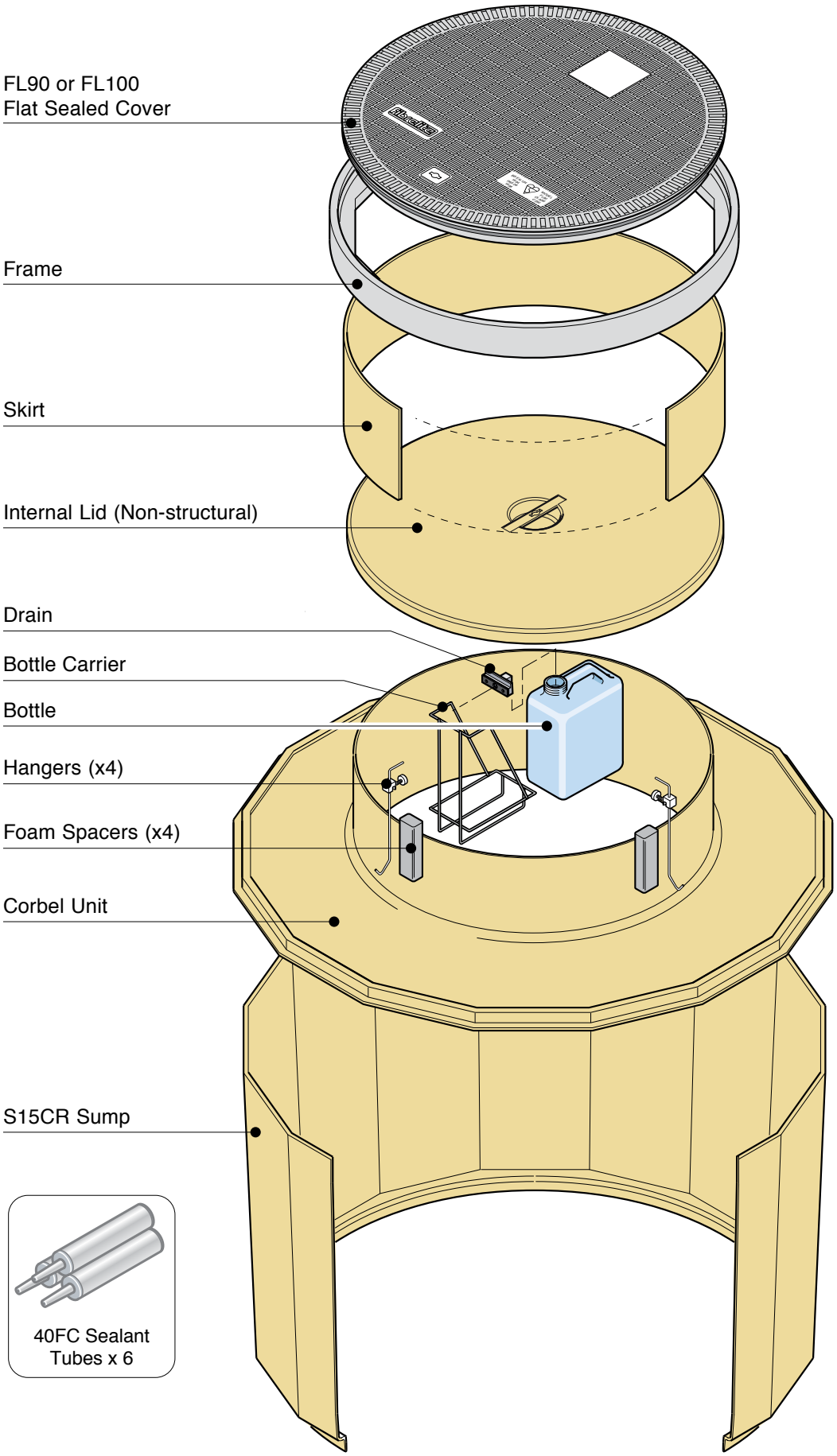

FL90 or FL100
Flat Sealed Cover
Frame
Skirt
Internal Lid (Non-structural)
Drain
Bottle Carrier
Bottle
Hangers (x4)
Foam Spacers (x4)
Corbel Unit
S15CR Sump
40FC Sealant
Tubes x 6

S15CR-390 Installation Guide
(Sump Installation)

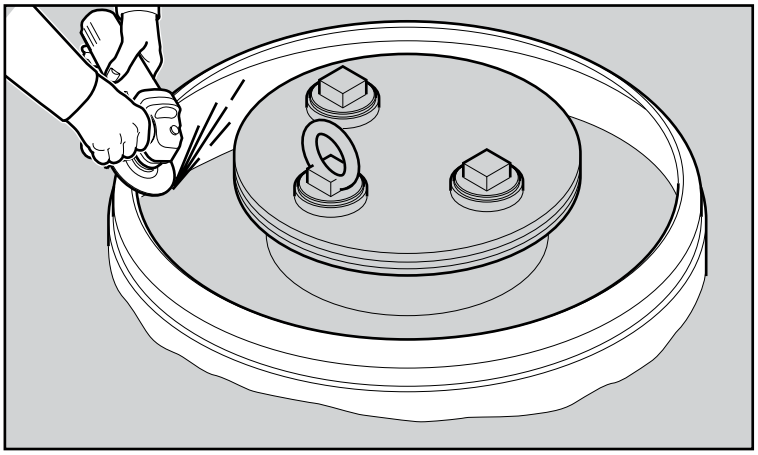
FIBRELITE
PART OF OPW A DOVER COMPANY

NB: - Correct preparation is essential!
Failure to correctly prepare the surface prior to bonding may result in a “WEAK” joint and subsequent failure.

1

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)

STOP 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 vapors may be present in the tank pit, use only explosion-proof or air-powered tools or sand the collar by hand.

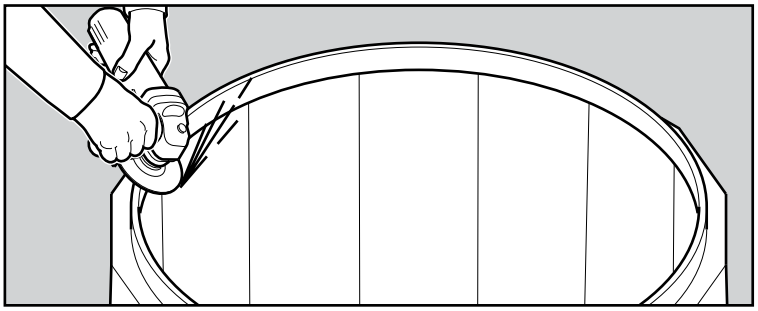


2

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

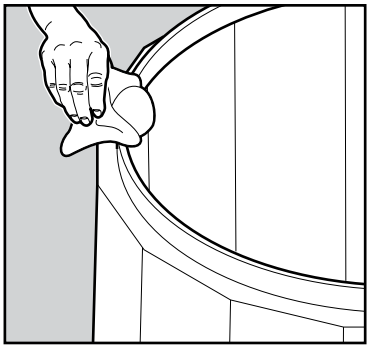
Sand both the internal and external sides of the collar.

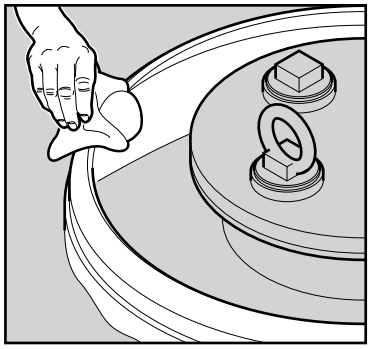
This can also be sanded by hand.
(Sumps supplied to ExxonMobil sites are pre-sanded)



3

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



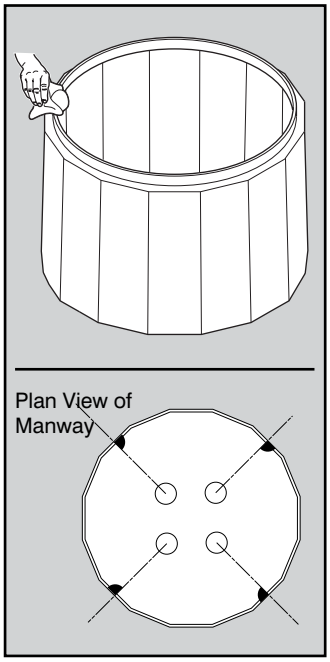


4

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

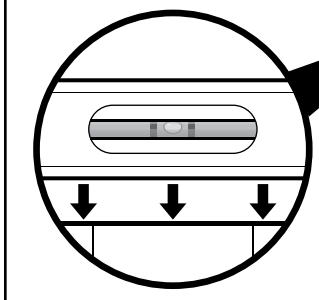
4a

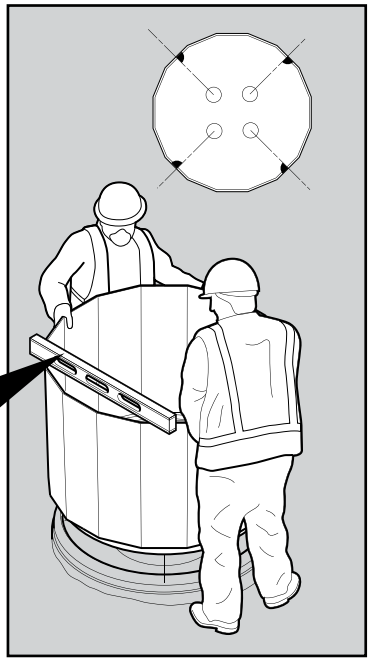
NB:
When installing the sump and immediately prior to bonding it is critical to ensure that the sump facets align perpendicular to the pipework exit points. This will ensure that the pipe entry seals are not unduly stressed.



5

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





S15CR-390 Installation Guide
(Laminating the sump to the tank collar)

FIBRELITE
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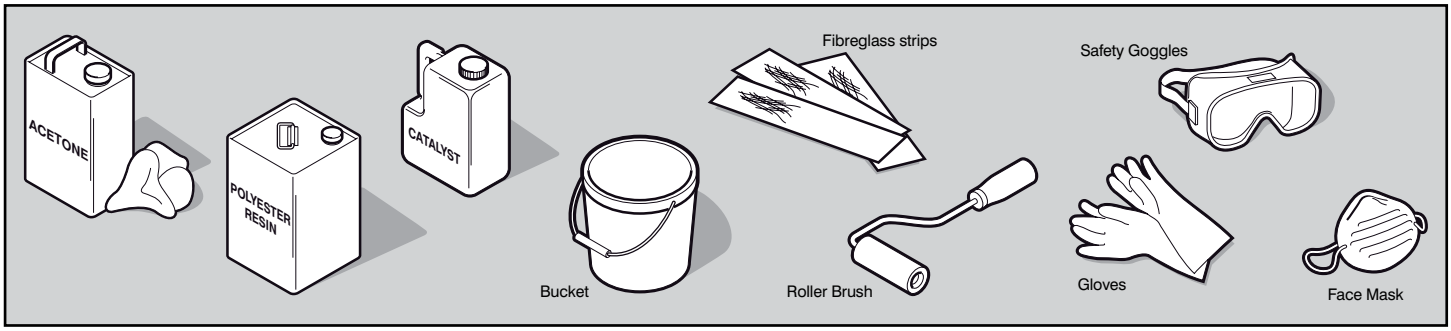
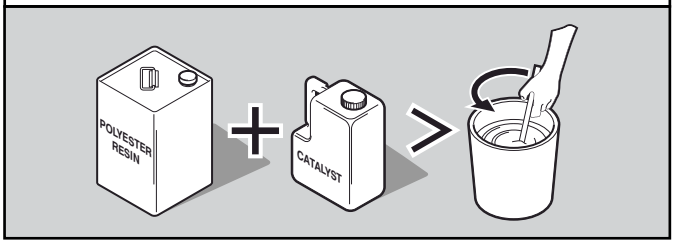
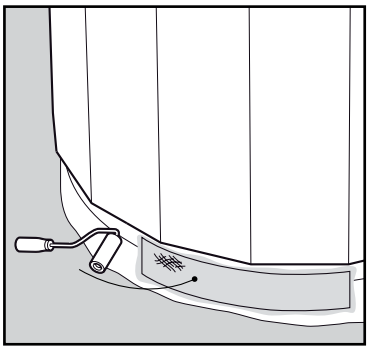


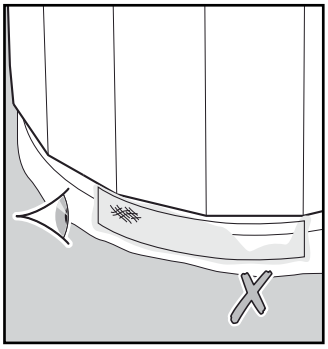
6 Add 2% catalyst to resin eg. 20ml catalyst to 1L resin - stir well.



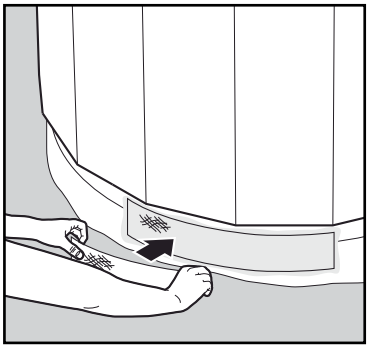
7 Brush resin onto the joint surface, apply a strip of fibreglass over the joint and apply resin over strip using a roller brush.



