



SMARTSOAK®

RESIDENTIAL STORMWATER
MANAGEMENT SYSTEM

INSTALLATION GUIDELINES

G 111 002 | VERSION 1 | AUGUST 2022



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INSTALLATION SMARTSOAK® SOAKAGE SYSTEM

This guide is generic in nature and would be superseded by any project specific installation guidance.



1 EXCAVATION

Excavate the trench to the required dimensions (refer to product brochure) ensuring excavation footprint is wide enough to allow for small compactor around the edge of the SmartSoak modules (typically 300-500mm). Trench depth must allow for 600mm cover over the modules for trafficable applications and 300mm for non-trafficable applications.



2 PREPARE THE BASE

Place, level and compact 50-100mm of bedding material consisting of coarse sand or free draining aggregate with a maximum particle size of 20mm at base of excavation (a free draining coarse sand often works well).

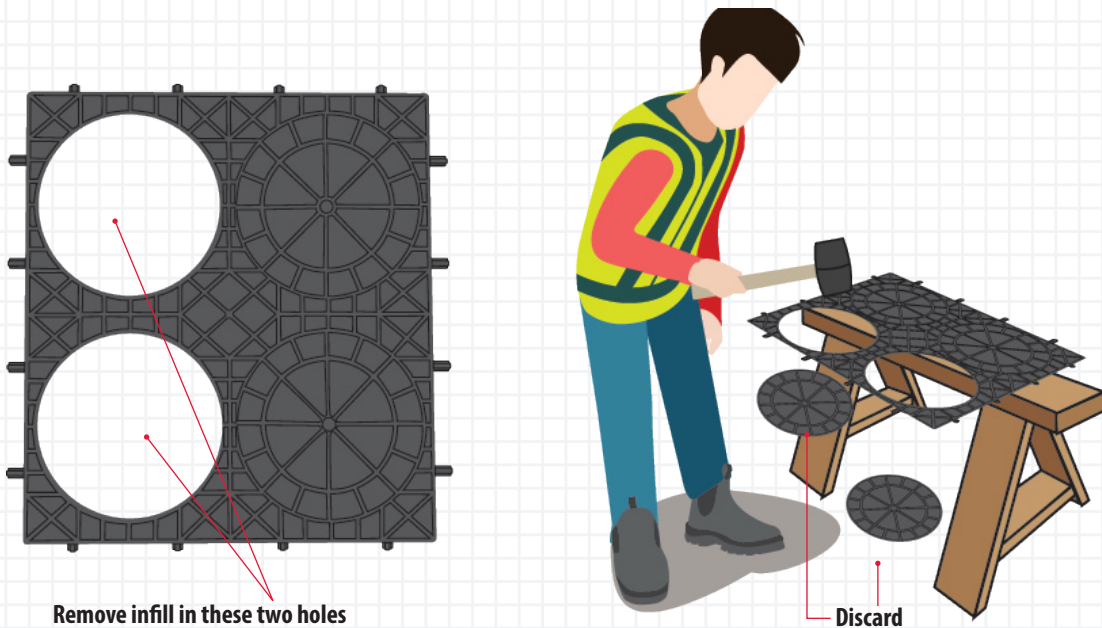


3**LINE THE EXCAVATION**

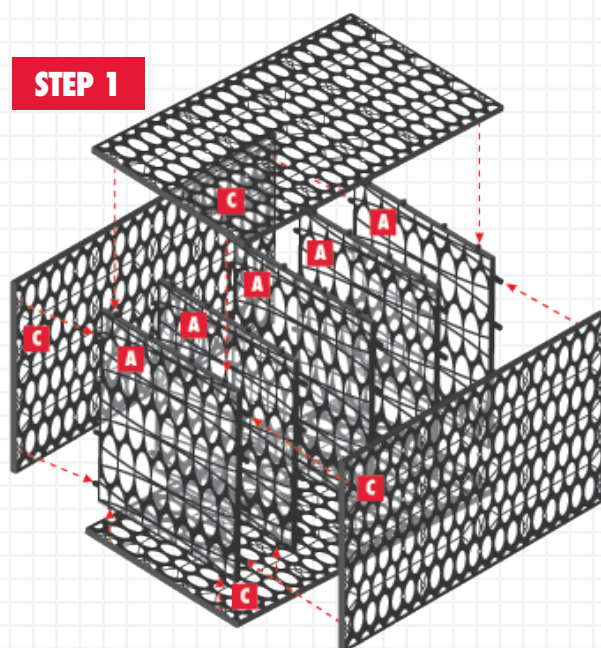
Line base and sides of excavation with DuraForce® AS410 Non-Woven Geotextile. Check your engineer drawings to check whether an impermeable liner is required or not.

