

INSTALLATION INSTRUCTIONS

S15CR-390-WT and S15CR-3100-WT Tank Sump Systems

FIBRELITE

PART OF OPW A DOVER COMPANY

FL90 or FL100
Flat Sealed Cover

FL90 or FL100
Frame

Skirt

Watertight Platform

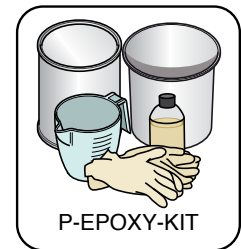
Hangers (x 4)

Foam Spacers (x 4)

Stainless Steel Ring
(factory installed on corbel)

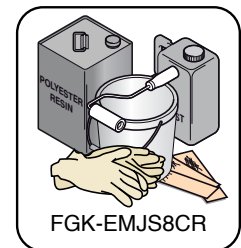
Corbel Unit

Tank Sump



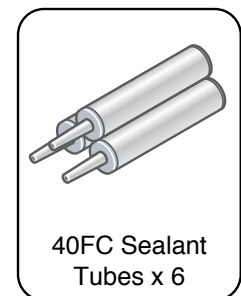
P-EPOXY-KIT

PAREX EPOXY BONDING
KIT FOR TANK SUMP /
COLLAR. KIT CONSISTS
OF 2LTR OF EPOXY, 930g
TUB RESIN, 200g
HARDNEE, 1 MIXING
TUB, JUG, GLOVES



FGK-EMJS8CR

FIBREGLASS KIT FOR
BONDING EMJS8CR TANK
SUMP TO TANK COLLAR
RING



40FC Sealant
Tubes x 6

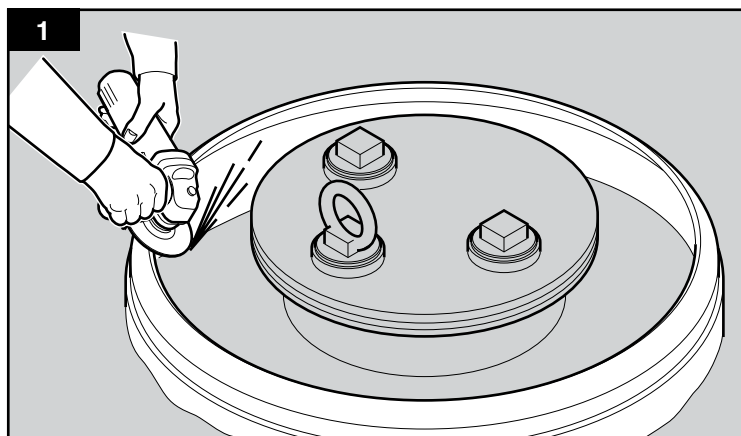
INSTALLATION INSTRUCTIONS

(Sump Installation)

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NB: - Correct preparation is essential!

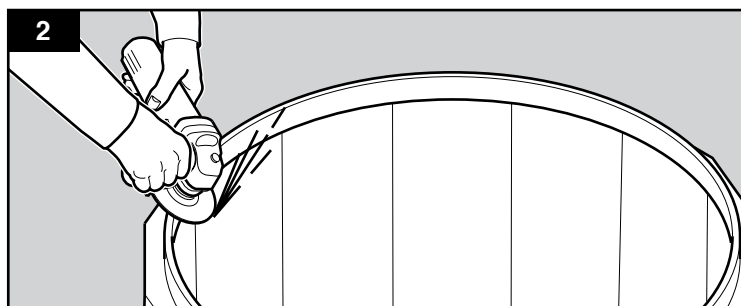
Failure to correctly prepare the surface prior to bonding may result in a “WEAK” joint and subsequent failure.



The surface of the tank collar must be prepared properly prior to bonding – use an angle grinder to expose the fiberglass surface to ensure good bonding. (or sand paper can be used by hand)



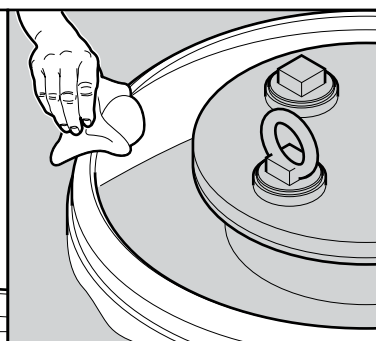
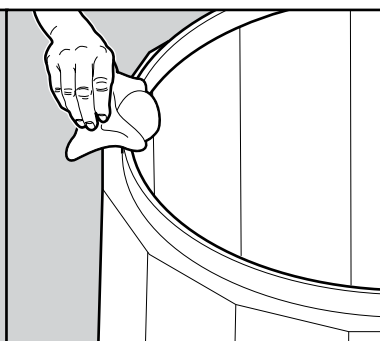
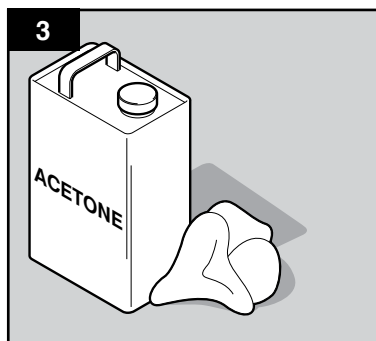
Do not grind the tank collar with an electric grinder unless all appropriate safety procedures for open tank pits have been followed. If there is any risk that gasoline vapours may be present in the tank pit, use only explosion-proof or air-powered tools or sand the collar by hand.



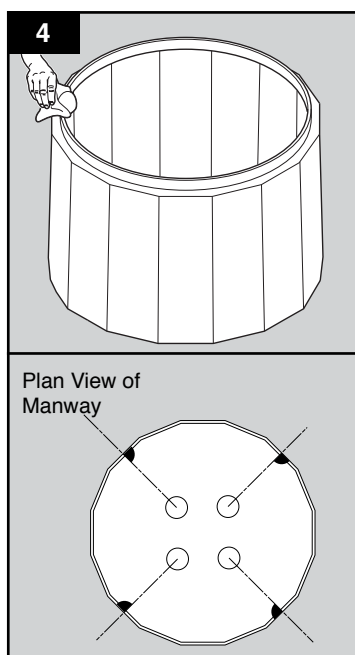
The surface of the tank sump collar must also be properly prepared prior to bonding.

Sand both the internal and external sides of the collar.

This can also be sanded by hand.
(Sumps supplied to ExxonMobil sites are pre-sanded)

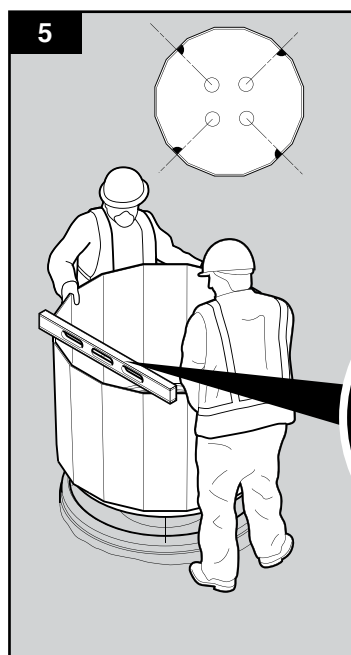


All abraded surfaces must be wiped clean with acetone immediately prior to bonding to ensure that no dust or dirt is present on the surfaces.



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

NB:
When installing the sump and immediately prior to bonding it is critical to ensure that the sump facets align perpendicular to the pipework exit points. This will ensure that the pipe entry seals are not unduly stressed.



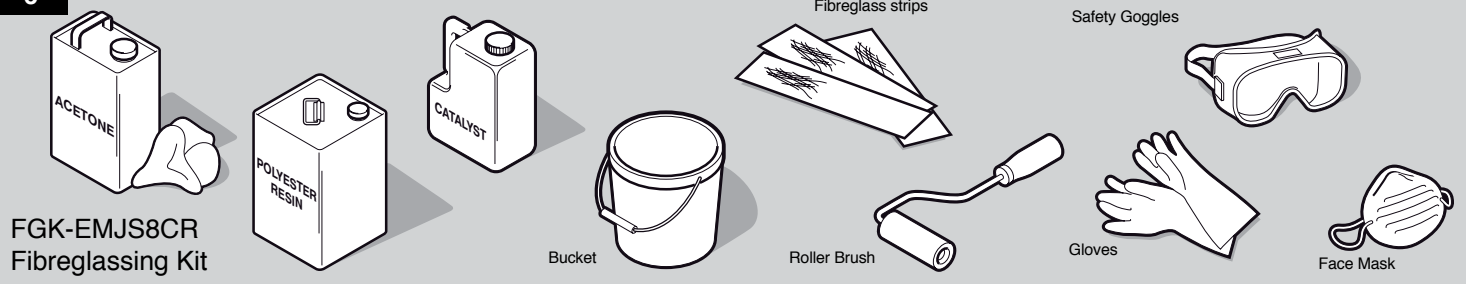
Use a level to properly set the tank sump in place – make sure the sump will be level to finished grade.

INSTALLATION INSTRUCTIONS

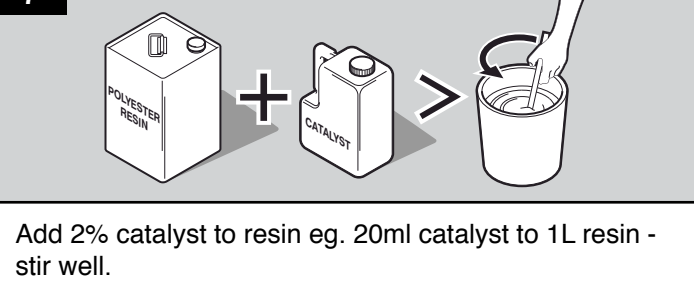
(Laminating the sump to the tank collar)

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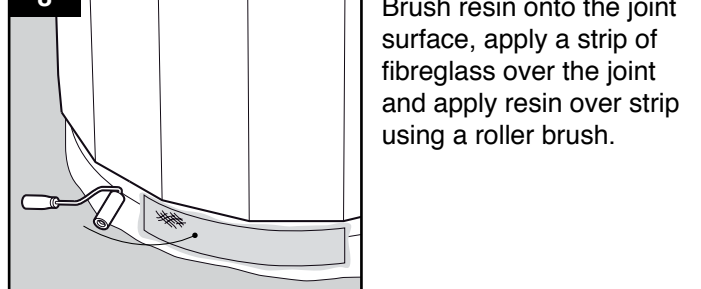
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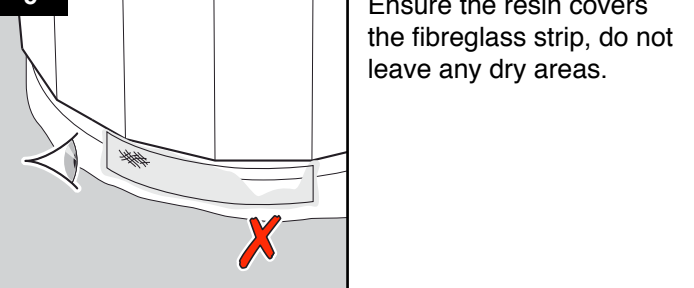
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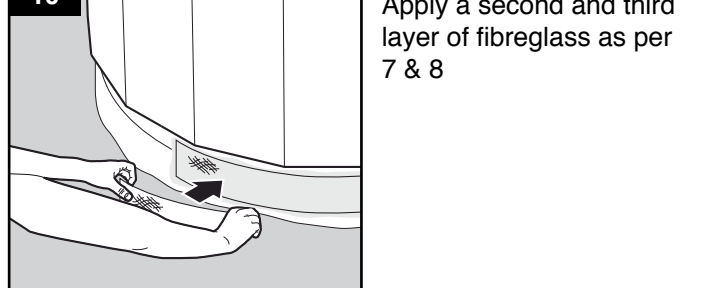
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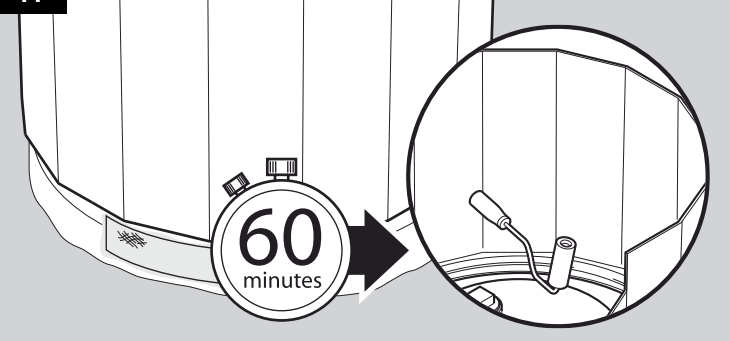
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10

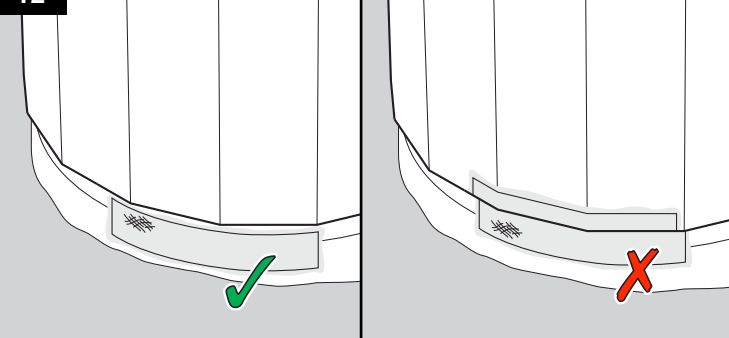


11



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

12





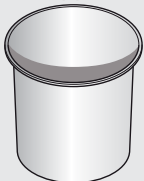



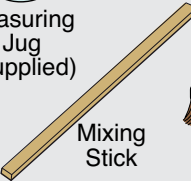









Warning – Do **NOT** cut fibreglass strips too large. If the base of the sump is laminated too high, it may distort the shape of the sump when it dries.