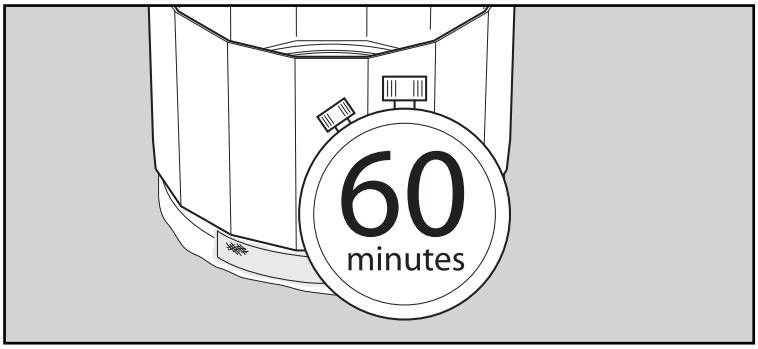
8 Ensure the resin covers the fibreglass strip, do not leave any dry areas.



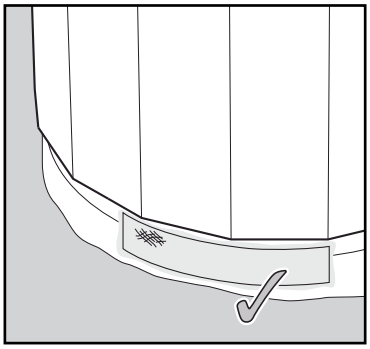
9 Apply a second and third layer of fibreglass as per 7 & 8

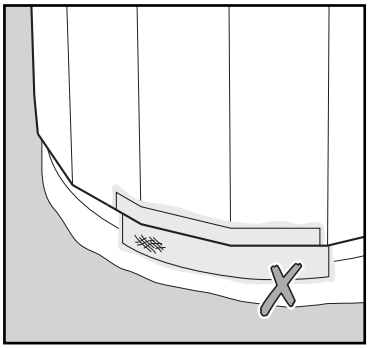


10 Leave to dry for a minimum of 1 hour, ensure the resin has hardened before applying the epoxy grout to the internal joint. The fibreglass strips must overlap at the joints by a minimum of 50mm and each layer must be staggered.



11 **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).

S15CR-390 Installation Guide
(Epoxy Grout Mixing and Application)

FIBRELITE
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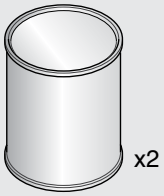
Pack

Epoxy Injection Grout Unit
(Combined equals 2 litres)

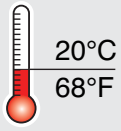


Base Component (Epoxy Resin)

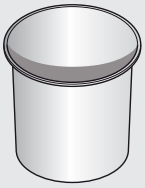
Hardener Component

Storage

For best results store at room temperature



Tools

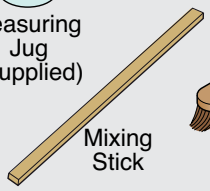


6L Tub (Supplied)

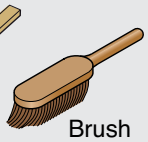
Acetone

Measuring Jug (Supplied)

Sandpaper



Mixing Stick



Brush

Health & Safety

Chemically Resistant Gloves

Chemically Resistant Eye Protection

Well Ventilated

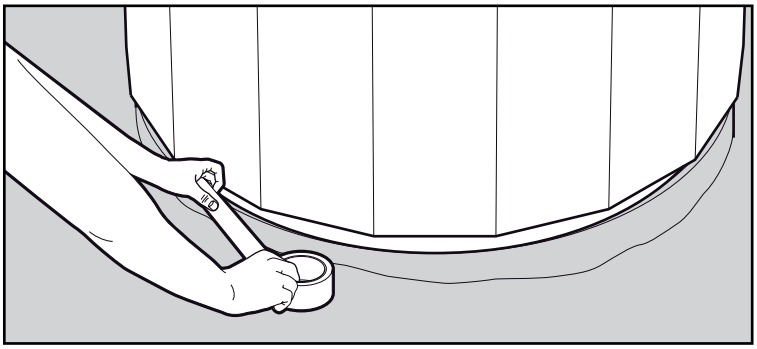
Incase of inadequate ventilation use suitable respiratory equipment

Refer to the Health and Safety Data Sheets for further details

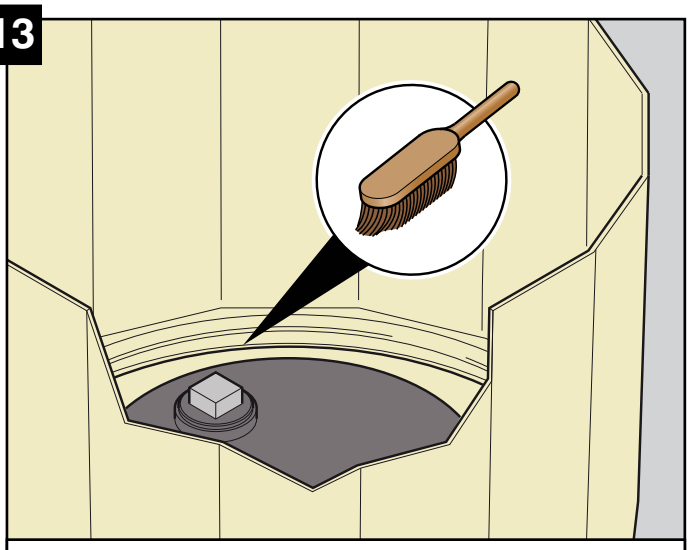
12

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.

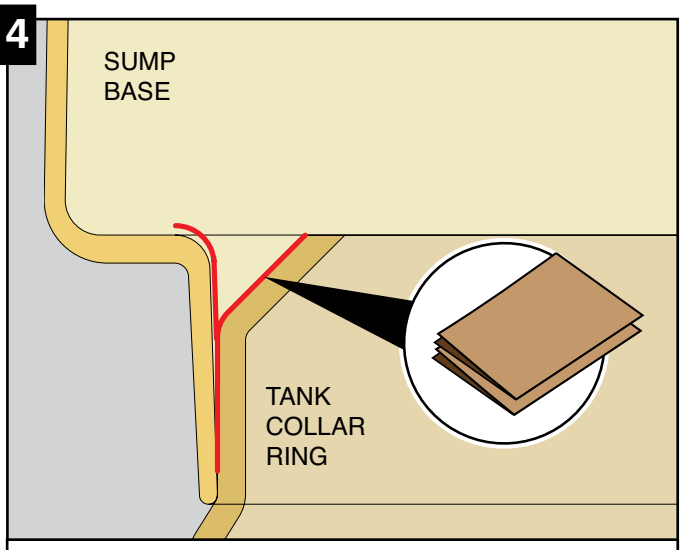


13



Clear the target area of debris.

14



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

S15CR-390 Installation Guide
(Epoxy Grout Mixing and Application)

FIBRELITE
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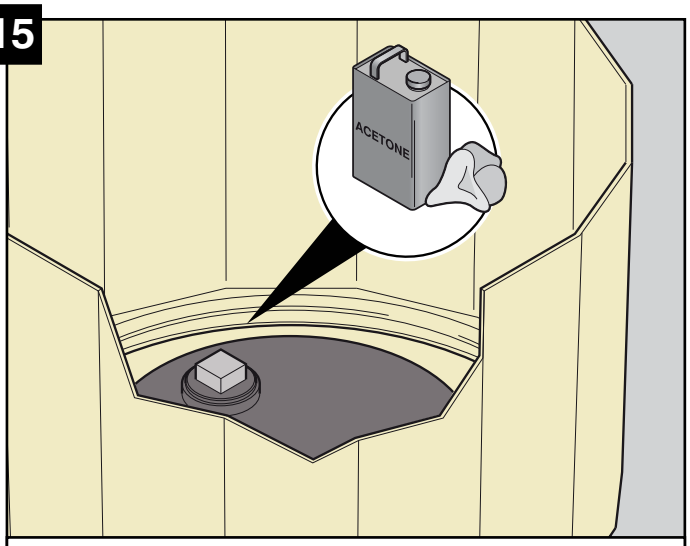
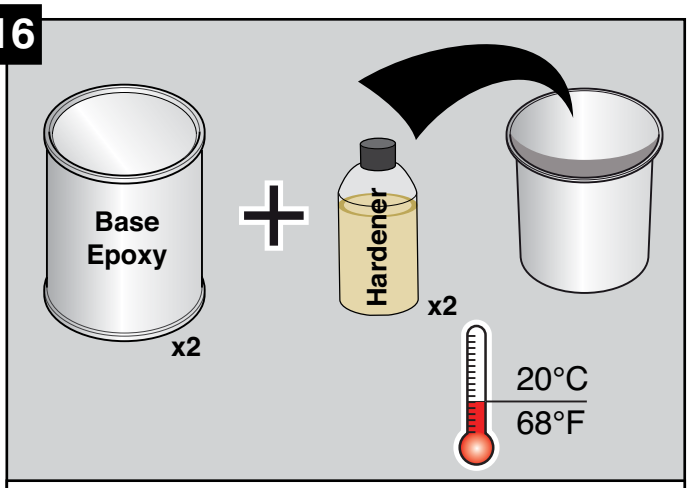
15



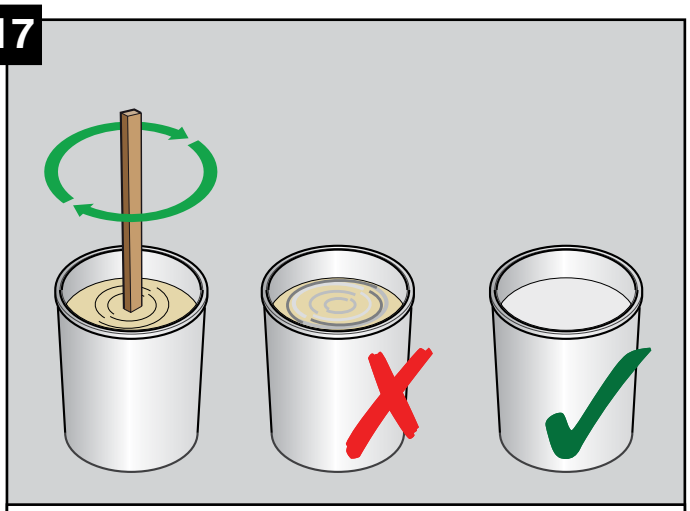
Degrease abraded area with acetone.

16



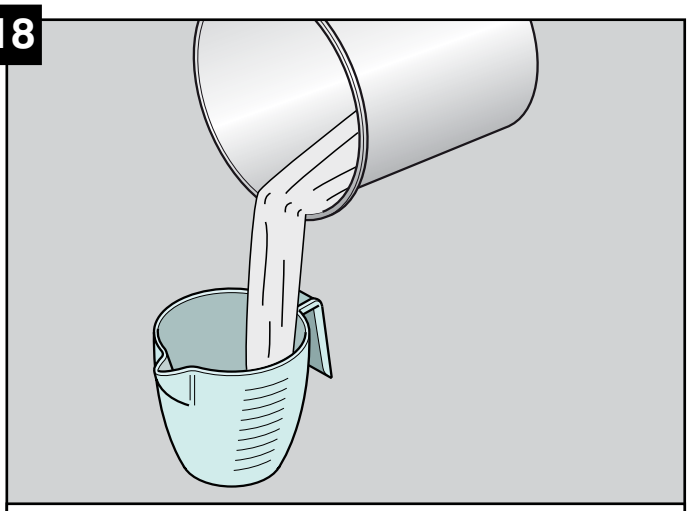
Firstly pour the resin base and then the hardener into the tub. Mix in well ventilated area. Incase of inadequate ventilation use suitable respiratory equipment

17



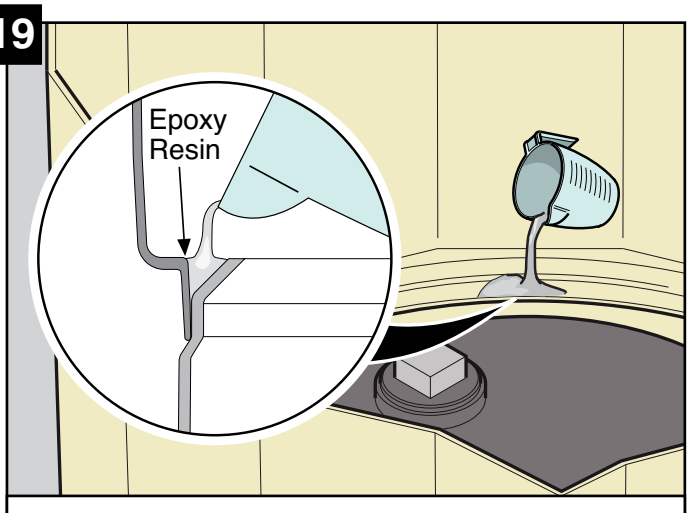
Using a stick or spatula gently mix together until clear and homogenous. Mix in well ventilated area. Incase of inadequate ventilation use suitable respiratory equipment

18



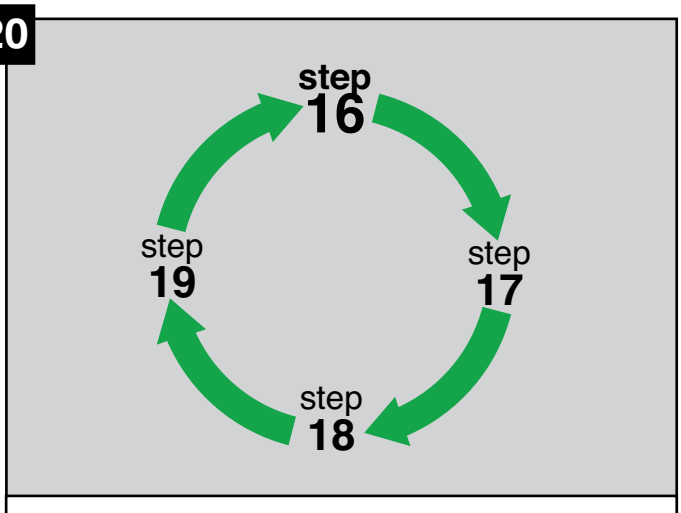
Pour the mix into the measuring jug and use immediately.