**4****LINEAR ACCESS PLATE PREPARATION**

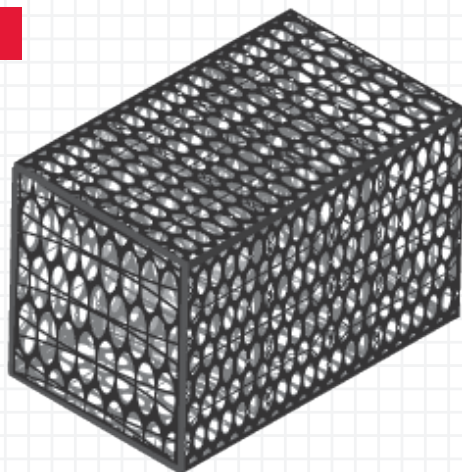
You should have received 15 square plates with perforated holes in that have sacrificial infill. Using your rubber mallet (or knife) gently tap out 2 of these infills while resting the other 2 on a sawhorse/bench.

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5 DOUBLE MODULE ASSEMBLY GUIDE



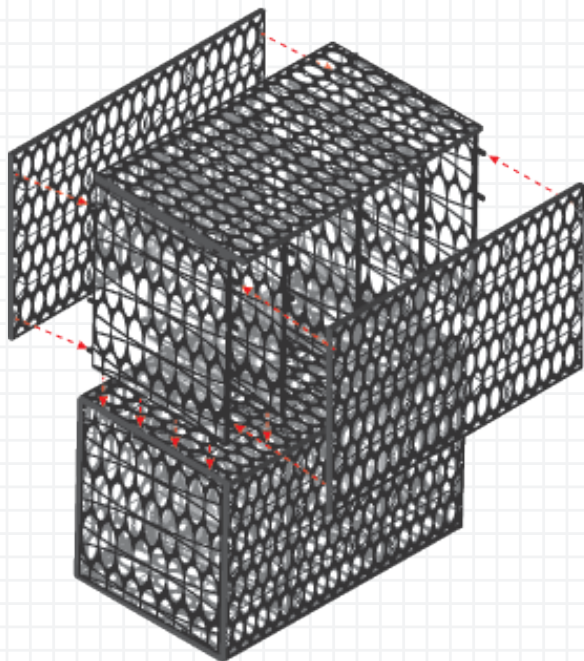
STEP 2



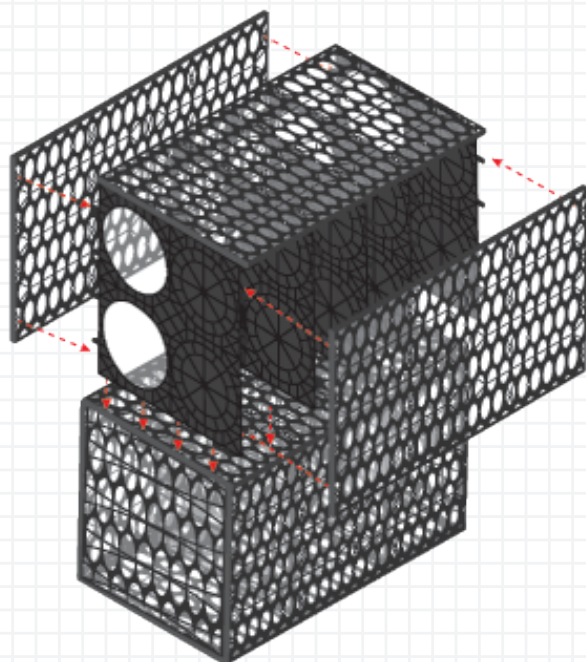
Using a rubber mallet complete the module base layer by applying firstly a rectangle plate on top, and then on the other side (in this order).