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

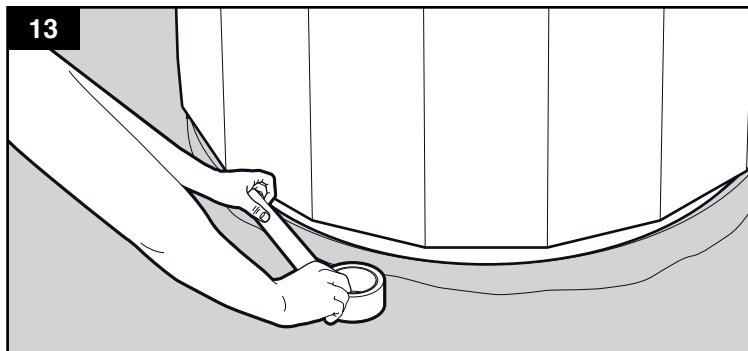
INSTALLATION INSTRUCTIONS

(P-EPOXY-KIT Epoxy Grout Mixing and Application)

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Pack	Tools	Health & Safety
Epoxy Injection Grout Unit (Combined equals 2 litres)  x2  x2 <p>Base Component (Epoxy Resin)</p> <p>Hardener Component</p>	<p>6L Tub (Supplied)</p>  <p>Acetone</p>  <p>Sandpaper</p>  <p>Measuring Jug (Supplied)</p>  <p>Mixing Stick</p>  <p>Brush</p> 	 <p>Chemically Resistant Gloves</p>  <p>Chemically Resistant Eye Protection</p>  <p>Well Ventilated</p>  <p>Dry</p>  <p>Shaded</p>  <p>Incase of inadequate ventilation use suitable respiratory equipment</p> <p>Refer to the Health and Safety Data Sheets for further details</p> 
Storage <p>For best results store at room temperature</p>  <p>20°C 68°F</p>		

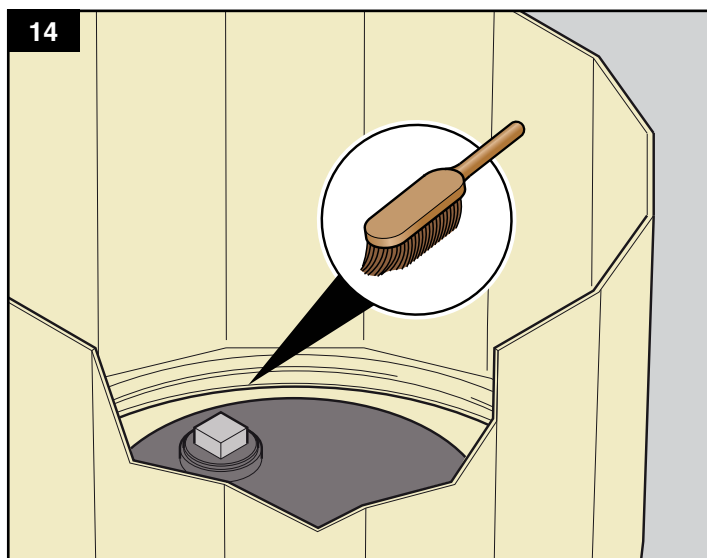
13



NB. If the outside joint of the sump/tank collar has been laminated, there is no need to do this.

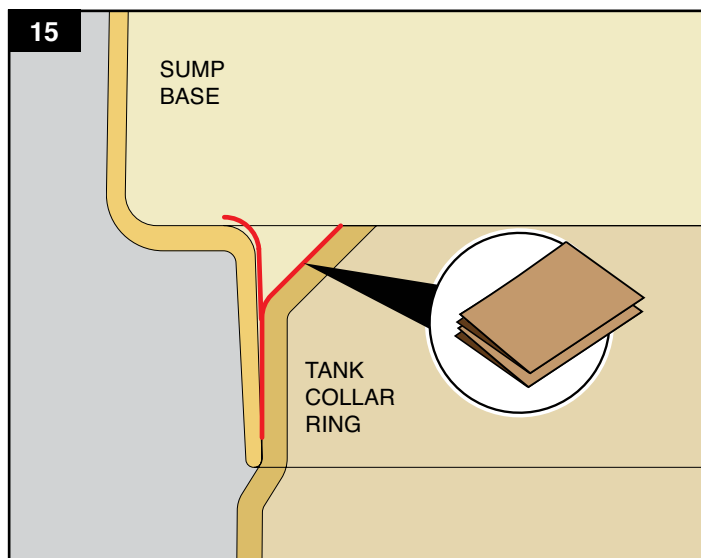
Apply duct tape at the seam where the base of the sump meets the collar to prevent the bonder from leaking through the seam.

14



Clear the target area of debris.

15



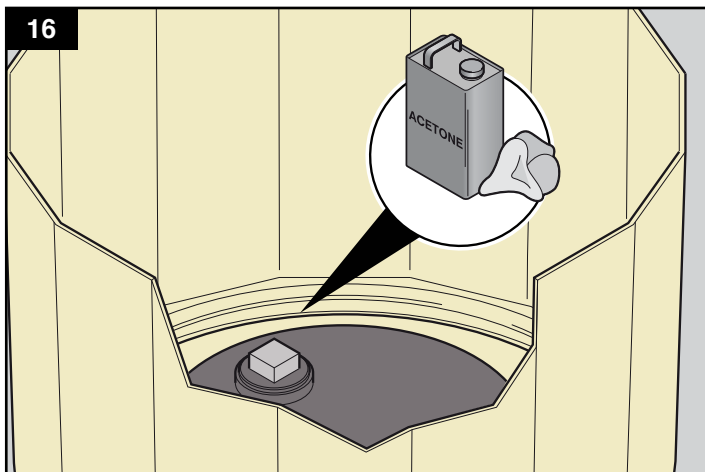
Abrade 50mm (2") either side of the collar to sump joint as shown.

INSTALLATION INSTRUCTIONS

(Epoxy Grout Mixing and Application)

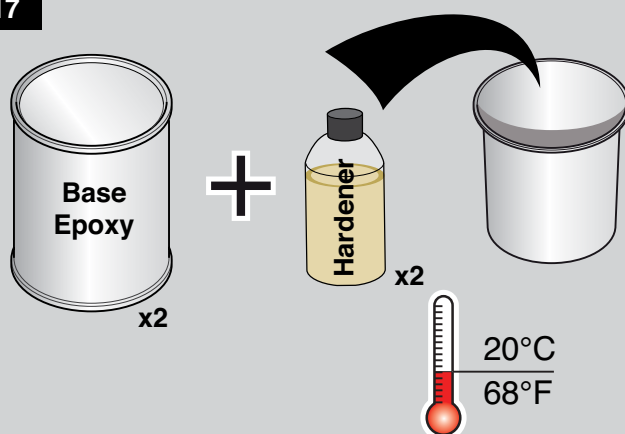
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16



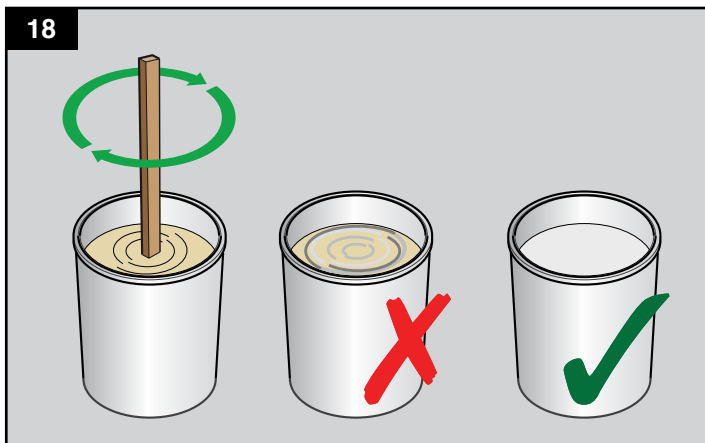
Degrease abraded area with acetone.

17



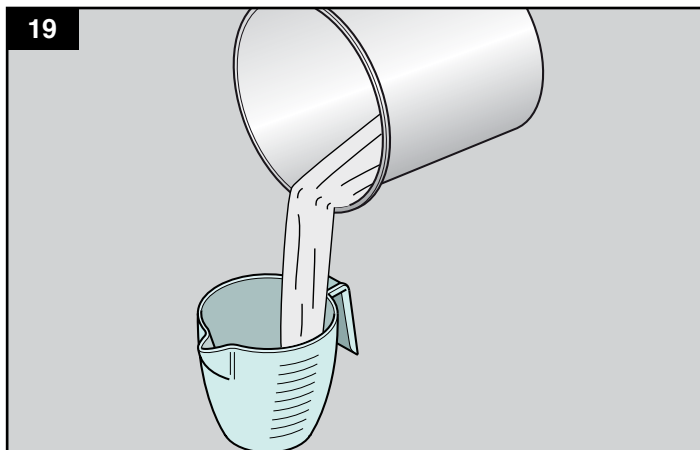
Firstly pour the resin base and then the hardener into the tub. Mix in well ventilated area. Incase of inadequate ventilation use suitable respiratory equipment

18



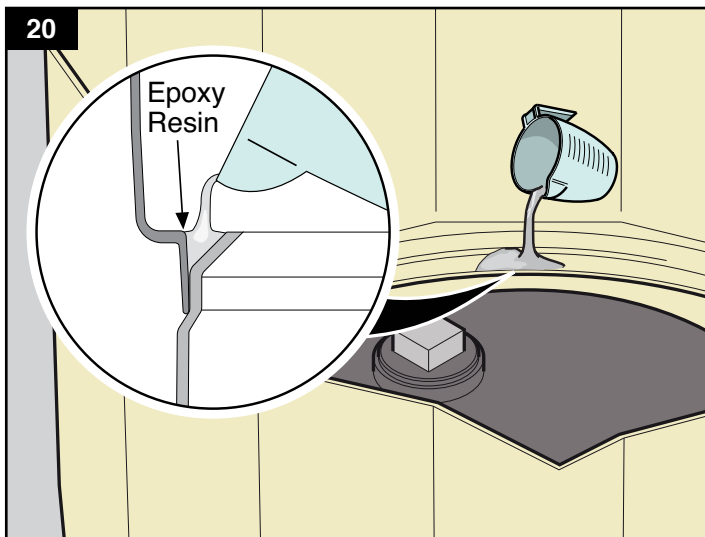
Using a stick or spatula gently mix together until clear and homogenous. Mix in well ventilated area. Incase of inadequate ventilation use suitable respiratory equipment.

19



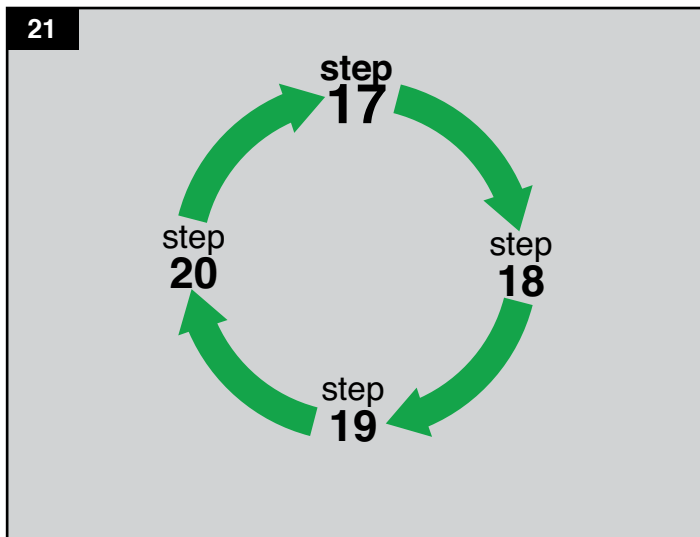
Pour the mix into the measuring jug and use immediately.