19



Carefully pour into the target area.

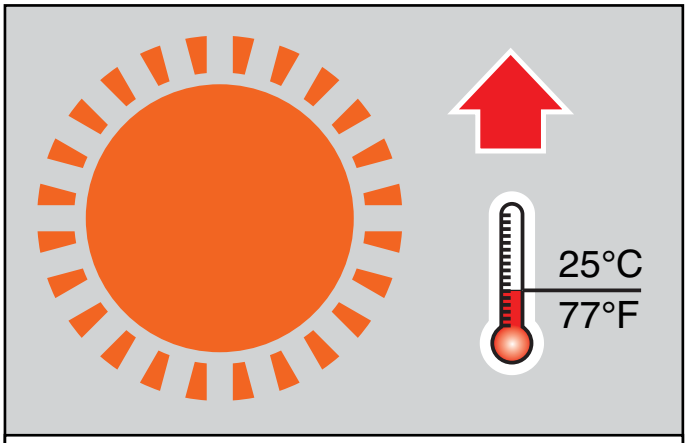
20



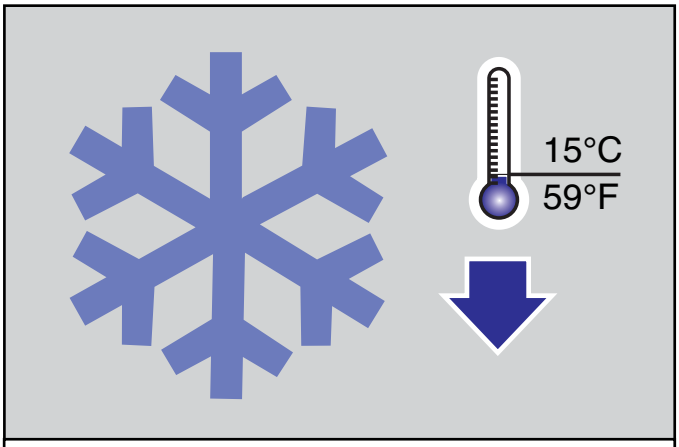
Repeat steps 16 - 19 immediately until joint is filled.

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.

S15CR-390 Installation Guide
(Pipework and Entry Seal Kits)

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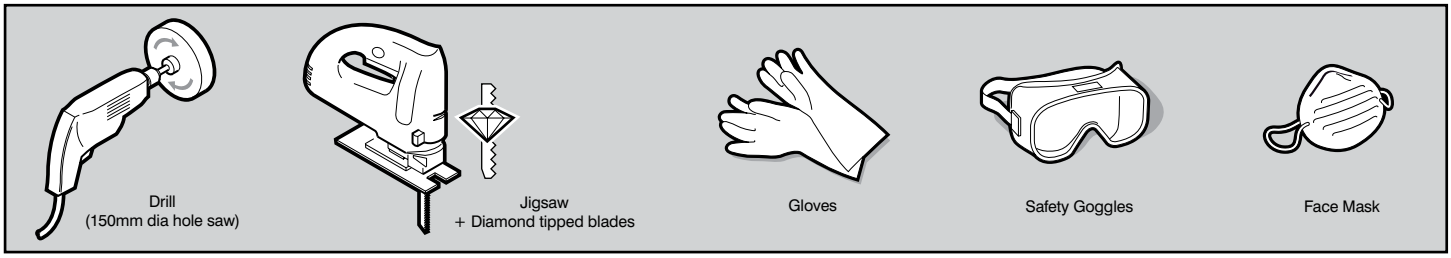
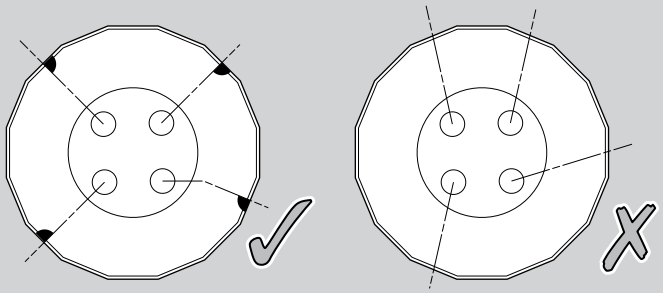
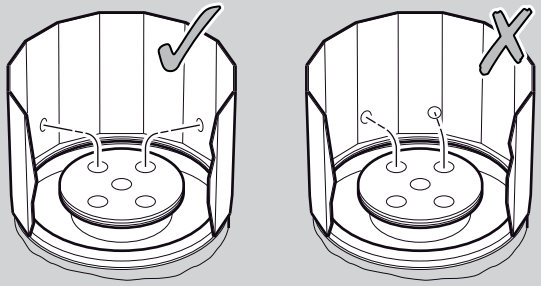


21 **WARNING** Care must be taken to position the pipework and conduit so it exits the sump at 90˚ angle to the sump wall. Otherwise undue stress will be placed on the sump wall and entry boot, which may lead to leaks in the future.



Position pipeway at 90º angles to the sump wall.



Ensure pipe entry boot is positioned away from the joints.

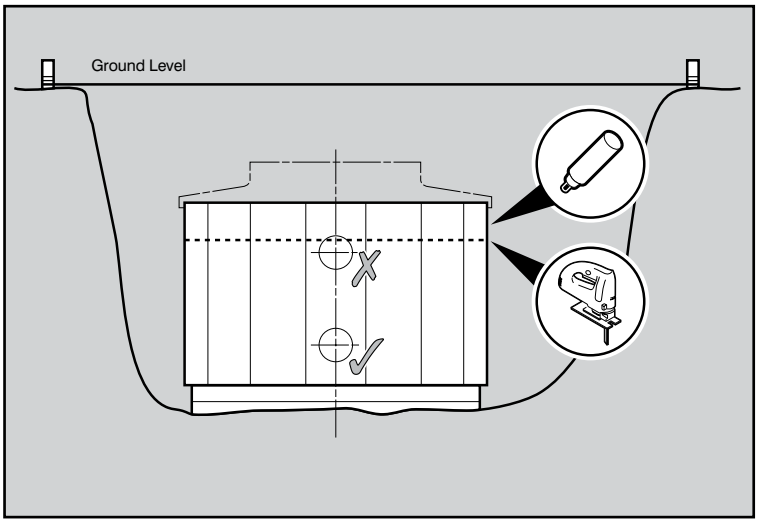
22 Before installing pipework, fix a string line at ground level across the sump to check if material needs to be cut off the sump. If so, mark the sump with a line along the cut mark.

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

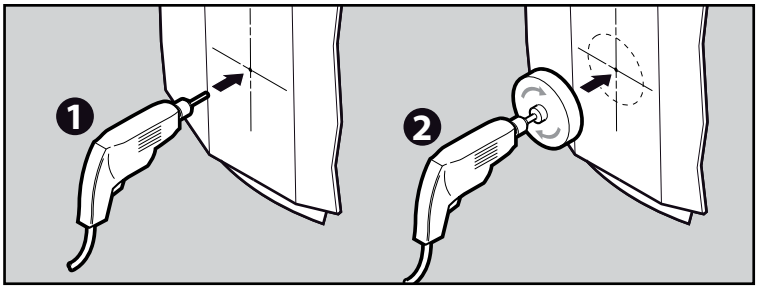
Standard Entry Kit = 145mm
Large Entry Kit = 170mm

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

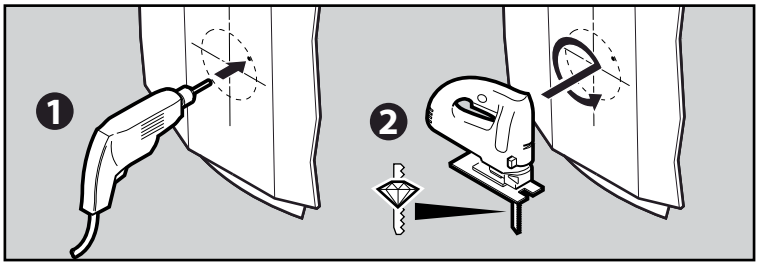
Refer to measurement chart.



23 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.



24 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.

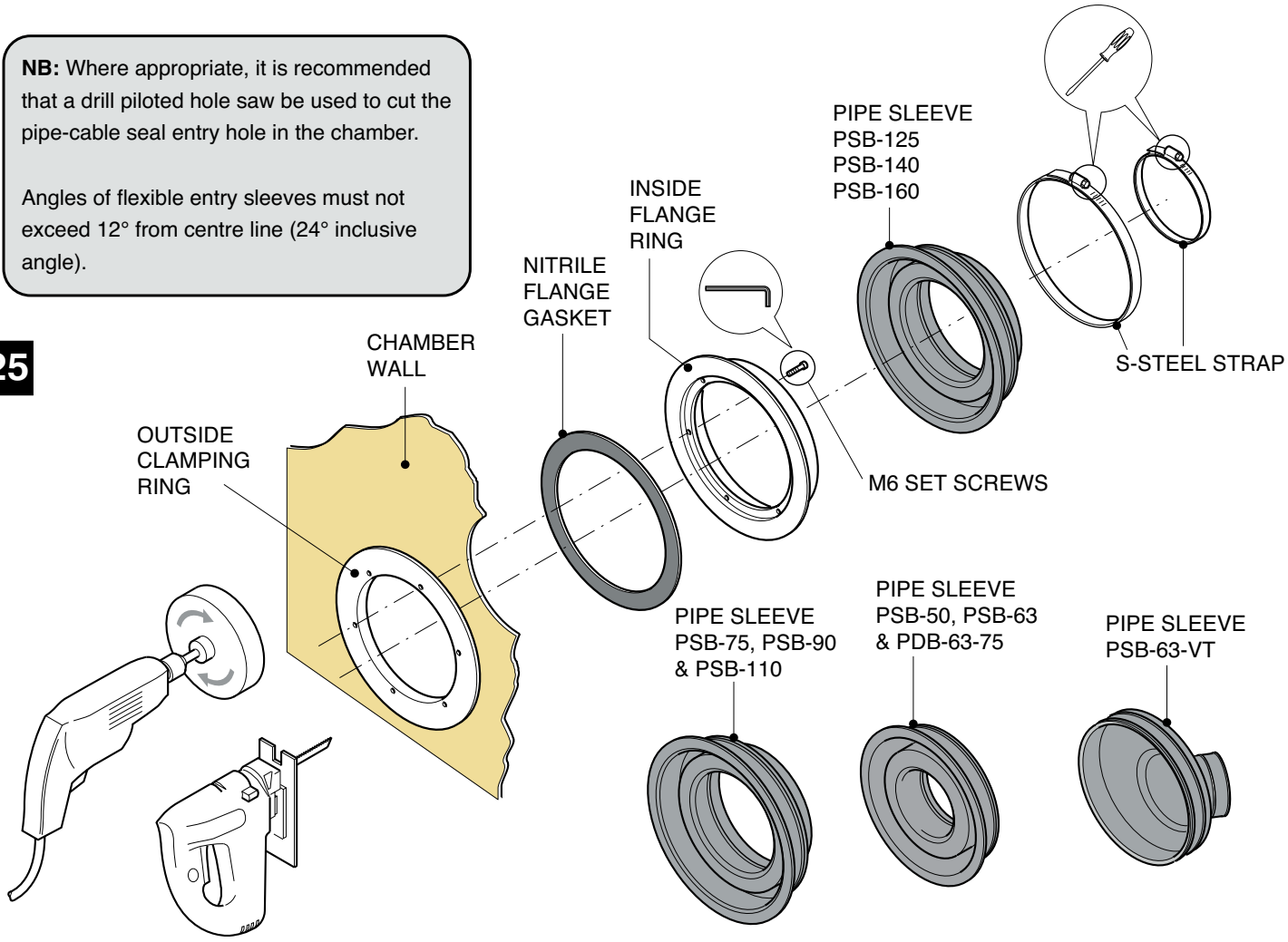
S15CR-390 Installation Guide
(Pipe Sealkits Installation)

FIBRELITE
PART OF OPW A DOVER COMPANY

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.