STEP 3 MODULE ASSEMBLY - COMPLETE TOP LAYER

Using the top of the module are coded in step 5, press an additional 5 plates in using your rubber mallet and finish by adding, rectangle plates to top and sides. In the top layer of 3 of these modules you will need to use the linear access plates with preferred holes. All other modules will have standard square plates.



STANDARD MODULE



LINEAR ACCESS MODULE



For impermeable system installation contact Cirtex®

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STEP 4 MODULE ASSEMBLY - END RESULT

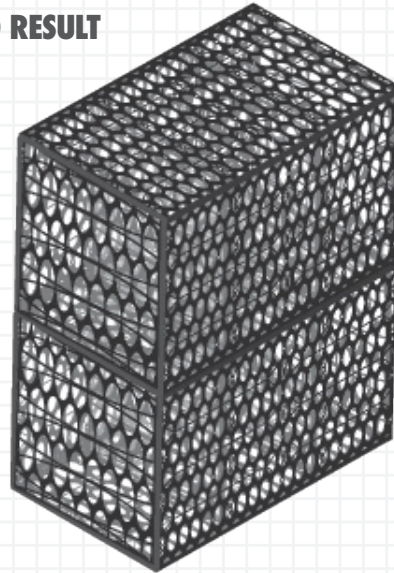
Once assembly of the modules is complete you should have 3 linear access modules and a number of standard modules to suit:

$3.5\text{m}^3 = 12$ standard modules

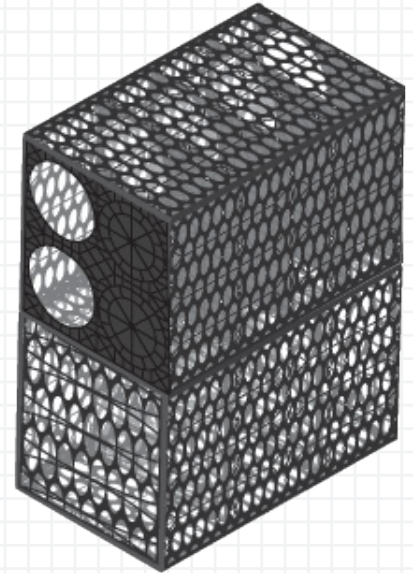
$5\text{m}^3 = 18$ standard modules

$7\text{m}^3 = 27$ standard modules

$10\text{m}^3 = 39$ standard modules



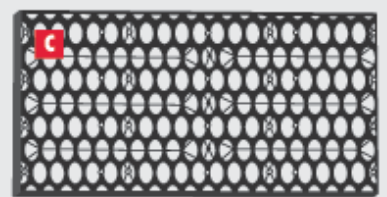
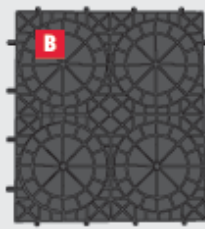
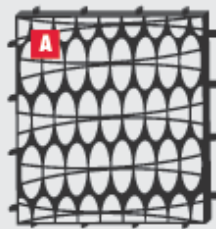
STANDARD MODULE