20



Carefully pour into the target area.

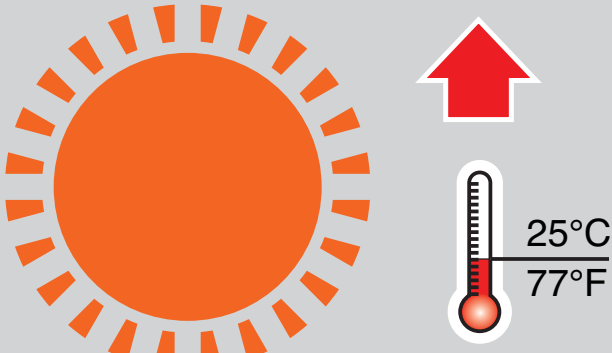
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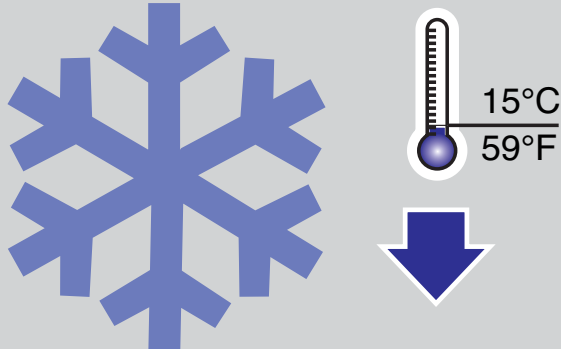
Repeat steps 17 - 20 immediately until joint is filled.

Curing/Setting Time

The curing/setting time depends largely on the ambient temperature. The higher the temperature the shorter the curing time, whereas a lower temperature will increase the curing time. The recommended mixing temperature is 20°C (68°F).



In hot temperatures above 25°C (77°F) the resin may be cooled by way of refrigeration or placed in an air condition space and so on to lower the temperature prior to mixing.



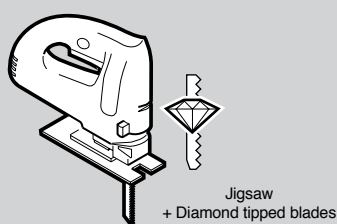
In cold temperatures below 15°C (59°F) the resin may be warmed by being placed in a heated space for example to raise the temperature prior to mixing.

Please note that this is a guide. For full information refer to the Technical & Health & Safety sheets provided.

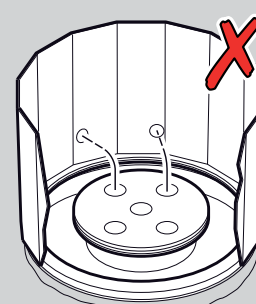
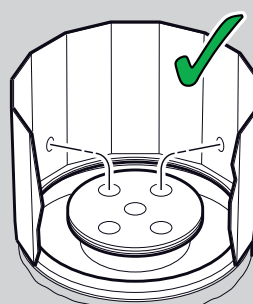
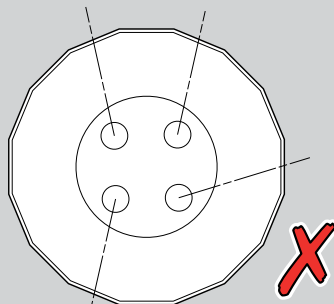
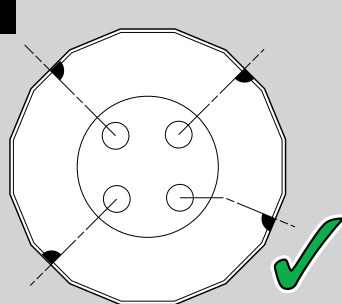
INSTALLATION INSTRUCTIONS

(Pipework and Entry Seal Kits)

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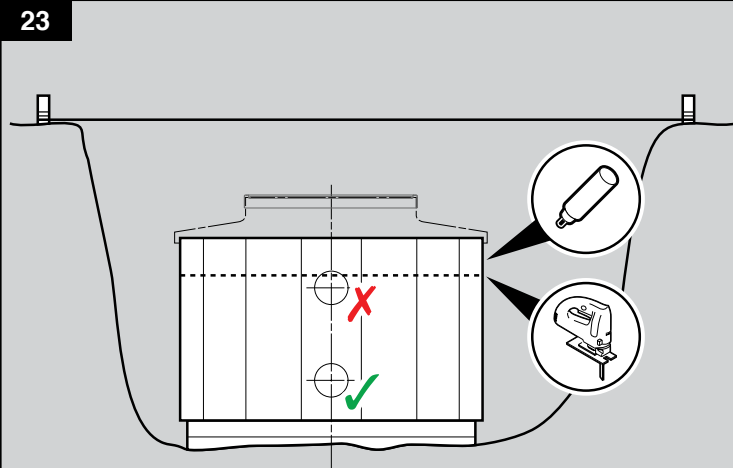


22



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.

23



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

Check to ensure you have the necessary minimum clearance required from the top of the sump to the centre line of the pipework/pipe entry kits.

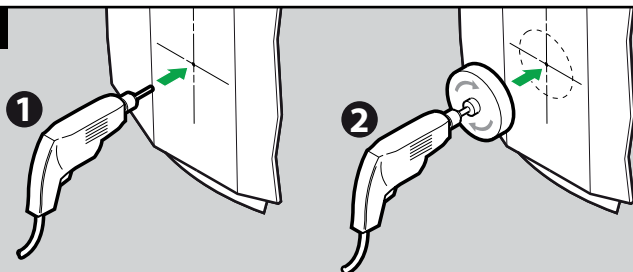
Standard Entry Kit = 145mm

Large Entry Kit = 170mm

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

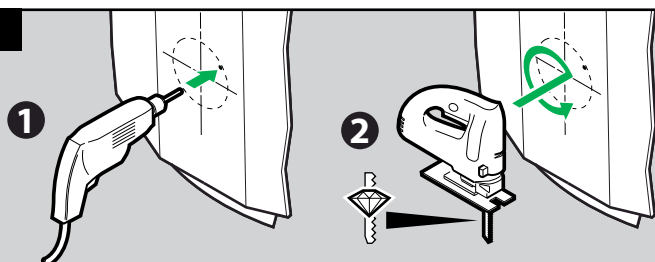
Refer to measurement chart on page 9.

24



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.

25



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 sump has been vacuum tested.

INSTALLATION INSTRUCTIONS

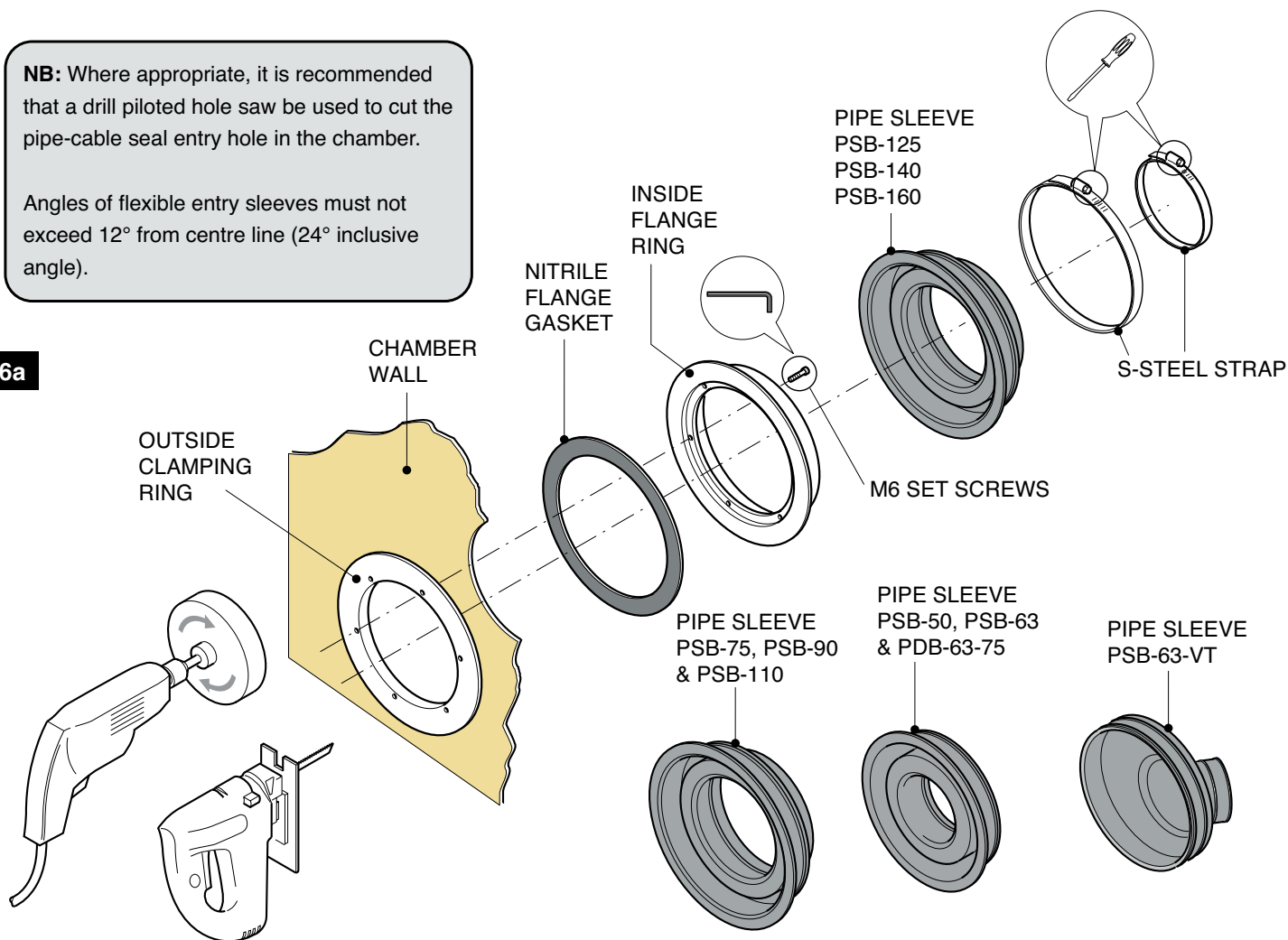
(Pipe Sealkits Installation)

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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.

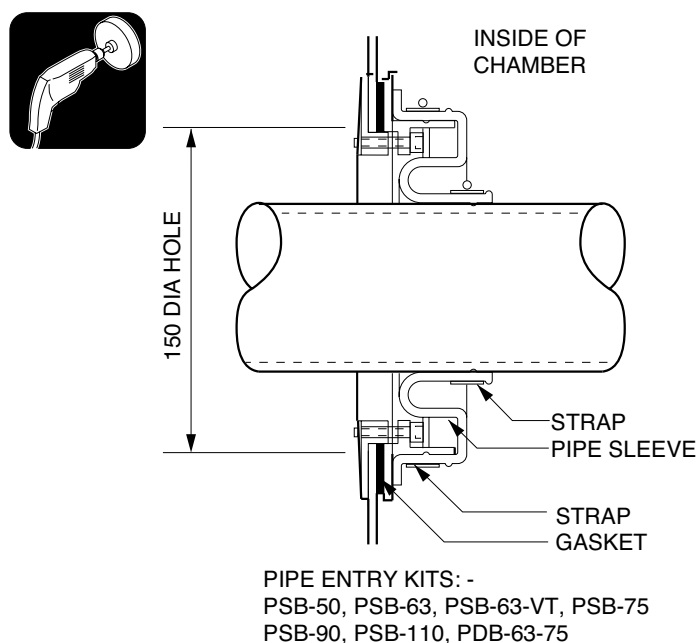
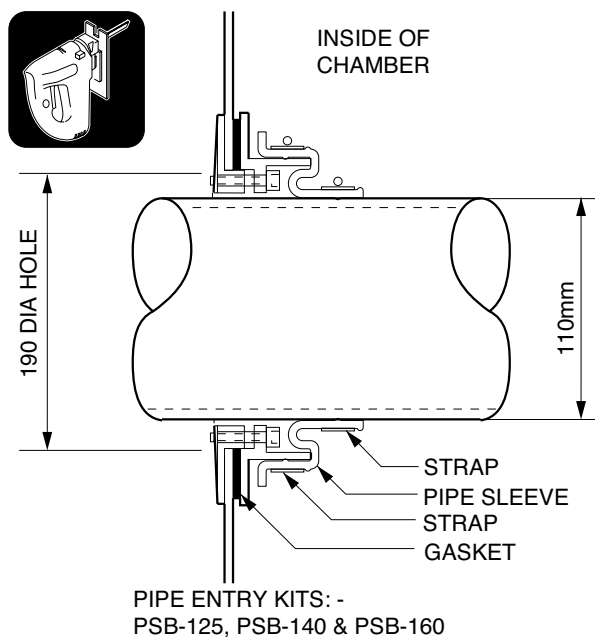
Angles of flexible entry sleeves must not exceed 12° from centre line (24° inclusive angle).

