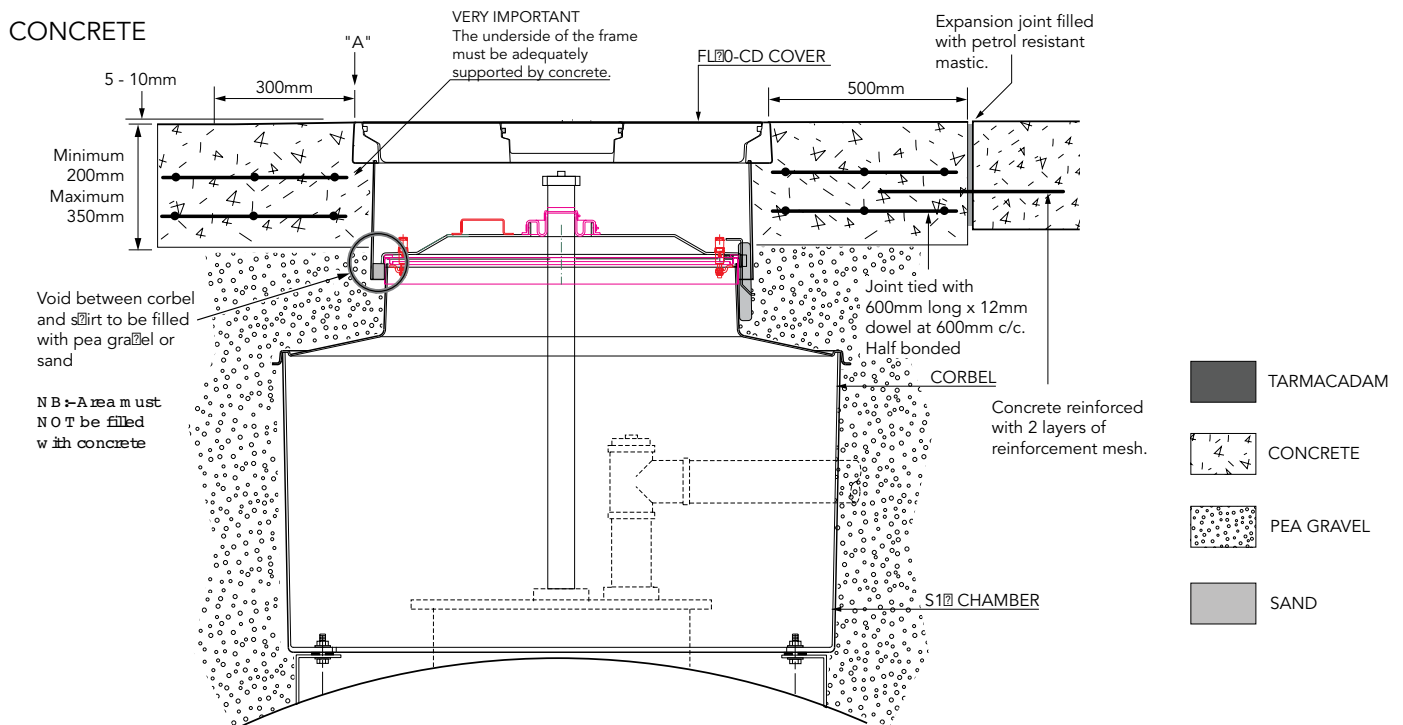
Ensure foam spacers are in position to locate the skirt centrally around the corbel.