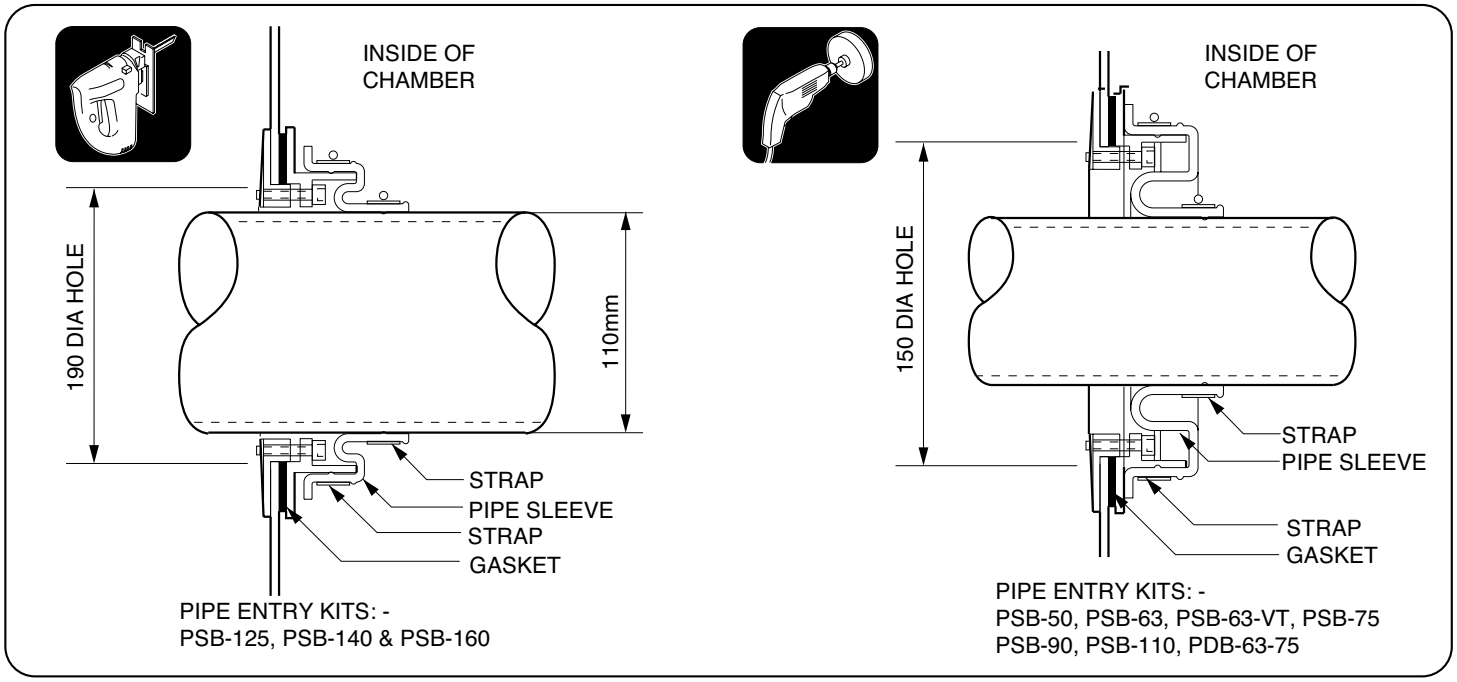
Angles of flexible entry sleeves must not exceed 12° from centre line (24° inclusive angle).

25



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.

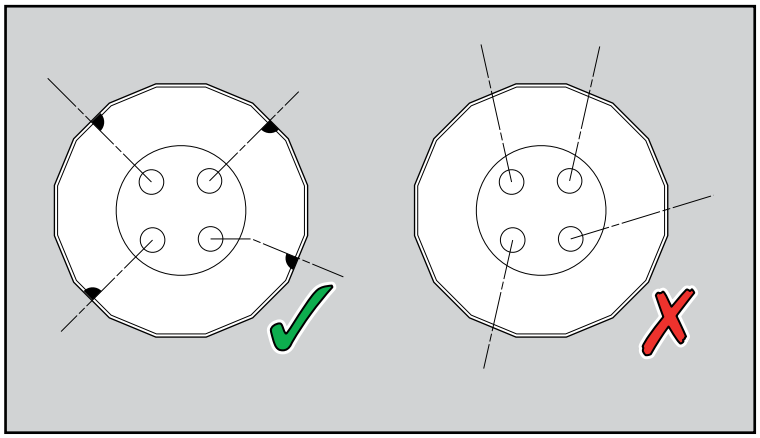
26 **PEC KITS**

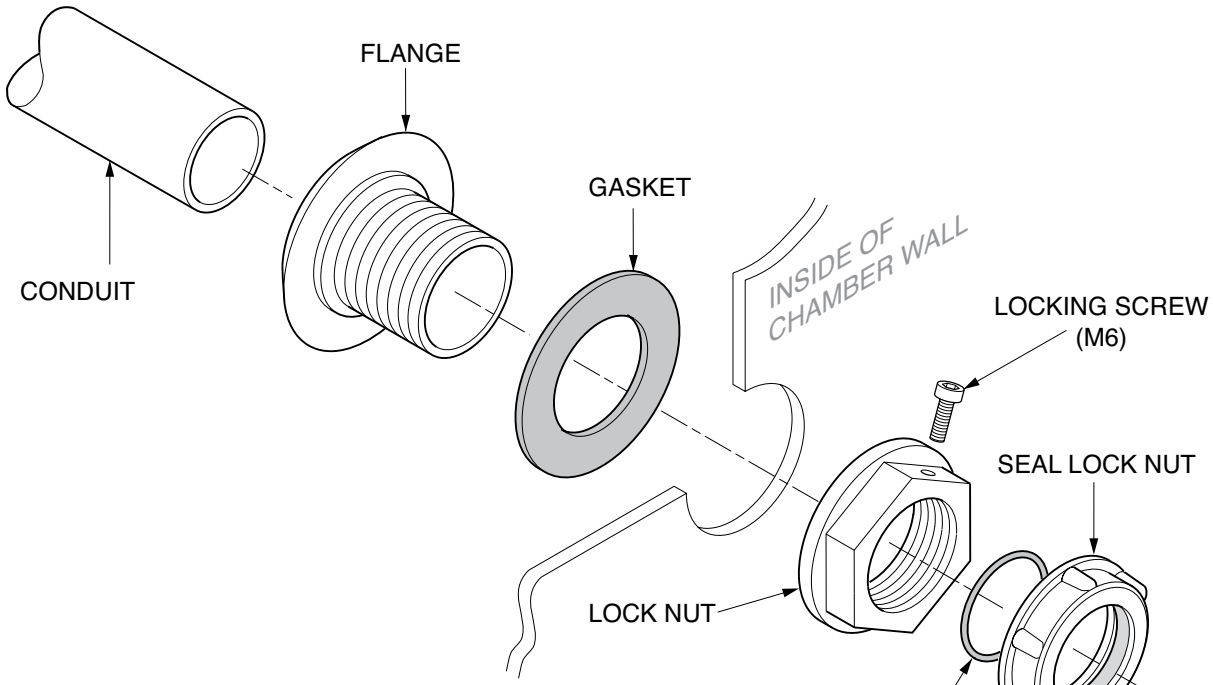
Refer to pipe entry boot instructions on positioning of the hole.

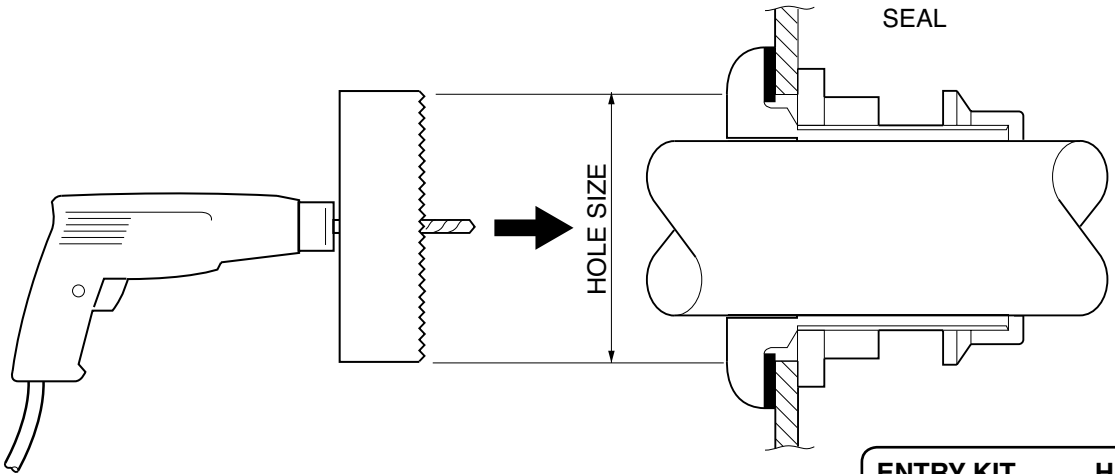
Conduit must be installed at 90º angle to the side wall.

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.



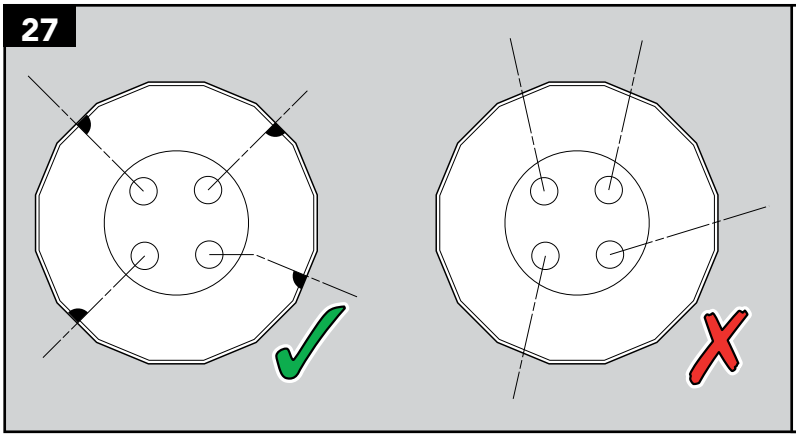




NB: Use the correct size drill piloted hole saw for each entry kit. The cable entry seal must be fitted perpendicular to the sump wall and the conduit must enter the entry kit perfectly aligned. When backfilling ensure the conduit is not disturbed.

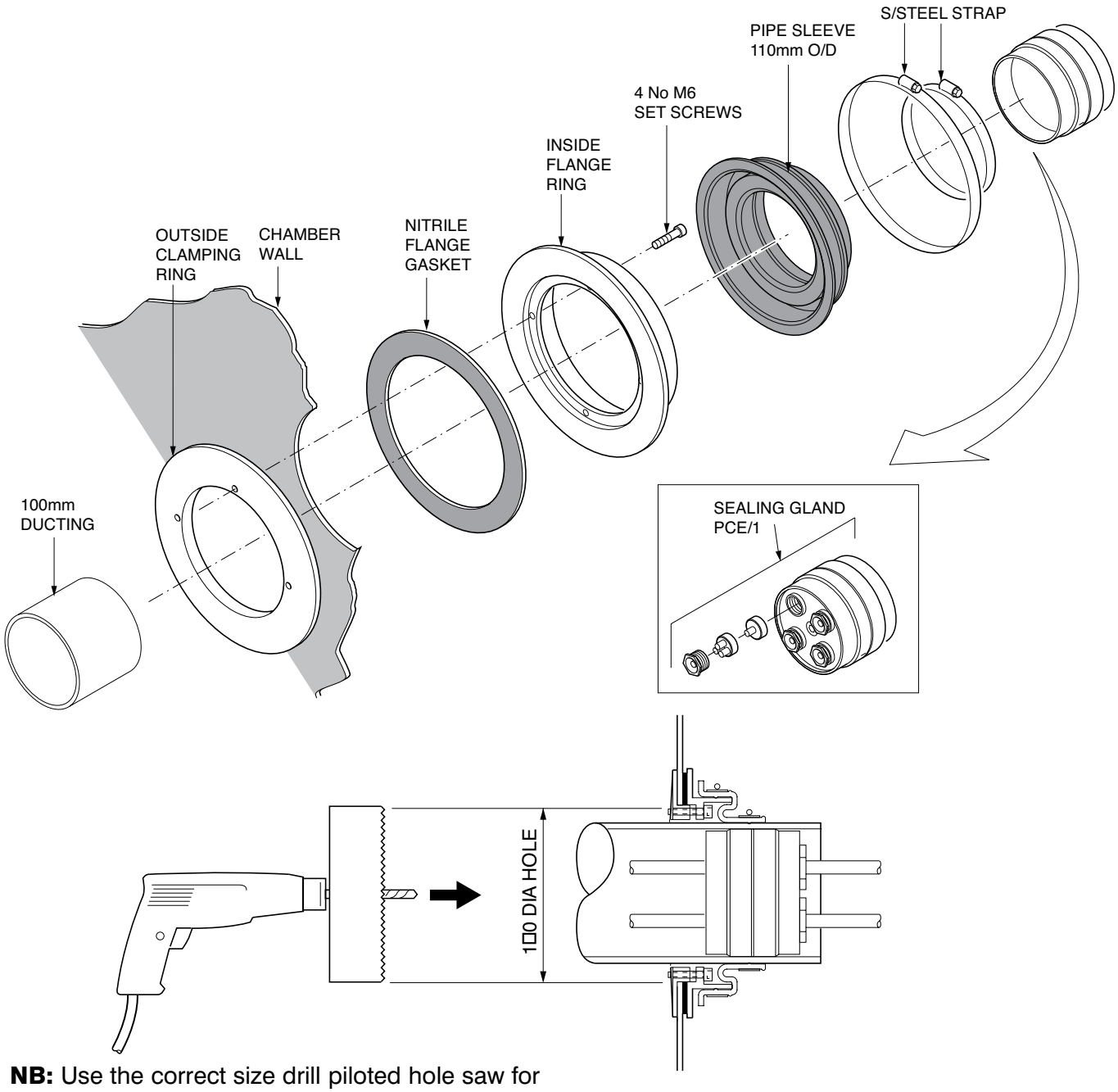
ENTRY KIT	HOLE SIZE
PEC-27	Ø51mm
PEC-32	Ø51mm
PEC-33	Ø60mm
PEC-50	Ø73mm