26a



DRILL AND HOLE SAW
ATTACHMENT OR JIGSAW

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



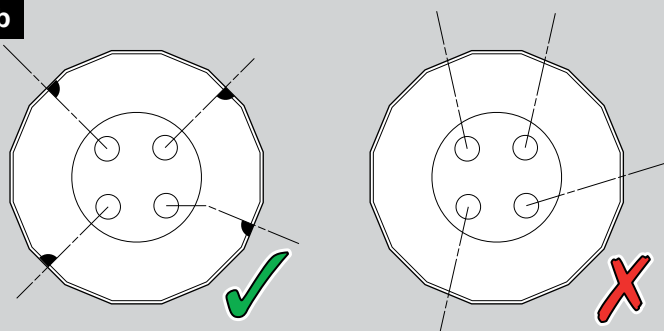
The exit position of the pipework through the chamber wall must be as close as possible to 90°. The pipe kit should be fitted so that the pipework is centrally positioned to the seal. When backfilling ensure that the pipework is not disturbed from this central position.

INSTALLATION INSTRUCTIONS

(Conduit Entry Seal Kit Installation Guide)

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26b



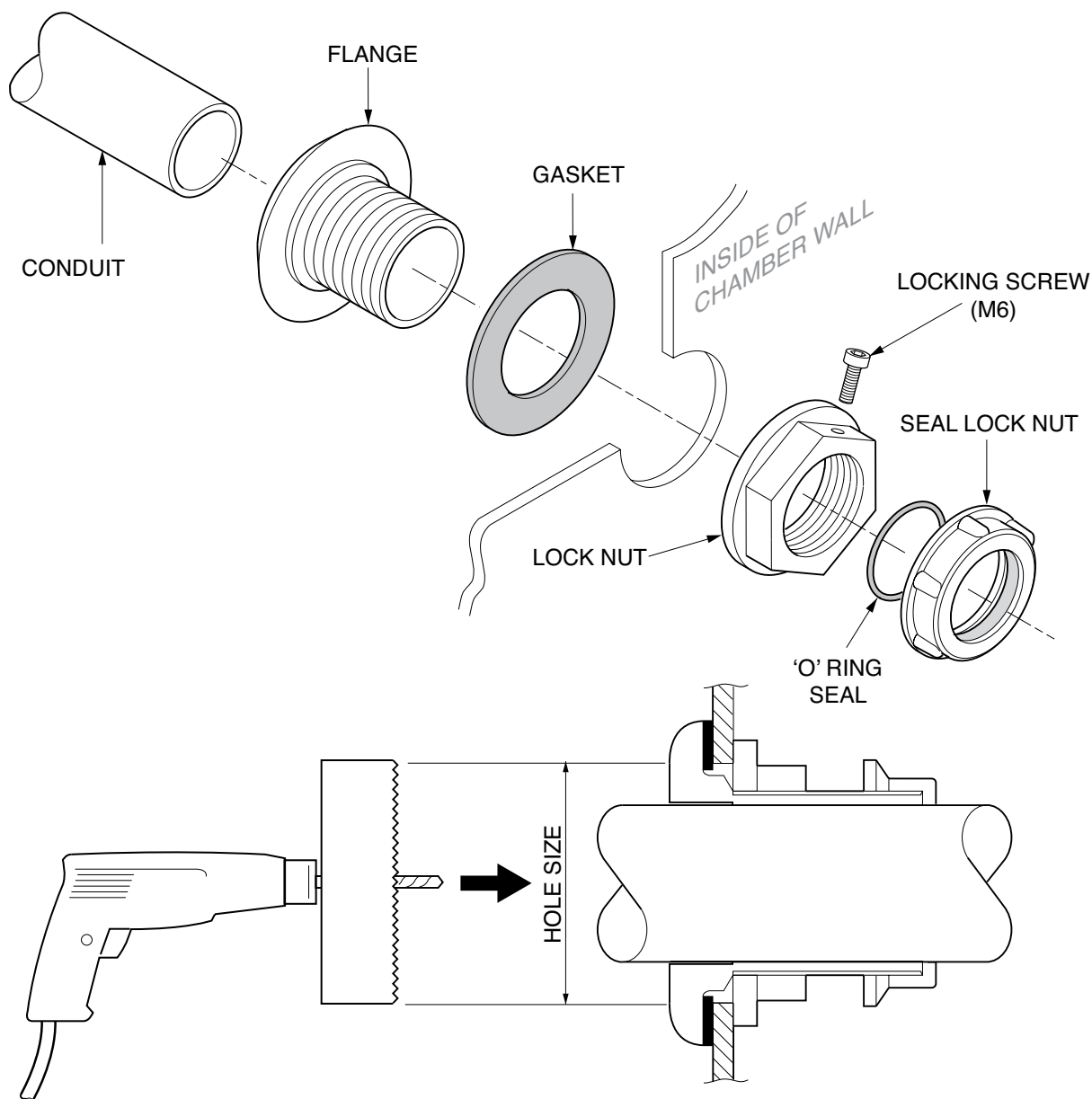
PEC KITS

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

Conduit must be installed at 90° 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 sump wall and the conduit must enter the entry kit perfectly aligned. When backfilling ensure the conduit is not disturbed.

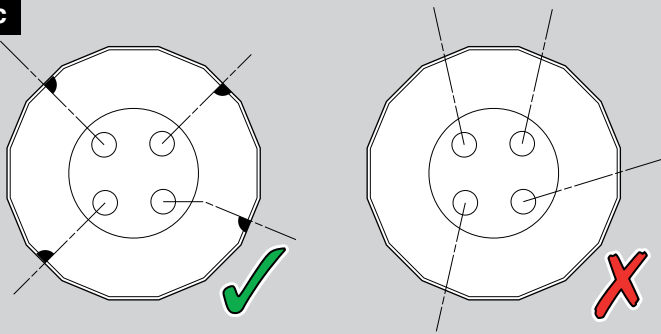
ENTRY KIT	HOLE SIZE
PEC-27	Ø51mm
PEC-32	Ø51mm
PEC-33	Ø60mm
PEC-50	Ø73mm

INSTALLATION INSTRUCTIONS

(Conduit Entry Seal Kit Installation Guide)

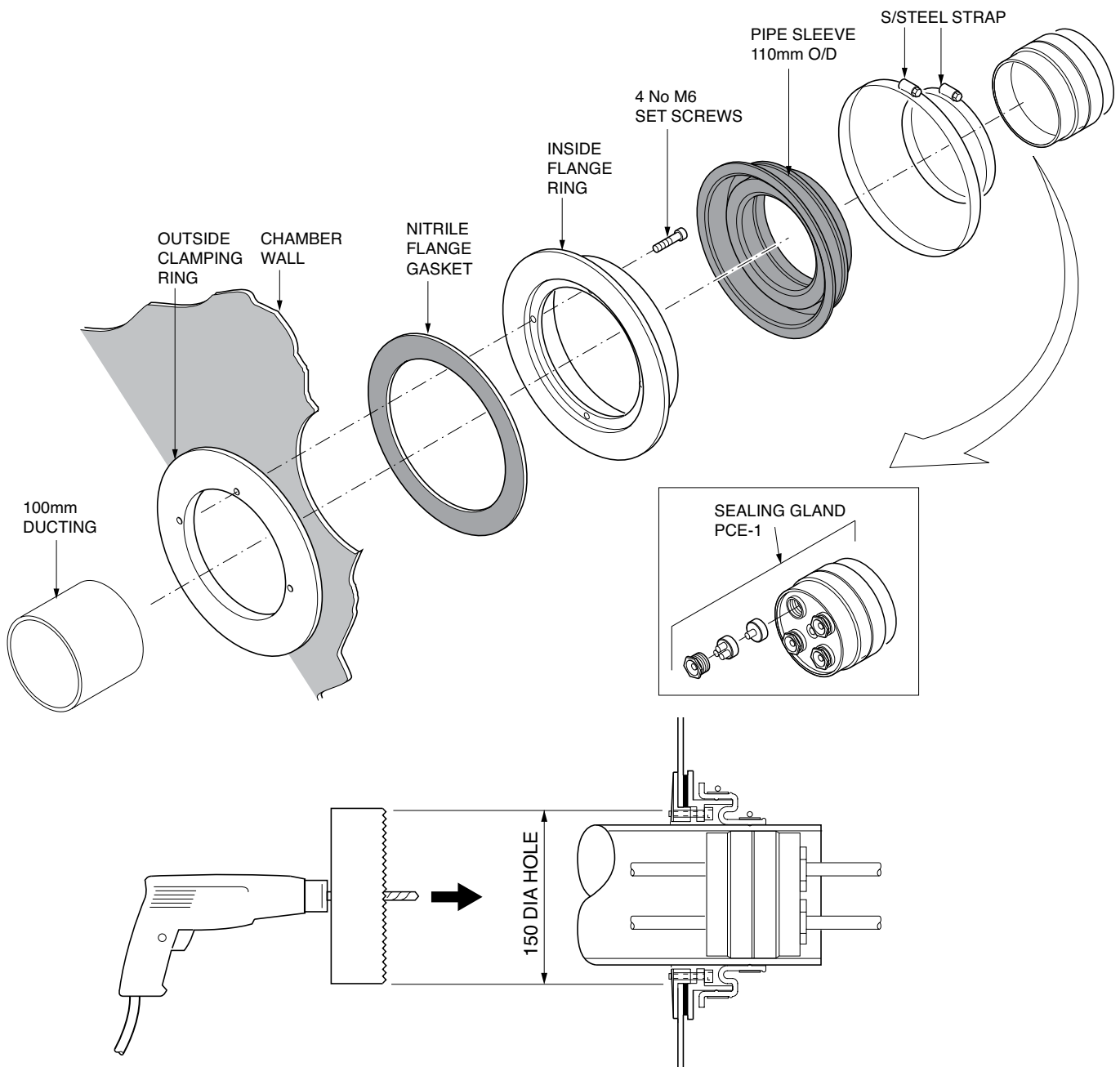
FIBRELITE 
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26c



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 sump wall and the conduit must enter the entry kit perfectly aligned. When backfilling ensure the conduit is not disturbed.