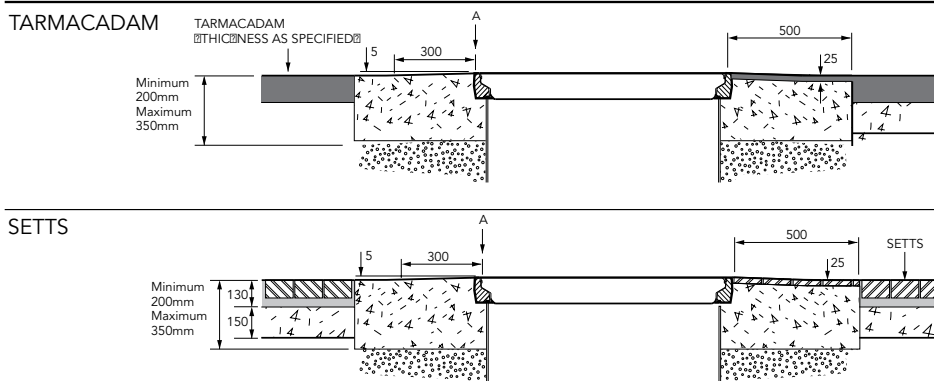
- 38** Complete backfilling to appropriate level. Frame must be supported by a minimum depth of 200mm of concrete. Concrete ties must be inserted as close to the frame as possible. Minimum block of 500mm square around the frame. Joint must be tied as per diagram. Continuous pour preferred if possible.

! VERY IMPORTANT !
OUTER EDGE "A" OF FRAME SET 5 - 10MM ABOVE GENERAL FORECOURT AREA WITH CONCRETE RAMPED AWAY OVER 300MM.

TYPICAL INSTALLATION

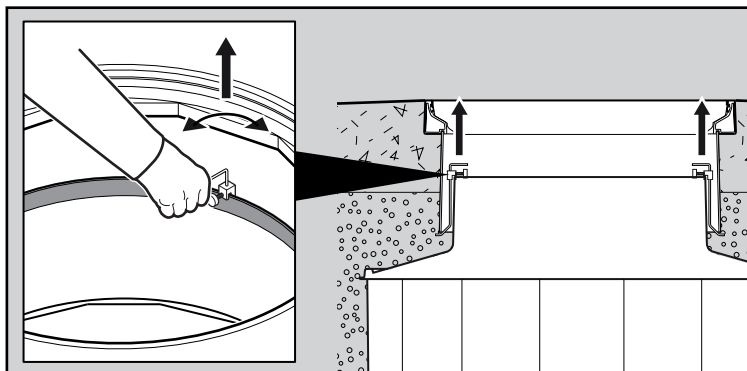


ALTERNATIVE INSTALLATION ADVICE



- 39** 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. Remove the foam spacers.

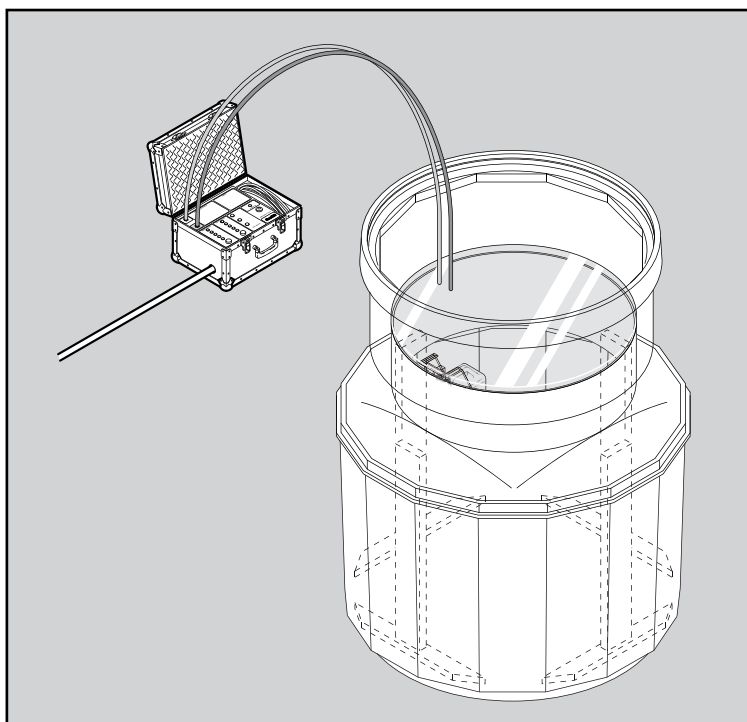
Complete other third party equipment installation inside the Chamber.



- 40** Optional vacuum test on corbel.

Once completed a final test can be performed. Ensure the corbel is supported from below by wooden batons (due to extra weight of concrete and backfill).

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



- 41** Now fit the watertight lids as per stages 28 and 29.