27



PCE-1-KIT

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



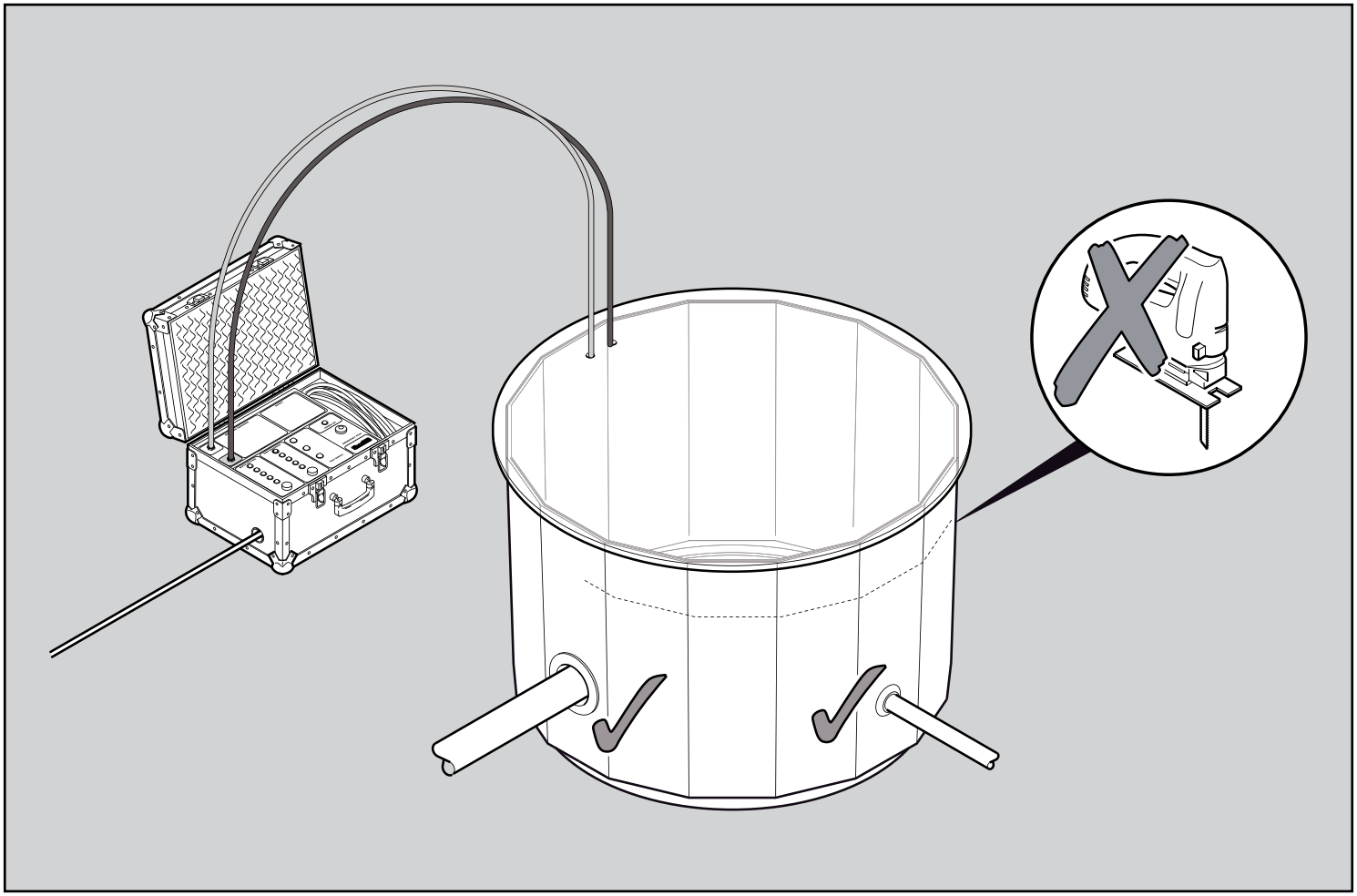
NB: Use the correct size drill piloted hole saw for each entry kit. The cable entry seal must be fitted perpendicular to the sump wall and the conduit must enter the entry kit perfectly aligned. When backfilling ensure the conduit is not disturbed.

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

Perform vaccum test.

Refer to Vacuum test instructions.

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



S15CR-390 Installation Guide
(Acheiving the correct height)

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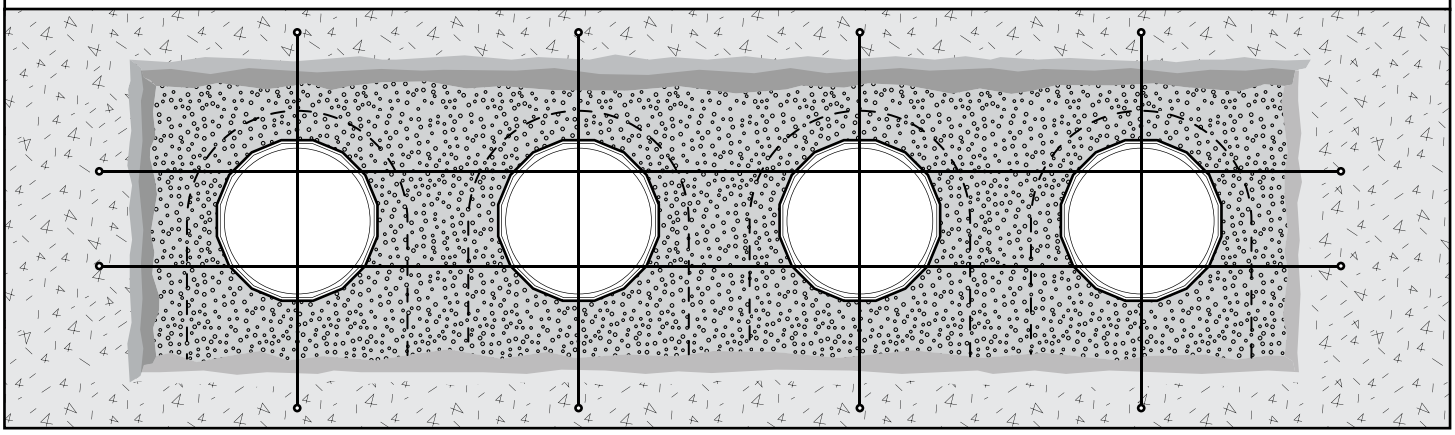
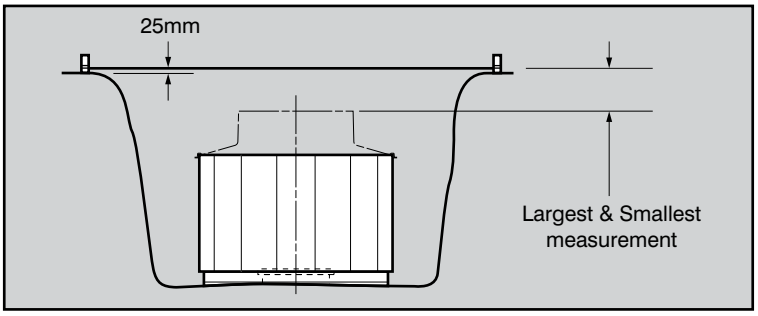
29 Fix string lines 25mm above grade level across the sump - across length and width of the tank farm to highlight falls in grade level.

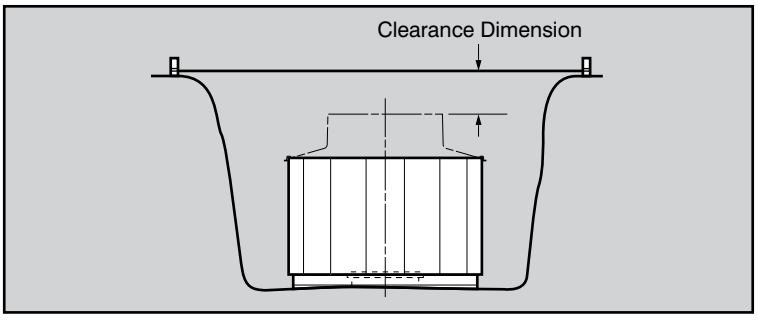


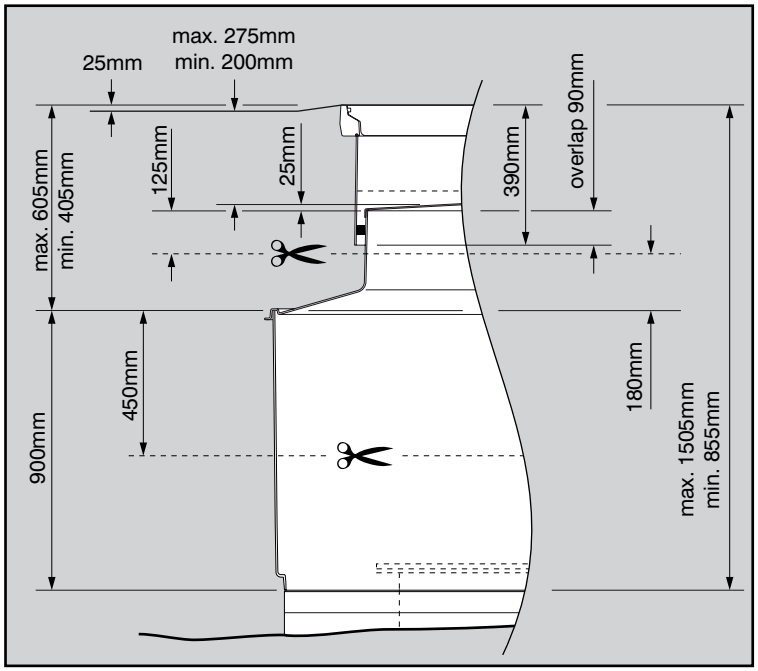
30 Place the corbel onto the sump (only 'dry fit' the corbel do not bond at this stage). Check the measurement from the top of the corbel to the string line, which is set 25mm above the general grade level. Check all sides of the sump and select the largest and smallest measurement to take account of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



31 Refer to this measurement chart;

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	Option 1: If by trimming material (max of 125mm) from the corbel turret brings the 'clearance dimension' into the 300 to 225mm range then material only needs to be trimmed from the corbel turret and skirt. Trim the skirt so that the overlap between the corbel turret and skirt is between 90 and 120mm. Option 2: If by trimming 125mm from the corbel turret does not bring the 'clearance dimension' into the 300 to 225mm range then the remaining material must be removed from the sump. A maximum of 450mm can be removed from the sump. Trim the corbel and skirt as described above in option 1.
more than 300mm	The burial depth of the tank is greater than the maximum burial depth of the standard S15CR-390 sealed system. Bond a 300mm extension onto the sump. Then proceed as above.





See following page for extension bonding instructions

S15CR-390 Installation Guide
(bonding the extension / chamber)

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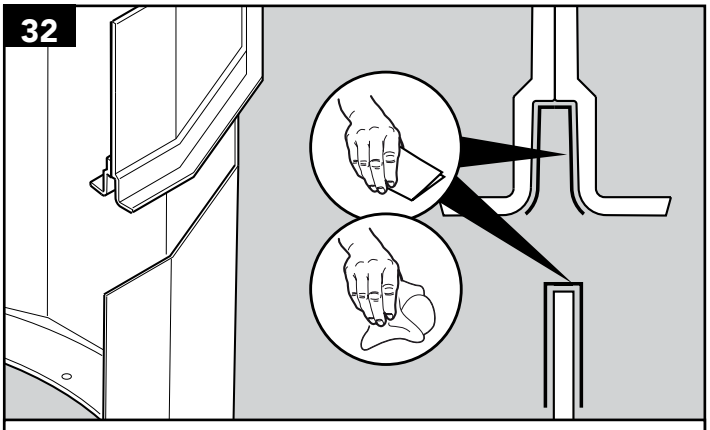
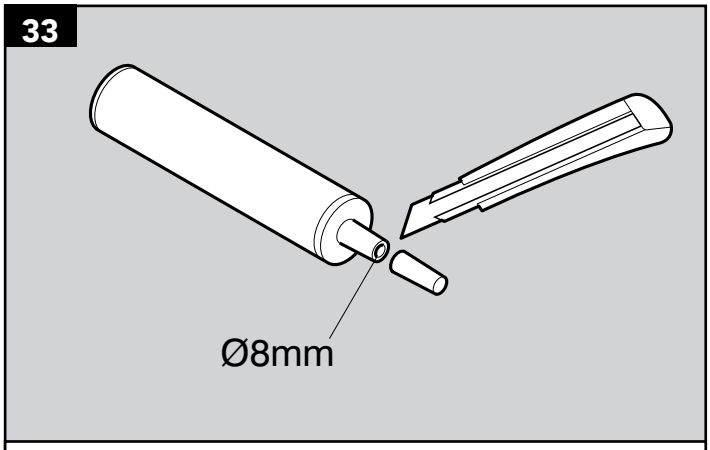
32



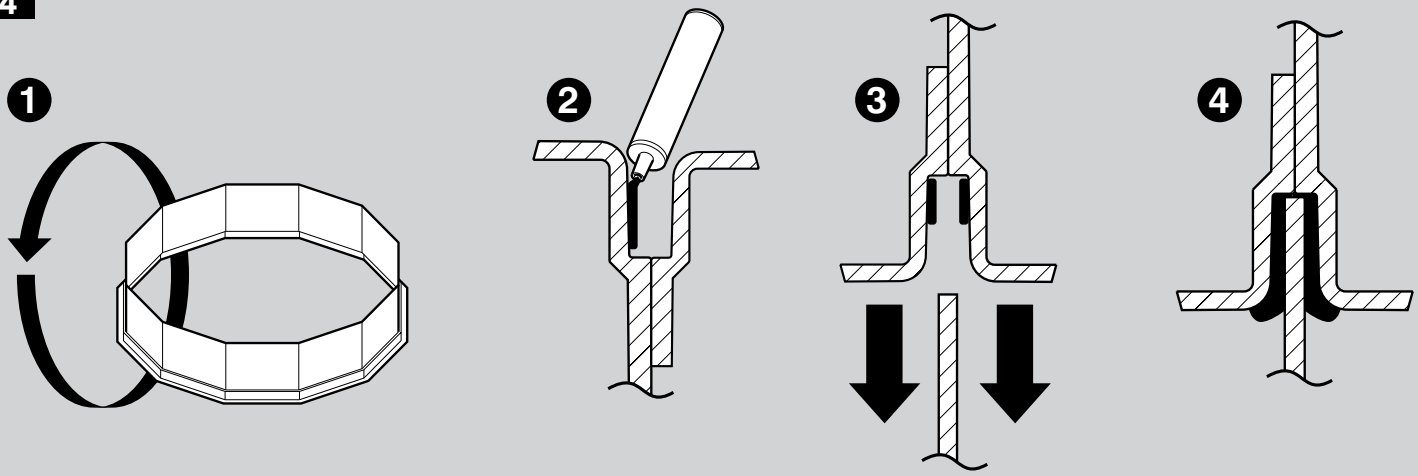
Abrade and wipe with a degreasing solvent the sump top edge / wall and the extension recess shoulder

33



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

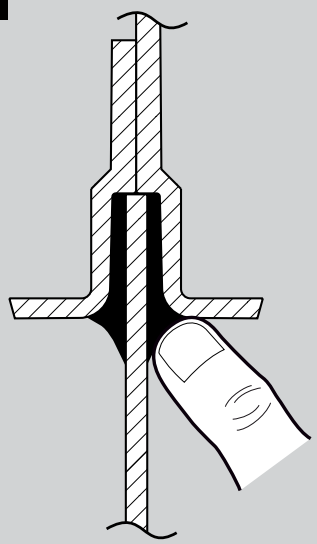
34



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.