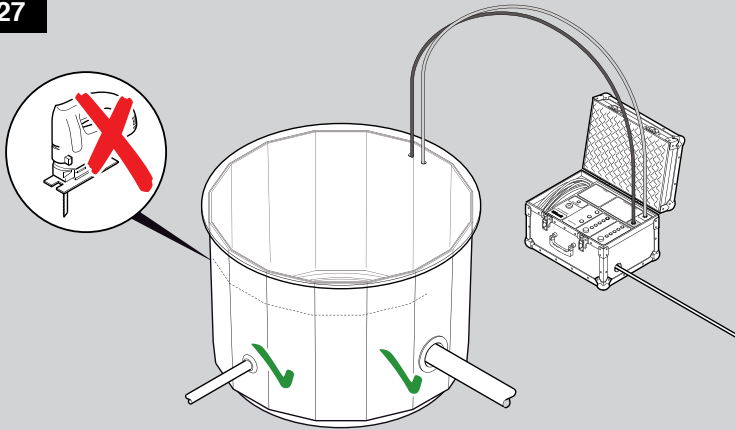
INSTALLATION INSTRUCTIONS

(Achieving the Correct Height)

FIBRELITE

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27



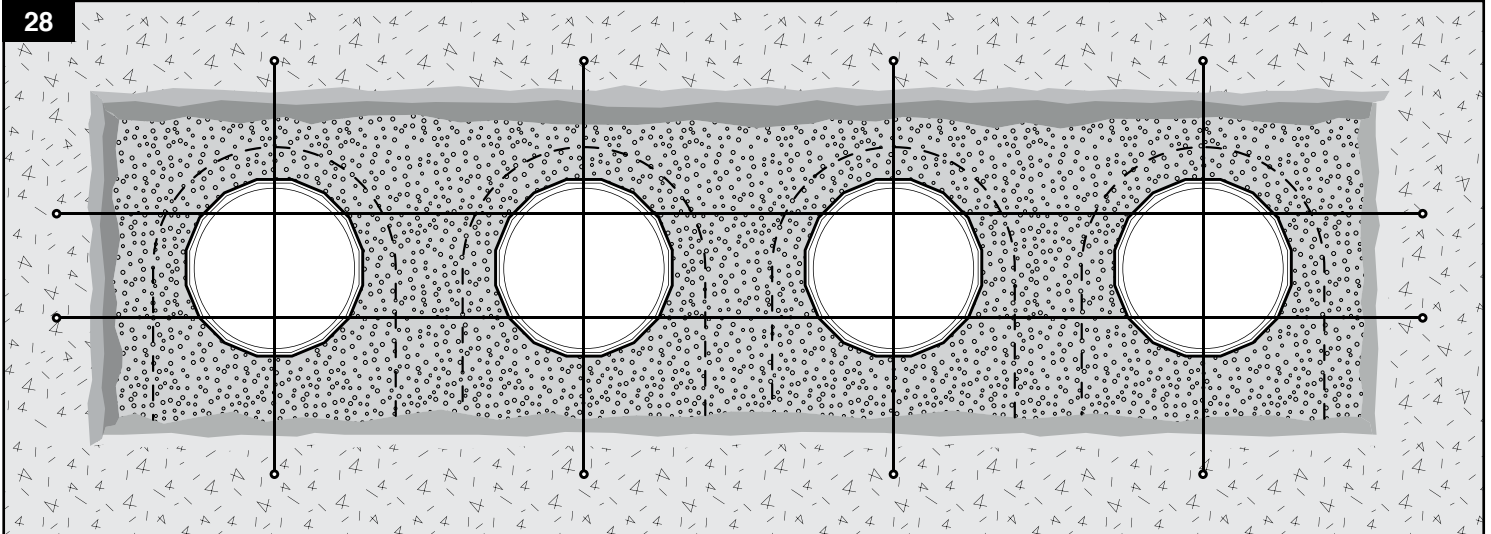
After penetrations have been fitted, ensure all connections on the manway lid are sealed.

Refer to Vacuum test instructions and perform a vacuum test.

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

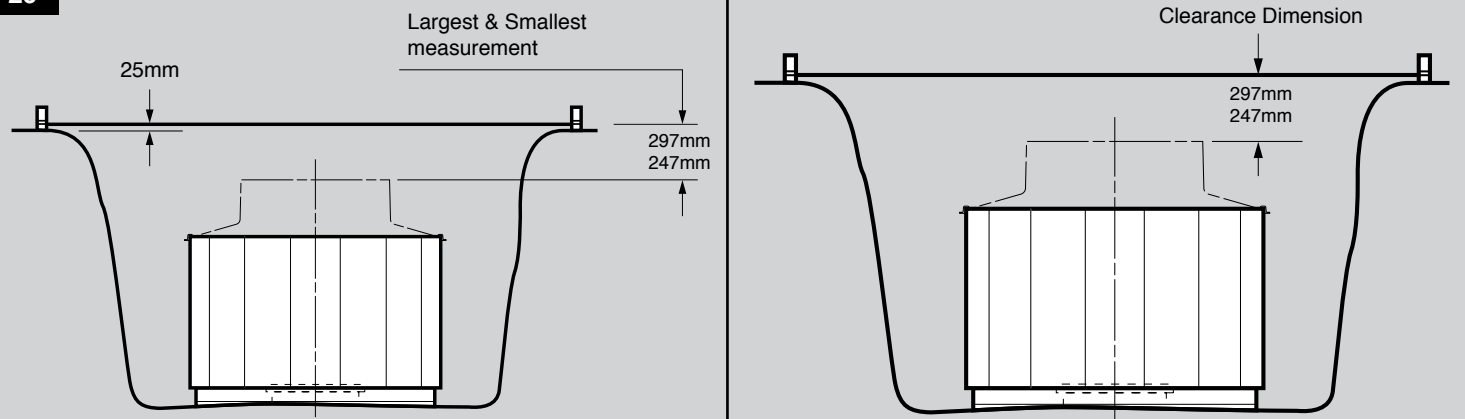
Note: Sump to be tested to a depth setting of 1.2 meters/12 kPa.

28



Fix string lines 25mm above grade level across the sump lengths and widths of the tank farm to highlight any falls.

29



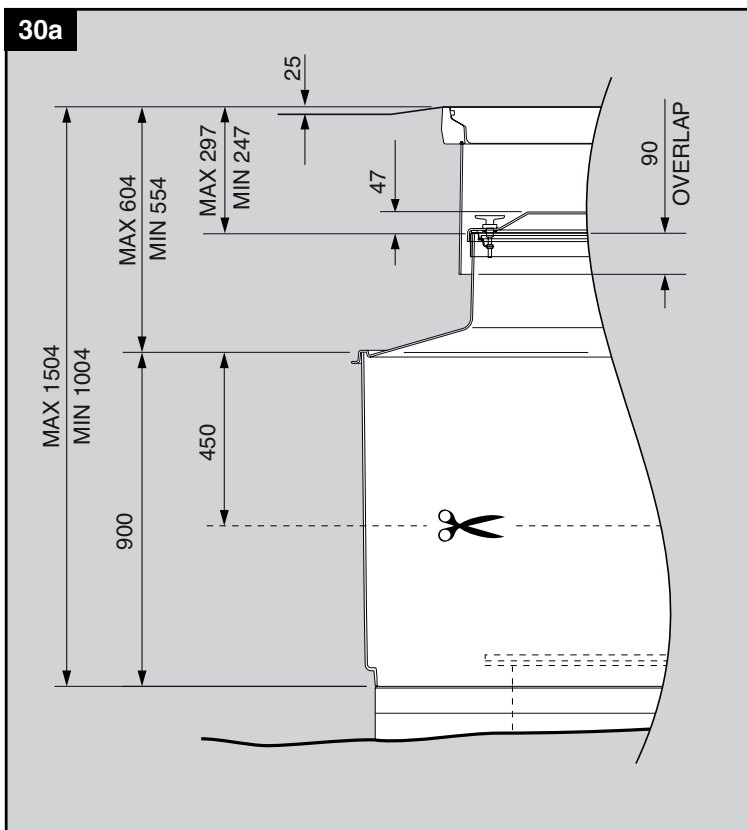
Place the corbel onto the sump (only 'dry fit' the corbel do not bond at this stage). Check the measurement from the top of the corbel to the string line, which is set 25mm above the general grade level. Check all sides of the sump and select the largest and smallest measurement to take account of falls across the forecourt.

INSTALLATION INSTRUCTIONS

(Achieving the Correct Height)

S15-390-WT Systems

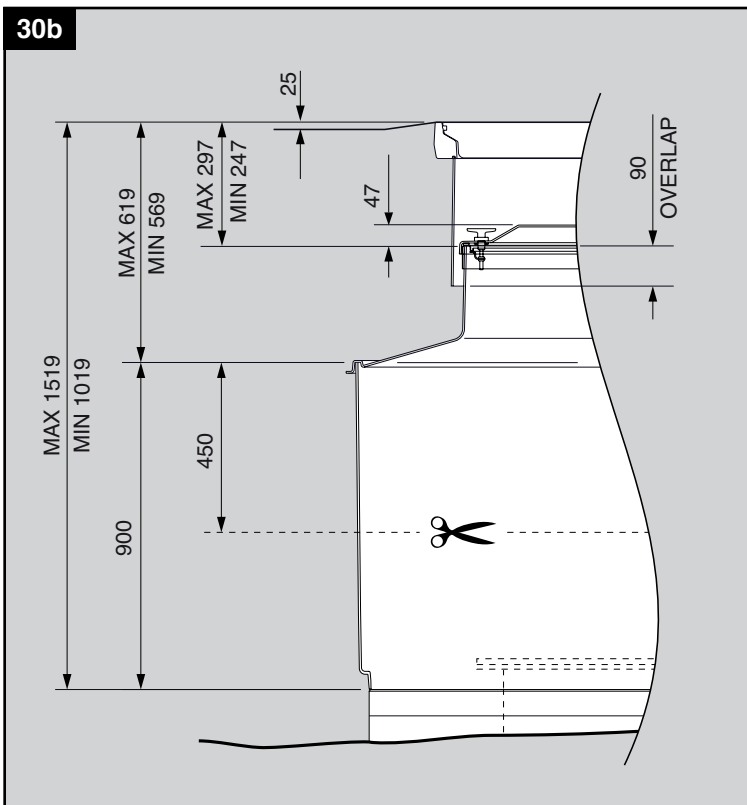
30a



Measurement (clearance dimension)	Action
Max. 300mm Min. 225mm	No trimming required, corbel can be bonded onto the sump. Adjust frame height using hangers.
less than 225mm	Trim material from chamber until clearance dimension falls within the range 300 to 225mm. 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 S15CR-390-WT or S15CR-3100-WT system. Bond a 300mm extension onto the sump as per the next page. Then proceed as above.

S15-3100-WT Systems

30b



Measurement (clearance dimension)	Action
Max. 297mm Min. 247mm	No trimming required, corbel can be bonded onto the sump. Adjust frame height using hangers.
less than 247mm	Sump base only (do not trim corbel) must be trimmed to allow for minimum 297 to 247mm 'clearance dimension'. The sump base can be trimmed by a maximum of 450mm. Trim the skirt so that the overlap between the corbel turret and skirt is between 90 and 120mm.
more than 297mm	The burial depth of the tank is greater than the maximum burial depth of the standard S15CR-390-WT or S15CR-3100-WT system. Bond a 300mm extension onto the sump as per the next page. Then proceed as above.

See next page for extension bonding instructions

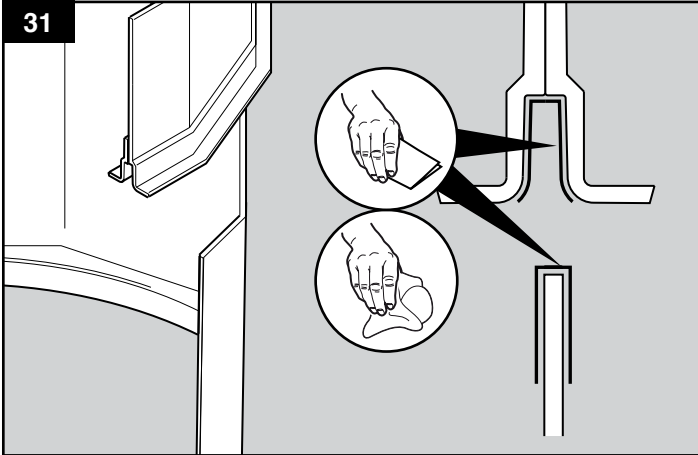
INSTALLATION INSTRUCTIONS

(Bonding the Extension / Sump)

FIBRELITE 

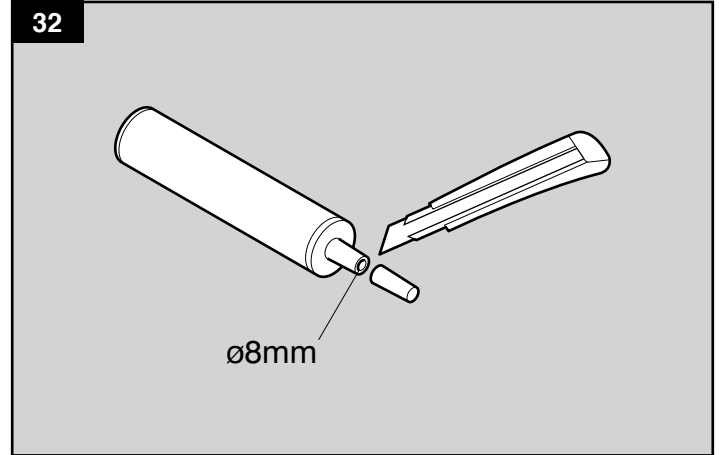
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31