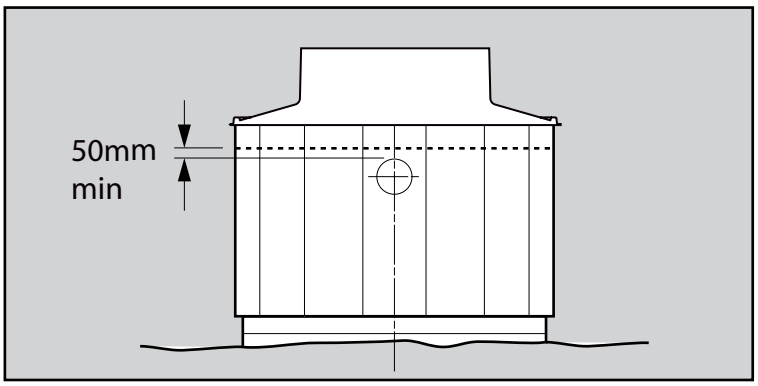
35



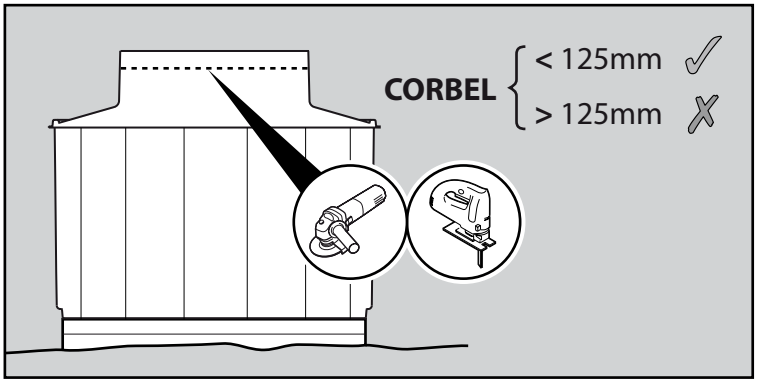
Apply a fillet of adhesive sealant (same nozzle size) to the external horizontal joint and smooth off.

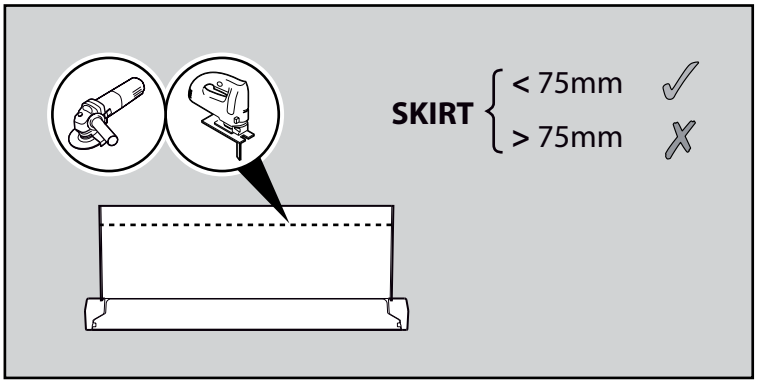
S15CR-390 Installation Guide
(Acheiving the correct height)

36 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.

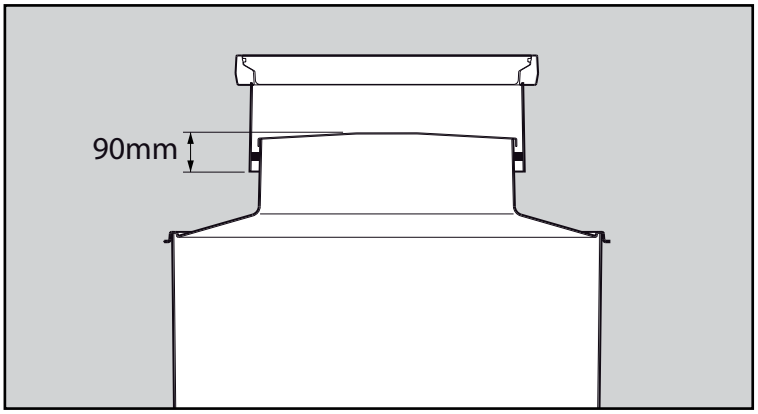


Important Note: Trim the corbel and skirt so that the clearance from the top of the frame to the top of the corbel falls in the range 225 to 300mm and that the overlap between the skirt and corbel ranges between 90 and 120mm.





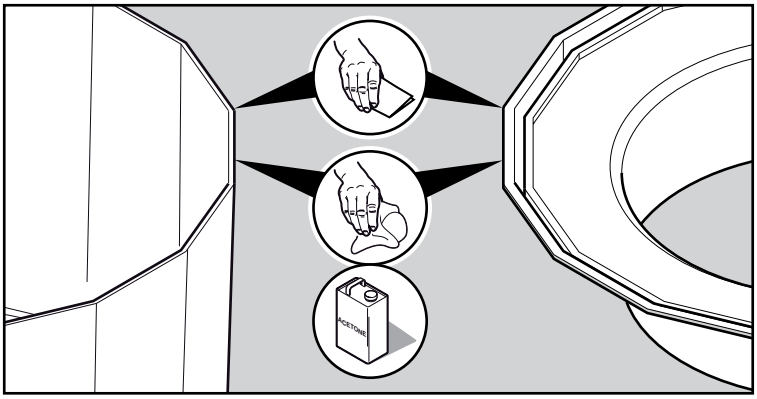
37 Ensure that you have a min overlap of 90mm between the skirt and corbel, to allow space to install the seal kit.
NB. On installations with very high water tables (up to concrete pad) refer to special instructions, overlap increases to 120mm.



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

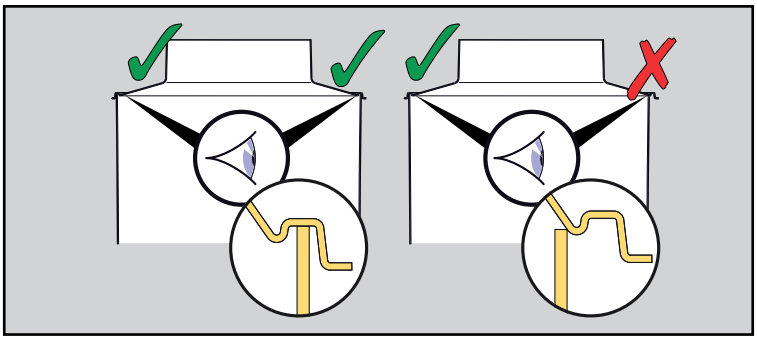
S15CR-390 Installation Guide
(Bonding the corbel)

38 Abrade and wipe with a degreasing solvent the groove of the corbel and the internal and external walls of the sump to a depth of 50mm.



39 Dry fit the corbel on the sump to ensure it fits - push corbel groove onto sump wall,

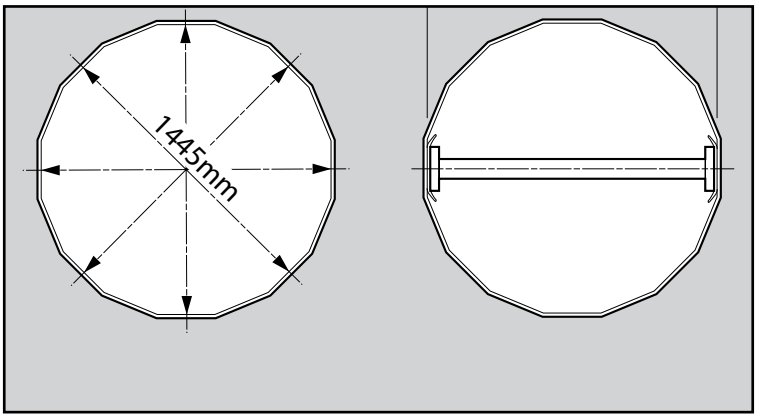
If it does not fit, pipework or lamination may have distorted the sump wall shape.



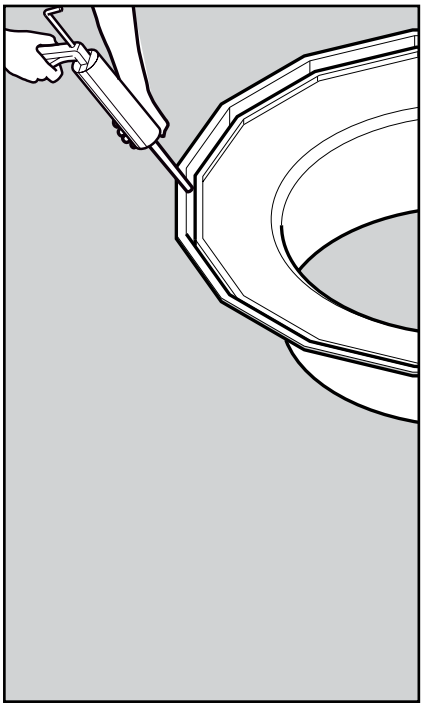
40 Measure distance between opposite walls, this should be 1445mm. If less than this you will need to brace out the sump.

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

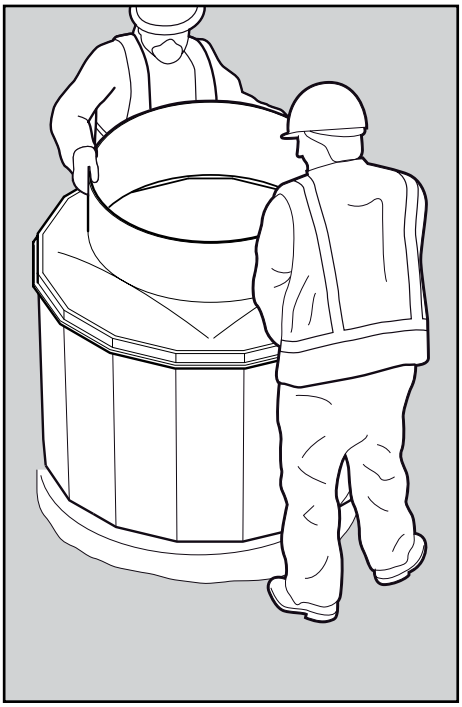
Repeat this process on all walls to get the correct shape.



41 Apply 2 tubes of soudaflex 40fc sealant in the groove of the corbel. Sealant should fill 1/2 the groove.



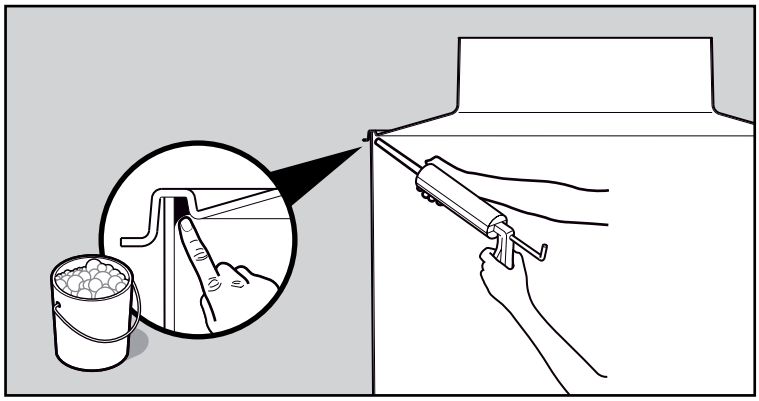
42 Place the corbel on the sump using 2 people and push it into position.



S15CR-390 Installation Guide
(Bonding the corbel)

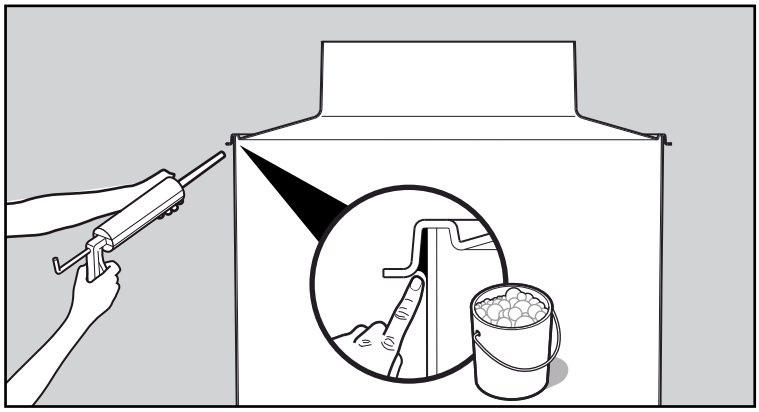
43 Seal around the inside edge of the corbel joint from inside the sump. Smooth off the sealant with soapy water.

Use 1.5 tubes of soundaflex 40fc sealant.



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

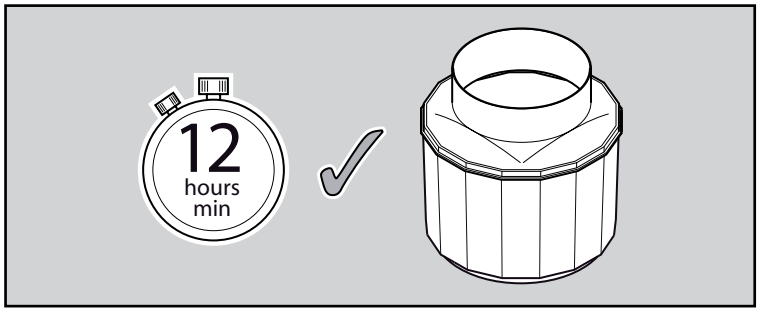
Use 1.5 tubes of 40fc sealant.



(Performing Corbel Vacuum Test)

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

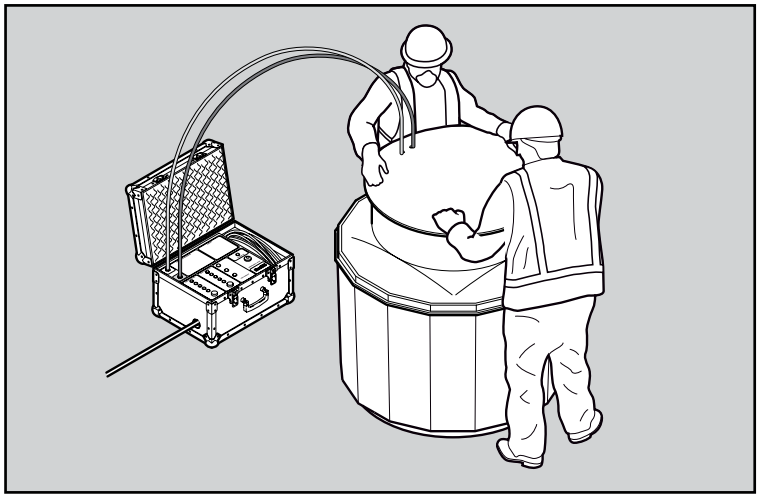
Do not disturb the sump during this time.



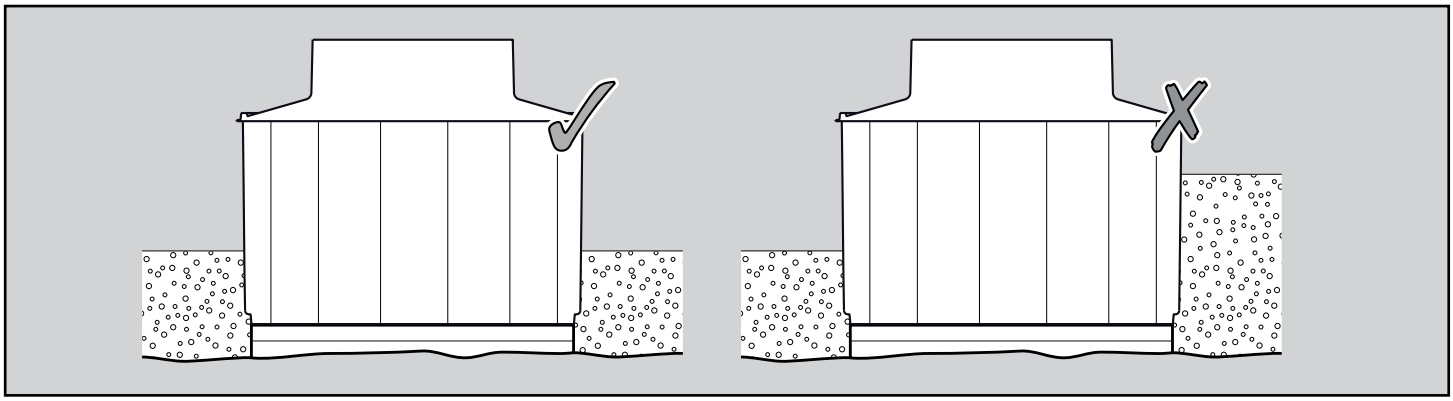
46 Ensure all pipework and electrical entries have been completed before vacuum testing, this is a final test for all penetrations in the sump.

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

Refer to vacuum testing instructions for correct method.

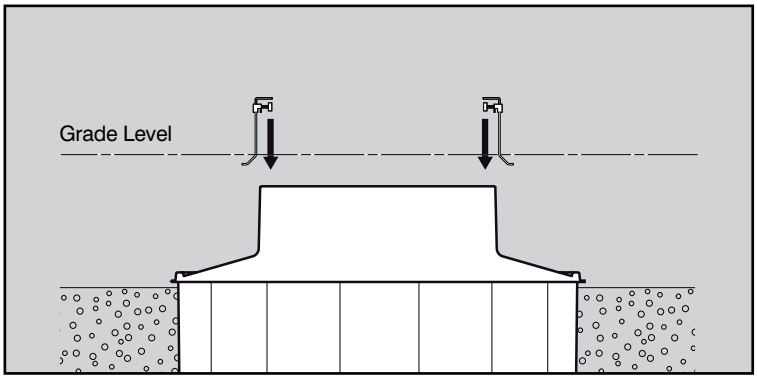


47 Once the corbel test has been performed with a PASS result, the area around the sump can be carefully backfilled with peagravel or sand. Back-fill equally around the sump in layers to prevent damage or deformation.



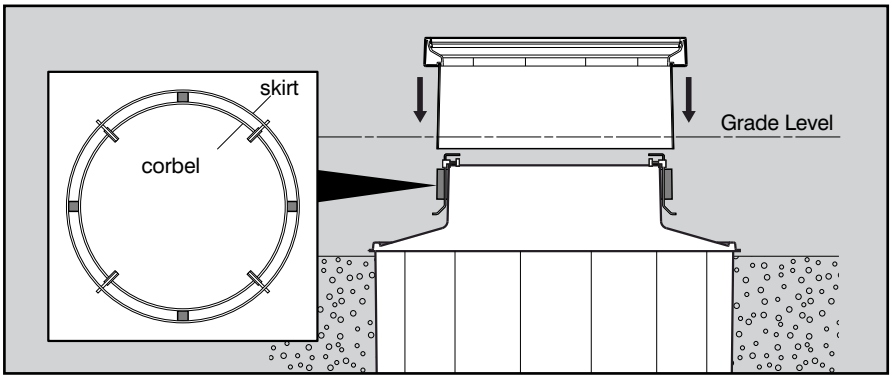
(Adjusting the Skirt & Frame to Grade Level)

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

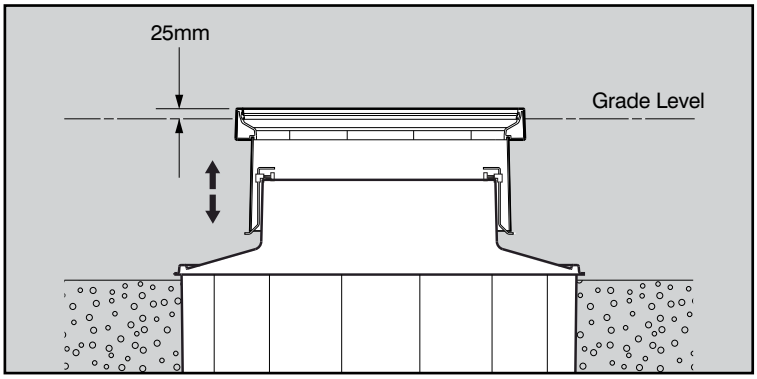


49 Put the skirt and frame on the hangers.

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.



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



S15CR-390 Installation Guide
(Concreting)

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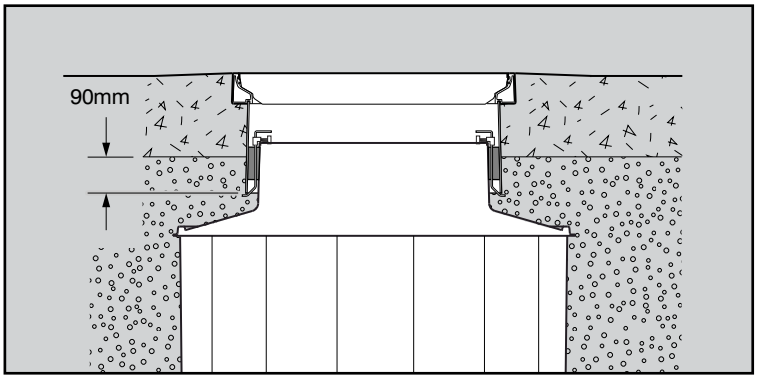
51 Ensure the void between corbel and skirt is kept free from concrete and a depth of 90mm overlap minimum is maintained, (120mm on high water table installations).

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

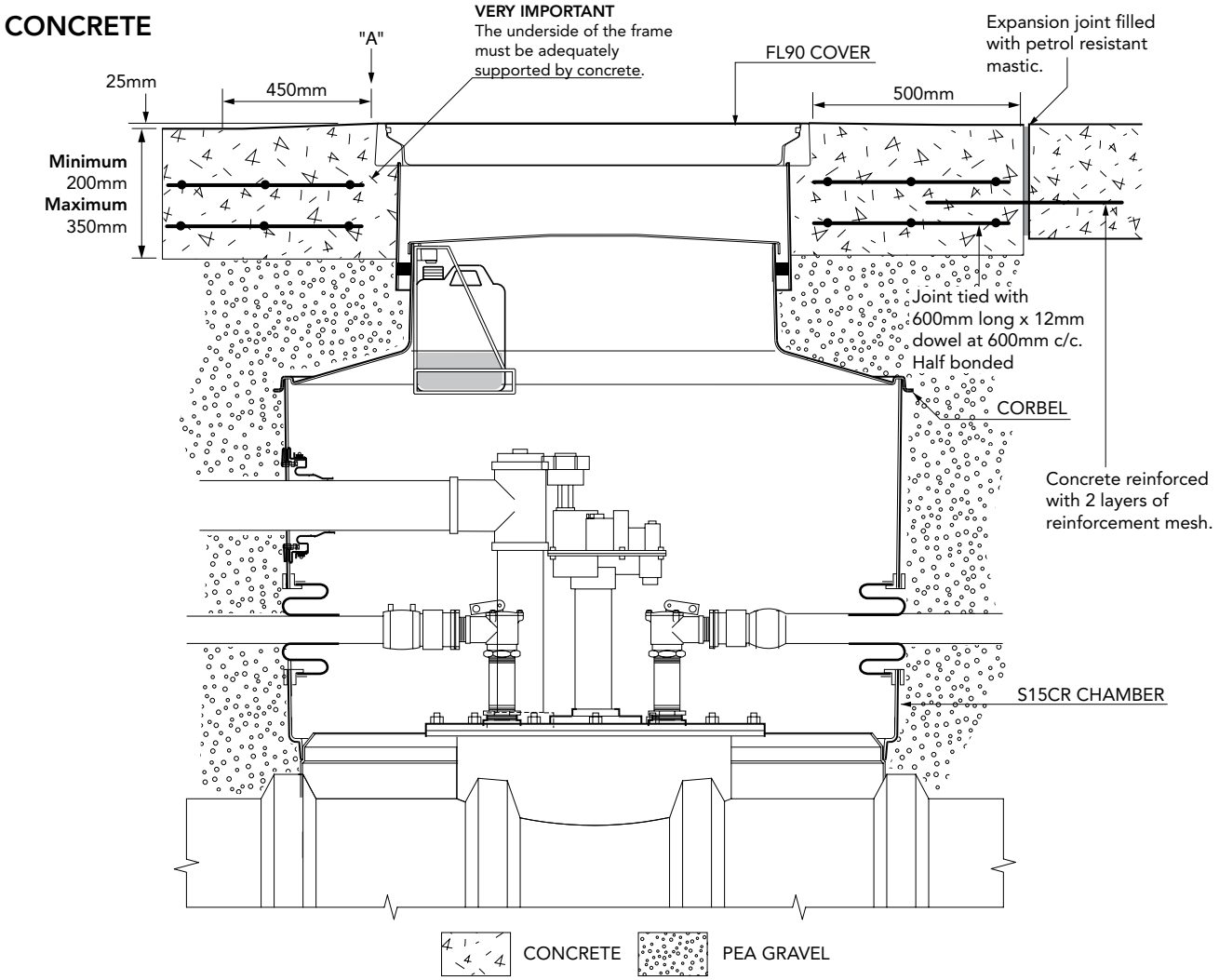


52 Complete backfilling to appropriate level. Frame must be supported by a minimum depth of 200mm of concrete

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.