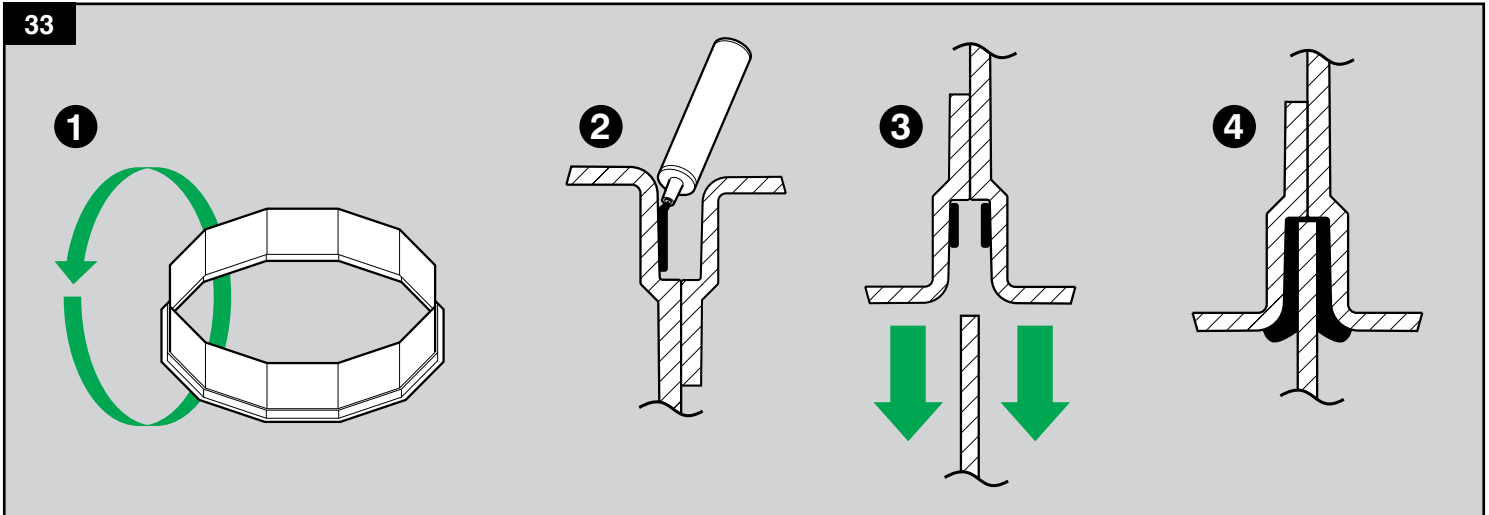
Abrade and wipe with a degreasing solvent the sump top edge / wall and the extension recess shoulder

32



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

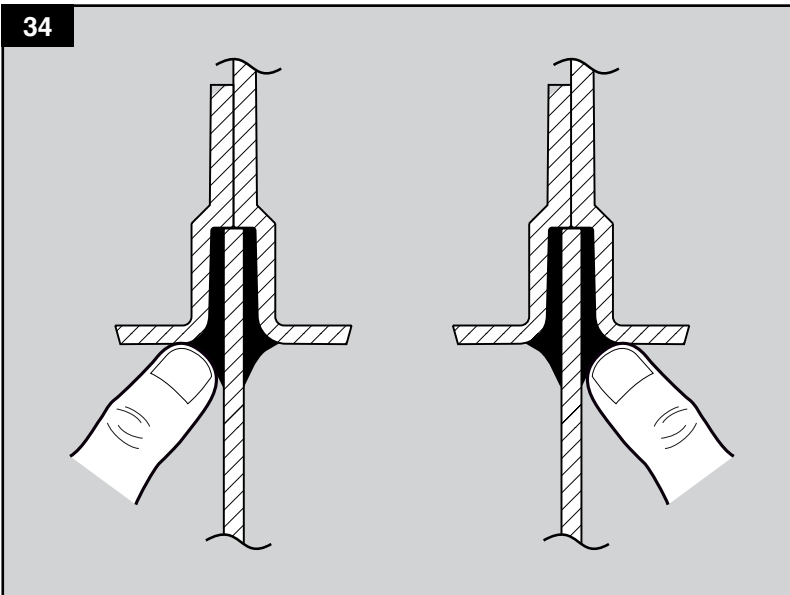
33



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 sump, ensure the extension is horizontal and press down uniformly.

34



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.

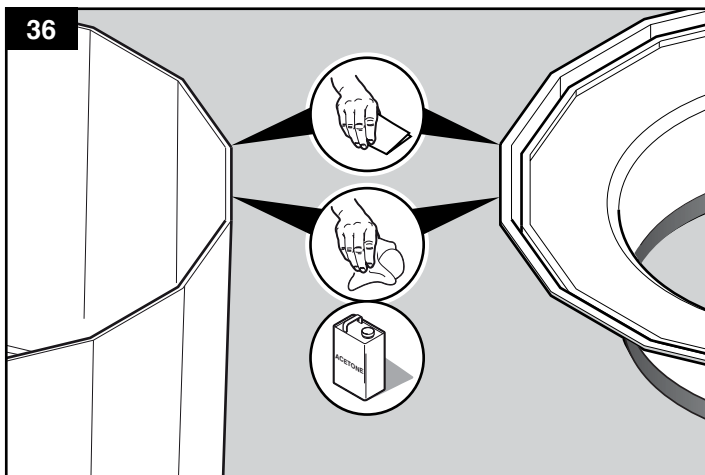
INSTALLATION INSTRUCTIONS

(Bonding the Corbel)

FIBRELITE

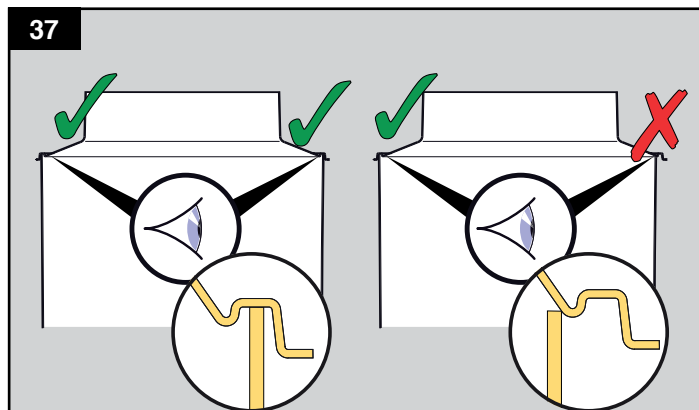
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36



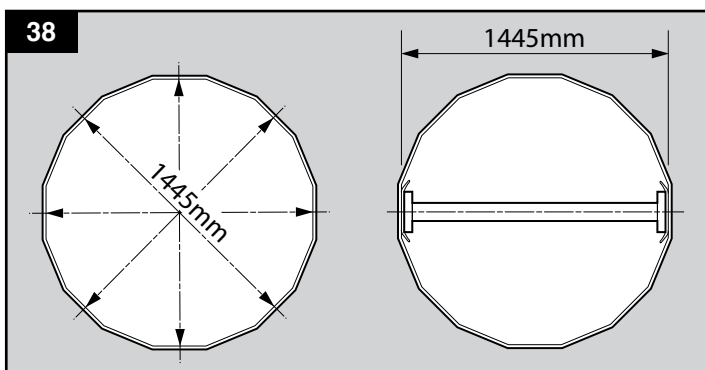
Abrade and wipe with a degreasing solvent the sump or extension top edge/wall and the corbel groove.

37



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.

38

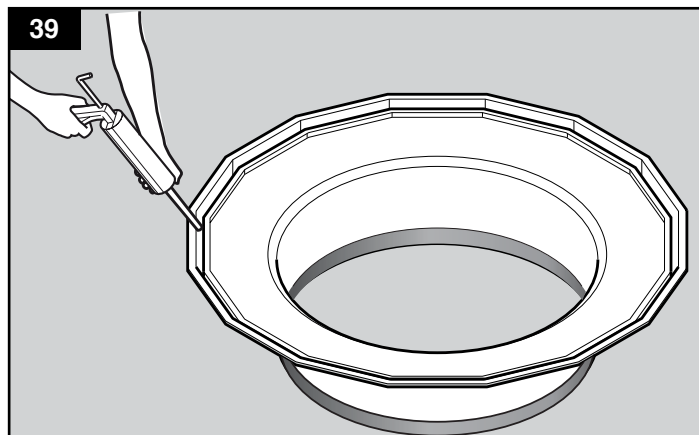


Measure distance between opposite walls, this should be 1445mm. If less than this you will need to brace out the sump.

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.

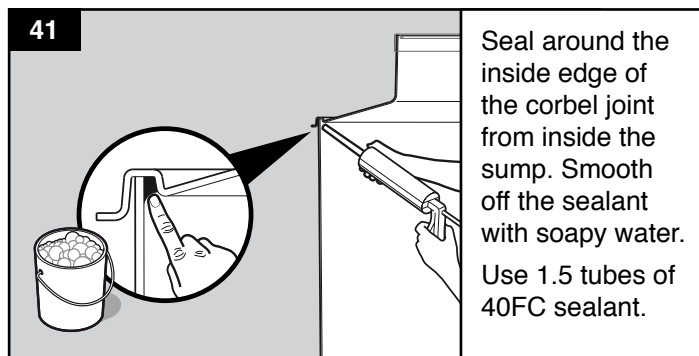
Repeat this process on all walls to get the correct shape.

39



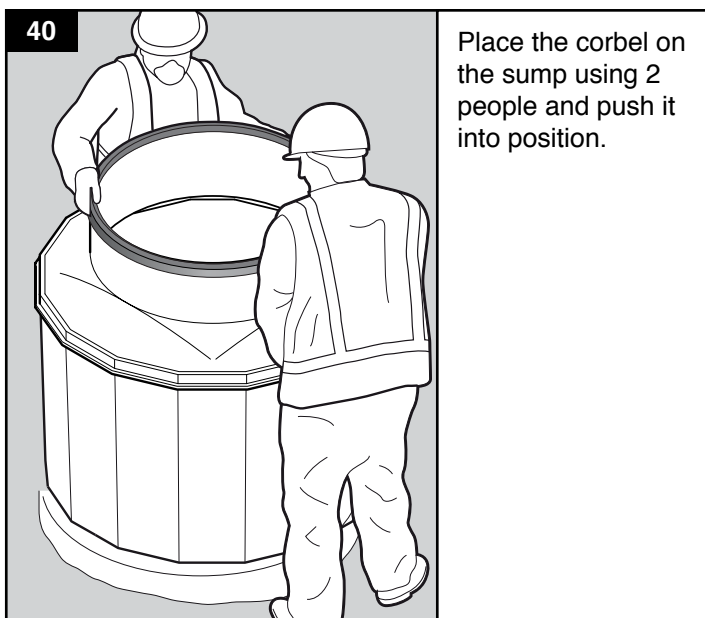
Apply 2 tubes of Soudaflex 40FC sealant in the groove of the corbel. Sealant should fill 1/2 the groove.

41



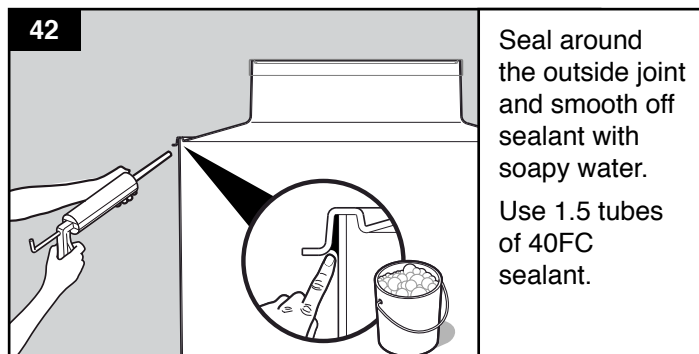
Seal around the inside edge of the corbel joint from inside the sump. Smooth off the sealant with soapy water. Use 1.5 tubes of 40FC sealant.

40



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

42



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

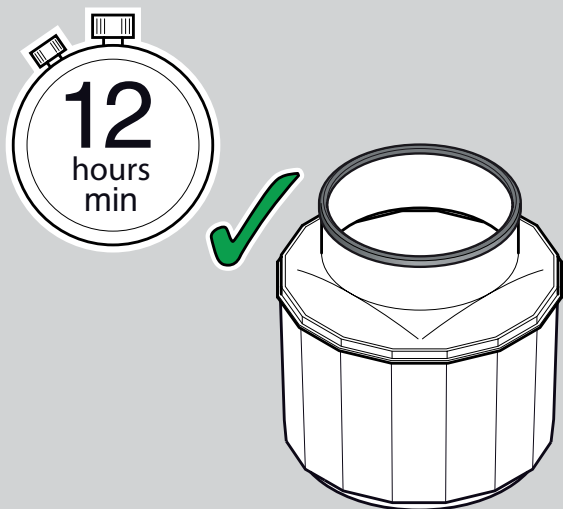
INSTALLATION INSTRUCTIONS

(Performing Corbel Vacuum Test)

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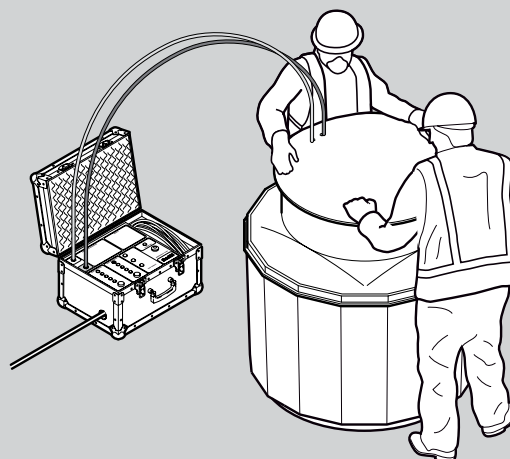
43



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.

44



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

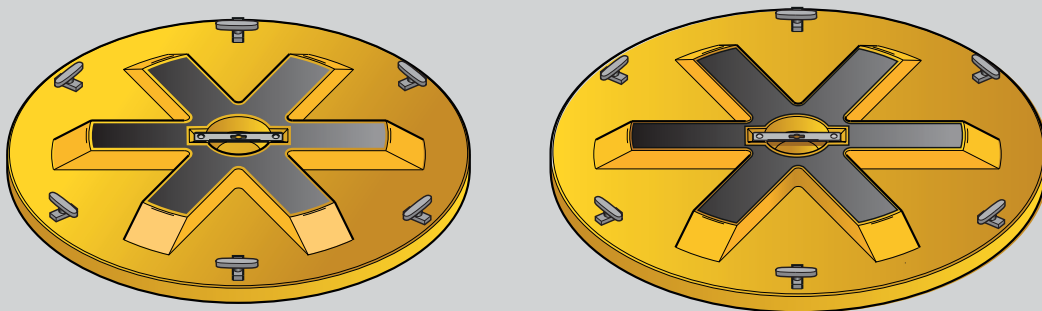
Warning: Test the corbel at a 0.6m depth setting only or irreparable damage may occur.

Refer to vacuum testing instructions for correct method.

INSTALLATION INSTRUCTIONS

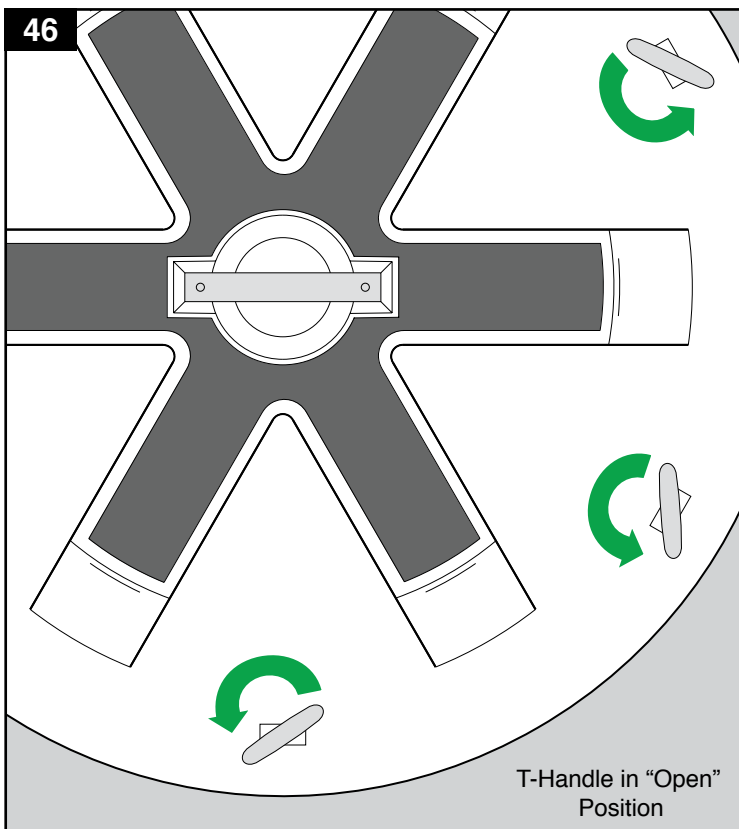
(Installing Watertight Platforms)

45

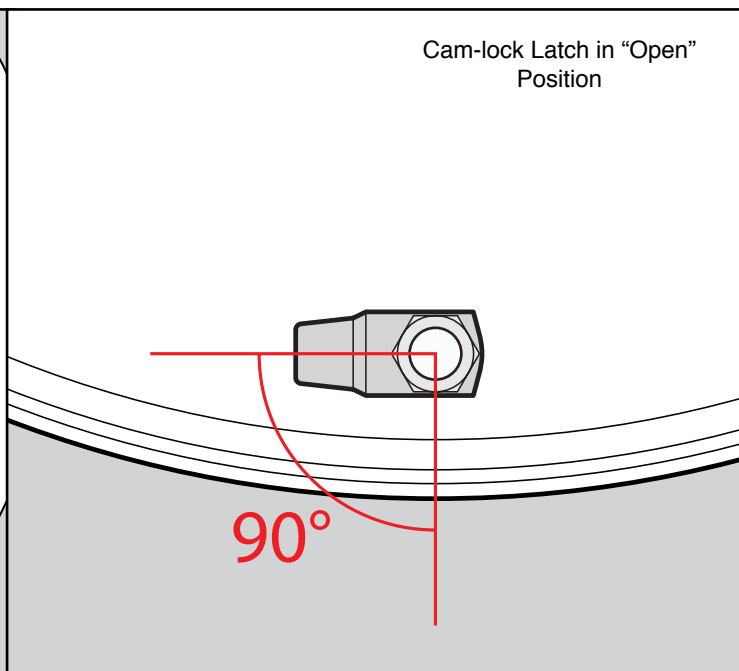


Once the sumps are properly installed and tested, the watertight platforms should be installed to ensure that the platforms fit properly onto the stainless steel retaining rings.

46

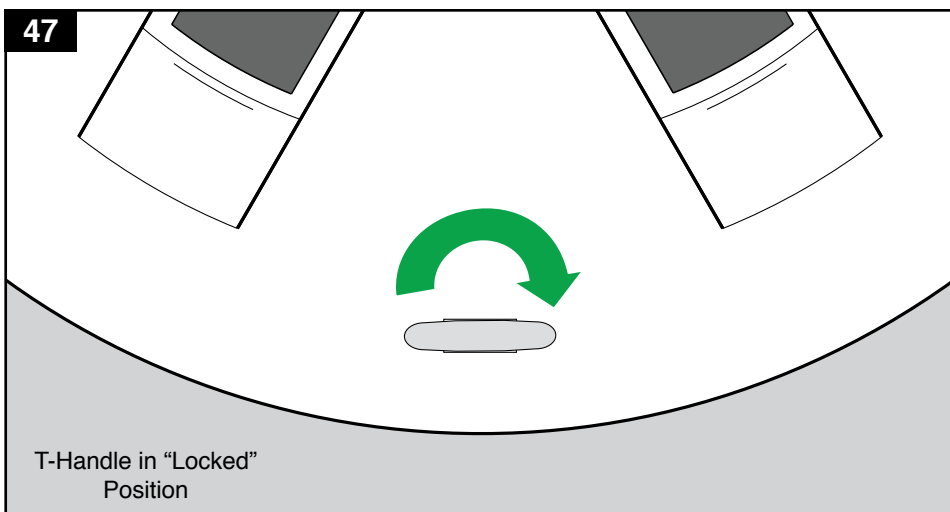


Cam-lock Latch in "Open" Position



Turn all T-handles on the top of the platform fully counterclockwise to the open position. The cam-lock latches on the underside should be 90 degrees opposed from the edge of the platform.

47



Seat the watertight platform 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 turning T-handle into locked position the cam-lock should compress very tightly. It may be necessary to adjust the cam-lock latch. See next page for instructions.

When it is confirmed that the platform seats correctly, removed it for final vacuum testing.

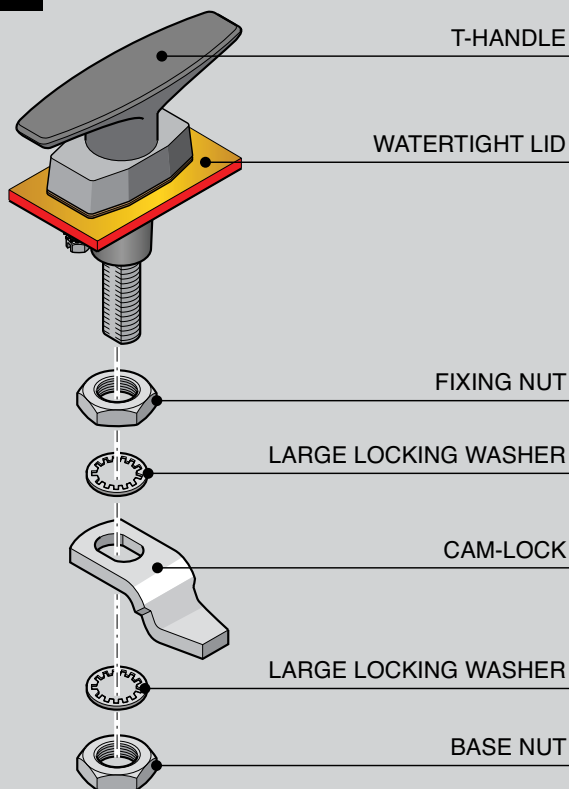
NOTE : If the T-handle cannot be fully engaged or if the platform is not compressing the gasket tightly against the stainless steel ring, it may be necessary to adjust the nut at the base of the cam-lock latch.

If this is the case, contact Fibrelite technical support at +44 1756 799 773

INSTALLATION INSTRUCTIONS

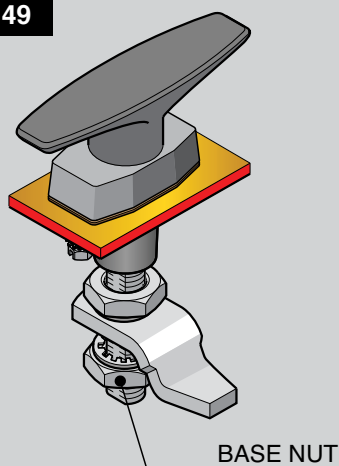
(Adjusting the Cam-lock Height)

48



The T-handle mechanism consists of the above items.

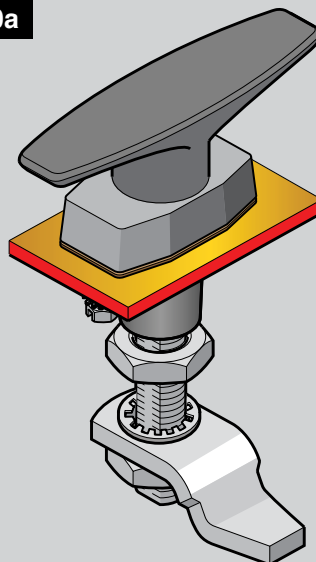
49



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 50a.

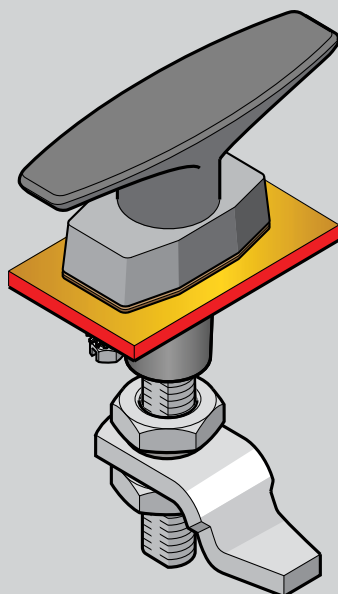
If the platform is not compressing the gasket tightly against the stainless steel ring it means the cam-lock needs to be raised. Loosen the base nut and go to step 50b.

50a



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 51.

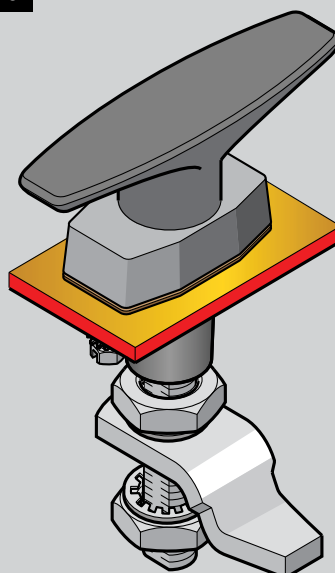
51



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.