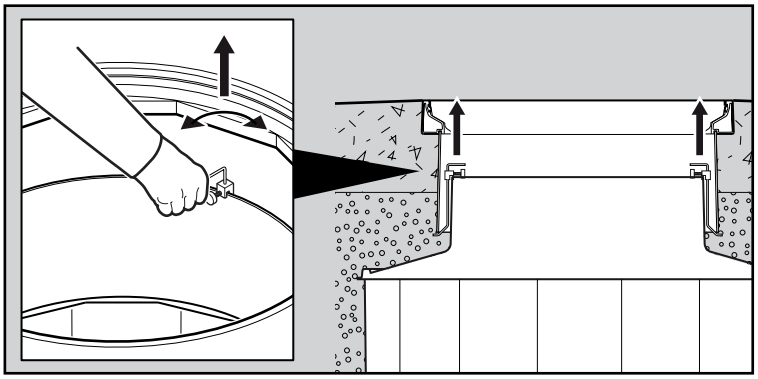
VERY IMPORTANT
OUTER EDGE "A" OF FRAME SET 25MM ABOVE GENERAL FORECOURT AREA WITH CONCRETE RAMPED AWAY OVER 450MM.

TYPICAL INSTALLATION



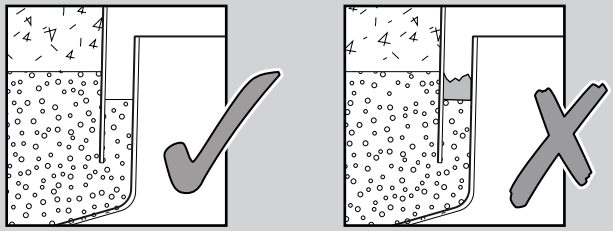
53 After minimum concrete cure time, hangers can be removed. Loosen the 'T' knob, push down on the rod, turn the rod through 90˚ and pull rod up to remove.

Complete other third party equipment installation inside the sump.



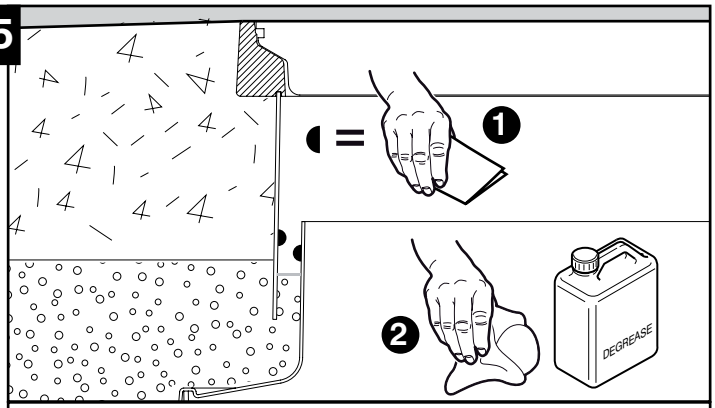
(Installation of corbel / skirt sealant)

54



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

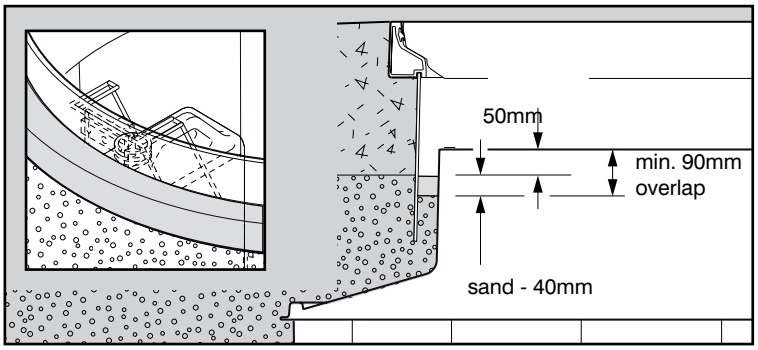
55



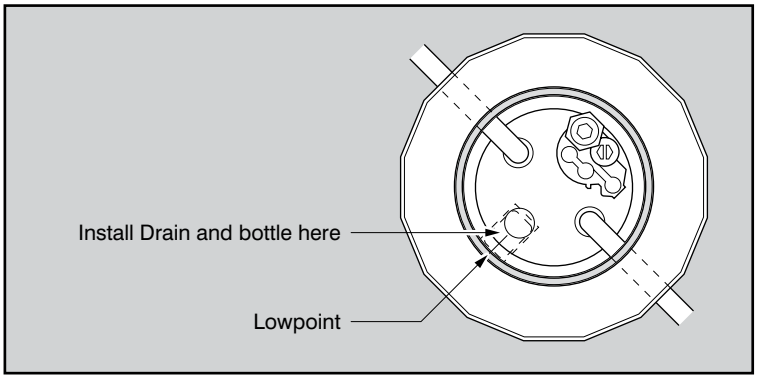
Abrade surface of corbel and skirt with sand paper.

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

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



57 Drain and bottle should be positioned away from pipe risers and stp. The drain must be installed at the created low point to do this. Compact the sand in a way to create a low point 10-15mm lower than the surrounding sand.



S15CR-390 Installation Guide
(Installation of corbel / skirt sealant)

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58 **Mixing and Application**

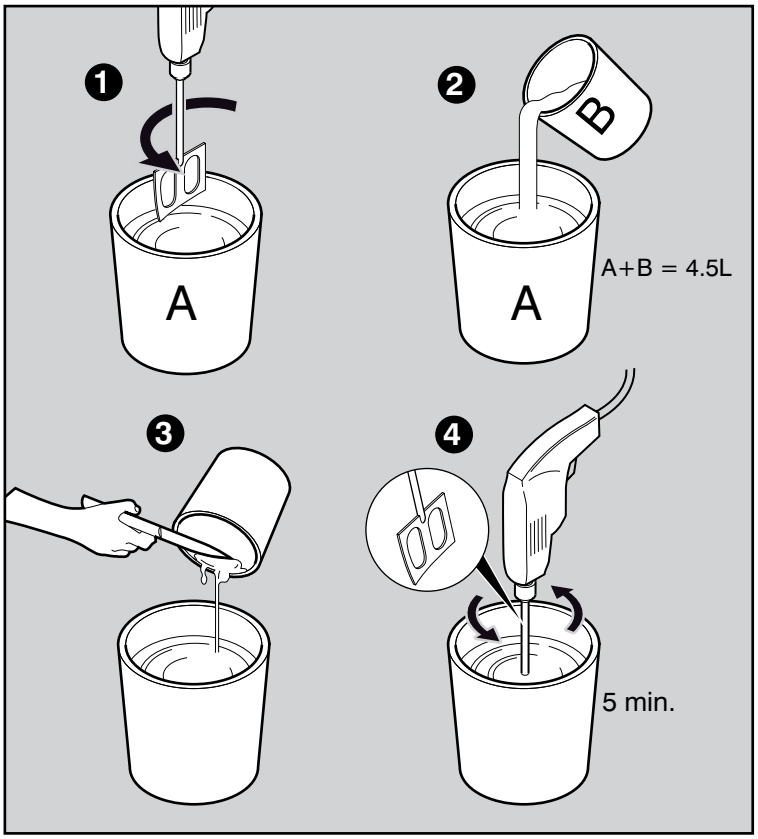
Application Temperature +5 to +45˚C

(Do not apply at temperatures below +4 degrees ˚C)

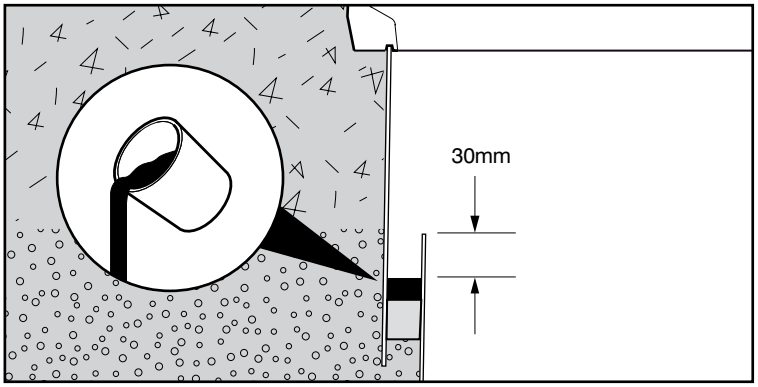
Pot Life	45 minutes @ 25˚C	
Cure Times @ 25˚C	Tack Free	2 1/2hrs
Full Cure	2 days	

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.

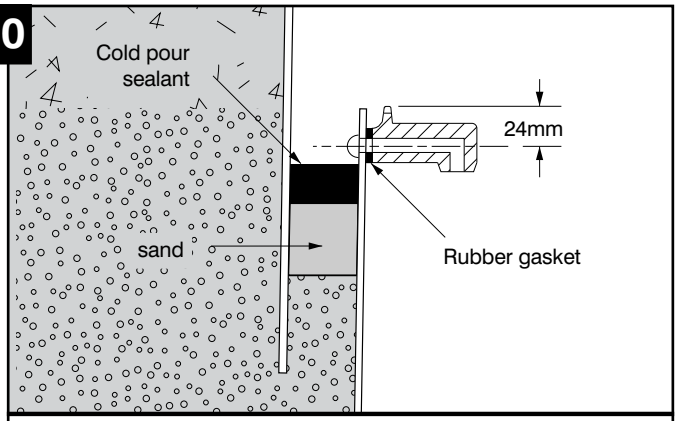
WARNING If white sediment is not added to mixture, or contents are not mixed thoroughly using an electric mixer - the sealant will not set and will need replacing



59 1 set of cans A+B will seal 2 sumps. Decant mixture from can A into can B to have more control when puring 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).



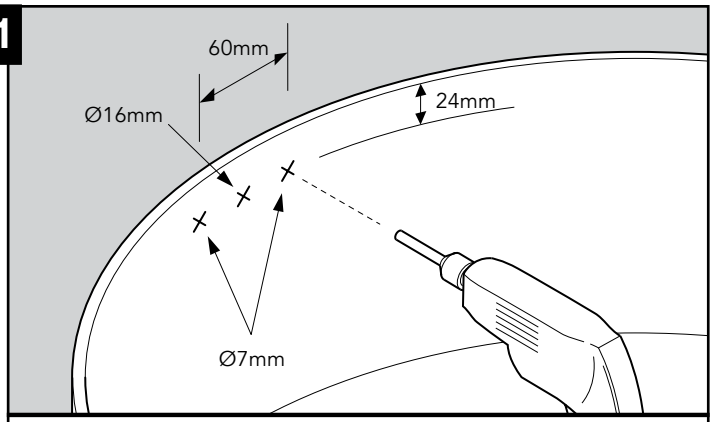
60



Fitting Bottle Hanger

When the sealant is tack free the bottle hanger may be fitted. Ensure that when the bottle hanger is fitted the water will drain down the spout.

61

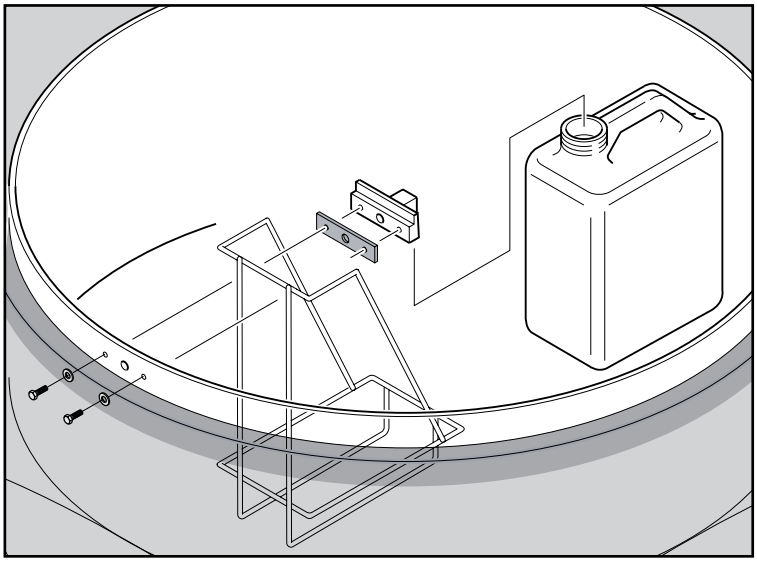


Mark out the position of the two holes to be drilled 24mm down from the top edge of the Corbel and 60mm cross centre. Drill the two Ø7mm holes into the Corbel walls.

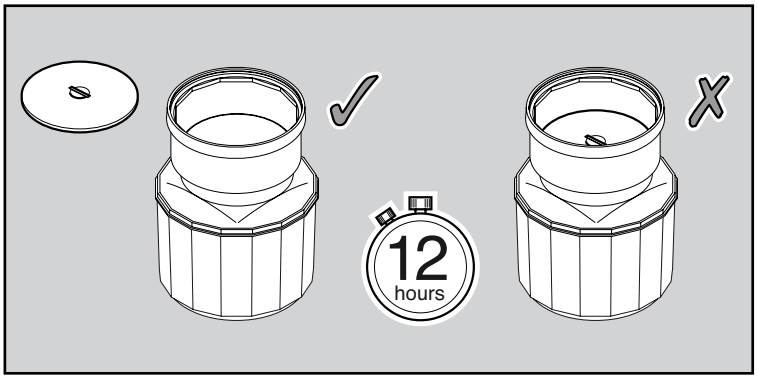
Also mark out the position of the drain hole to align with the hole in the drain spout and drill 1 No. Ø16mm through the corbel wall.

62 Ensure the rubber gasket is fitted to the mating surface of the bottle hanger. Secure the Bottle Hanger to the Corbel wall with 2 Nuts and washers.

Locate the Condensation Bottle into the Bottle carrier and suspend the Bottle Carrier from the Bottle Hanger.



63 Do not install the internal lid until the sealant has set. Wait overnight.



64 **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.

When testing at this stage the drain hole which is drilled in the corbel turret must be blanked off to achieve a test.