50b

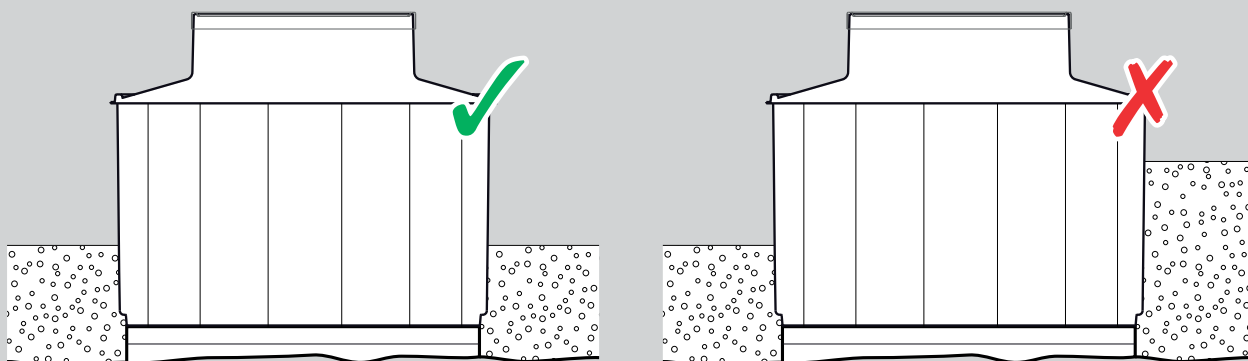


Pull the cam-lock down to rest onto the base nut and raise the fixing nut. Push the cam-lock up to the fixing nut and tighten the base nut until the cam-lock is secure as per step 51.

INSTALLATION INSTRUCTIONS

(Backfilling)

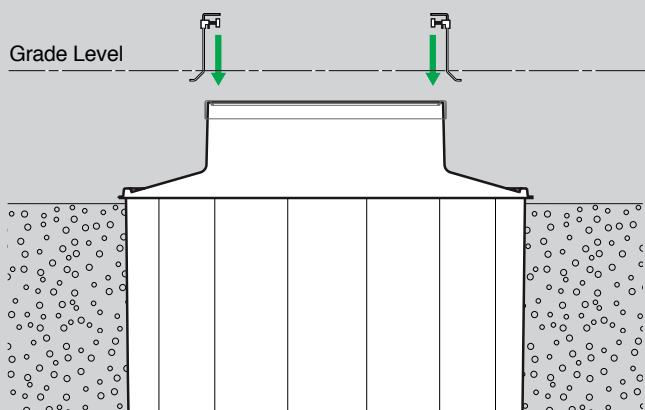
52



Once the corbel test has been performed with a PASS result, 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.

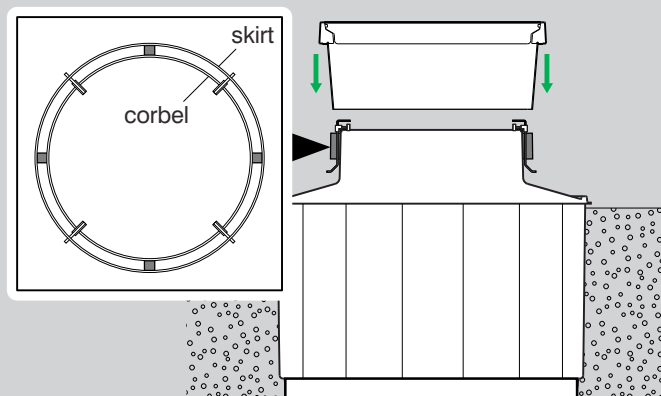
(Adjusting the Skirt & Frame to Grade Level)

53



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

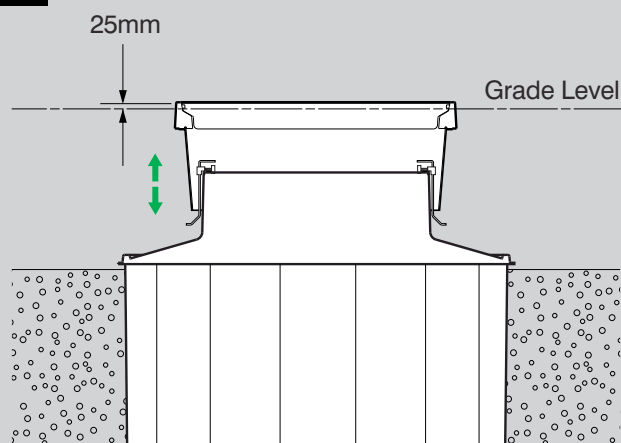
54



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.

55



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

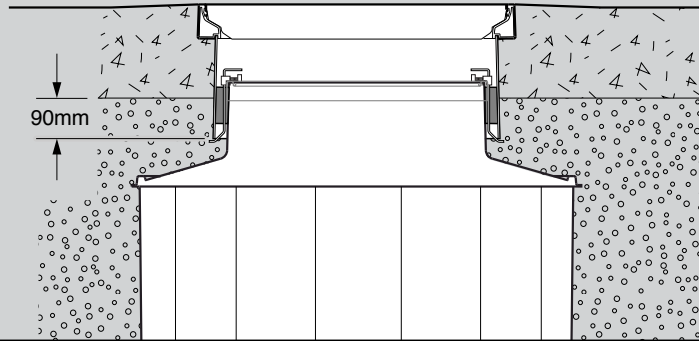
INSTALLATION INSTRUCTIONS

(Concreting)

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56



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).

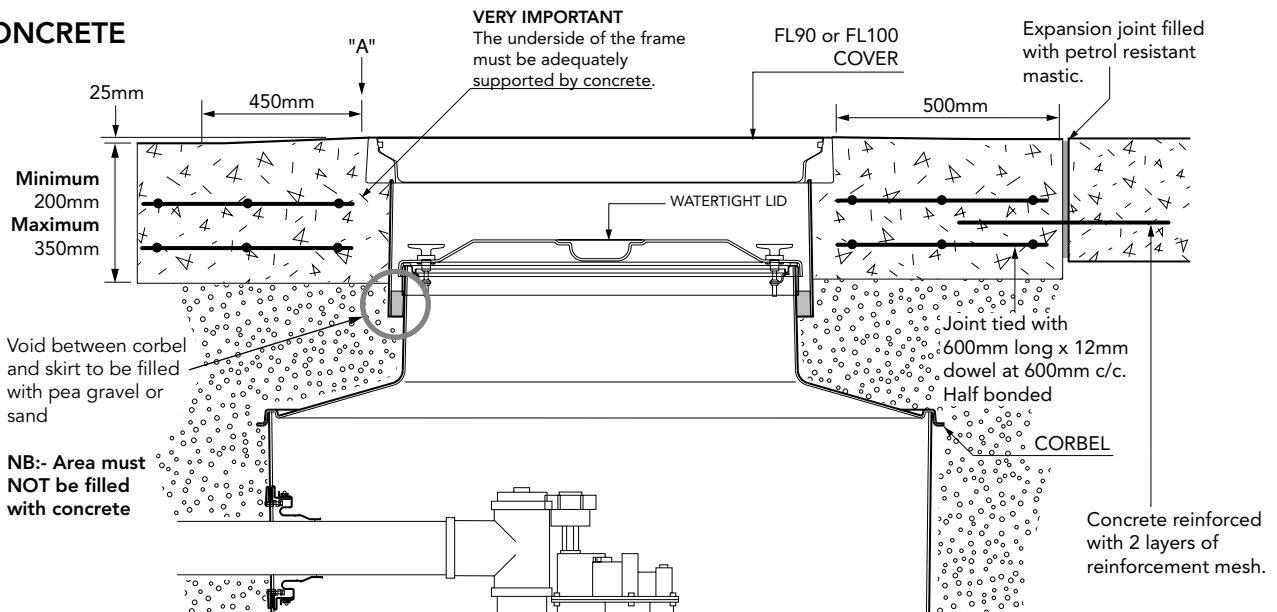
Ensure foam spacers are in position to locate the skirt centrally around the corbel.

57

VERY IMPORTANT
OUTER EDGE "A" OF FRAME SET 25MM
ABOVE GENERAL FORECOURT AREA WITH
CONCRETE RAMPED AWAY OVER 450MM.

TYPICAL INSTALLATION

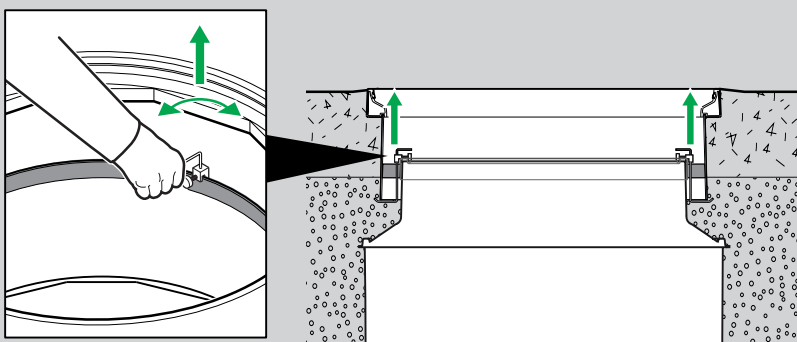
CONCRETE



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.

58



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.

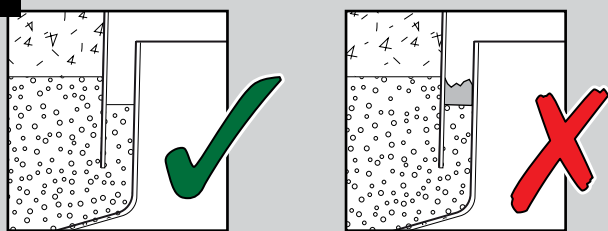
Complete other third party equipment installation inside the sump.

INSTALLATION INSTRUCTIONS

(Testing)

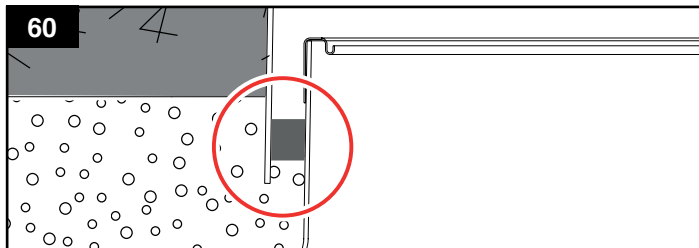
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59



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

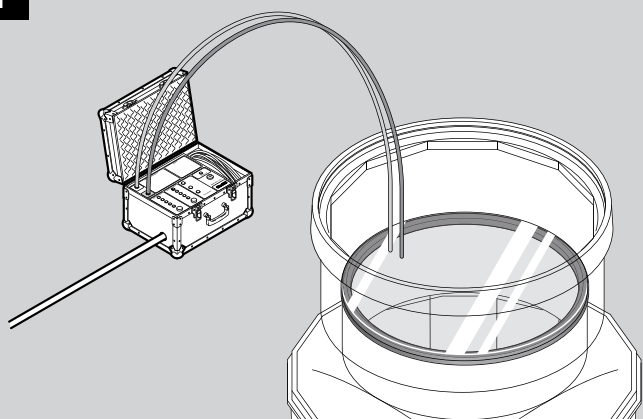
60



NB:- Area must NOT be filled with concrete

Void between corbel and skirt to be filled with pea gravel or sand.

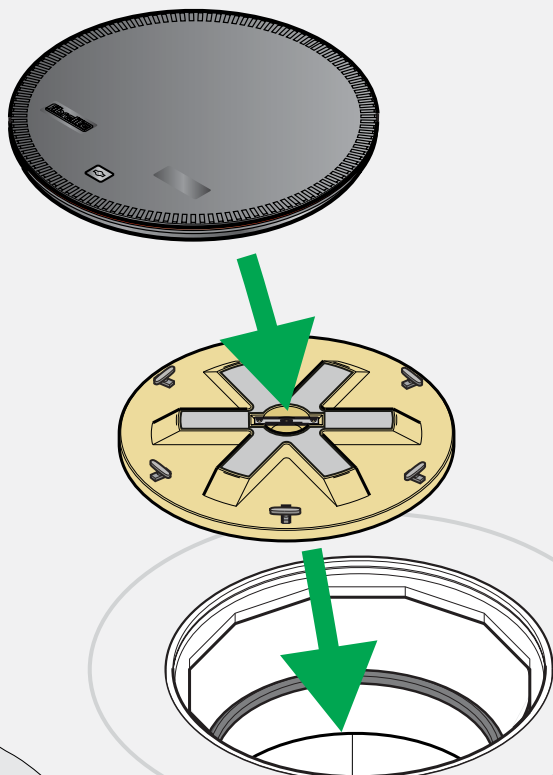
61



Test completed system.

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

62



Refit platform and fit cover