LINEAR ACCESS MODULE

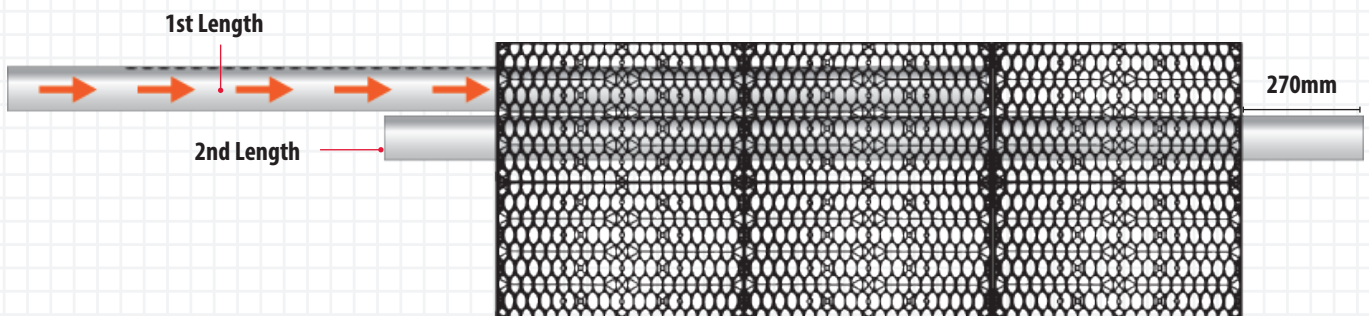
Components you will need

- A** Small Plate
- B** Linear Access Plate
- C** Large Plate
- D** Rubber Mallet



6 INSERT LINEAR ACCESS PIPES

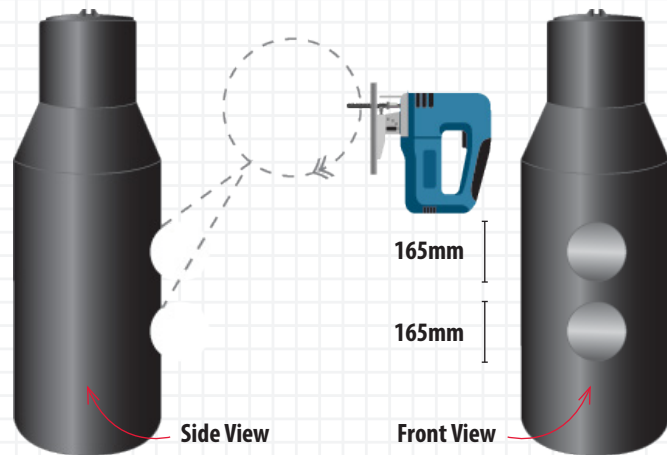
Insert the two 2.7m lengths of pipe into the linear access modules (using the holes created). The pipe should be positioned centrally with 270mm of pipe sticking out each end. The perforations must be facing upwards. Cable tying the modules together can help with this process.



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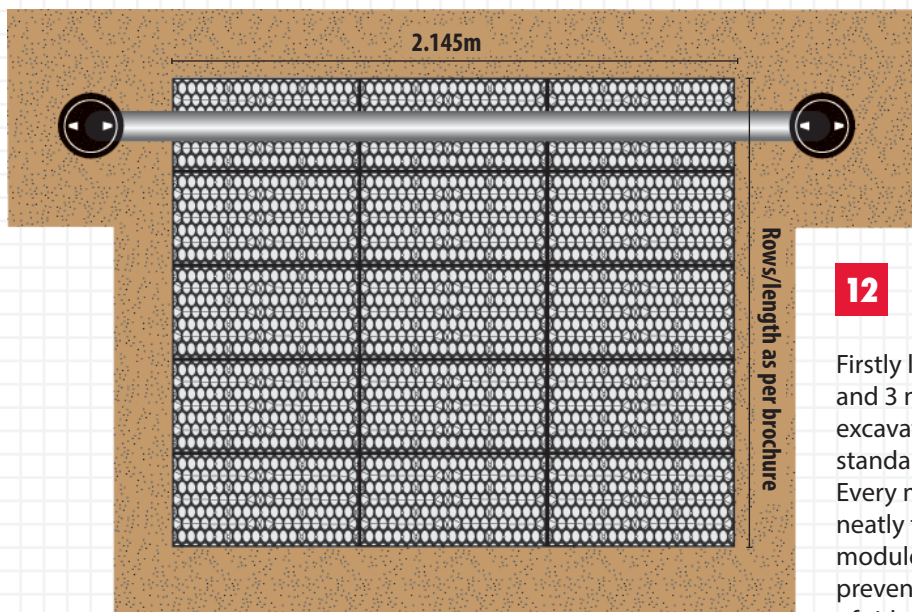
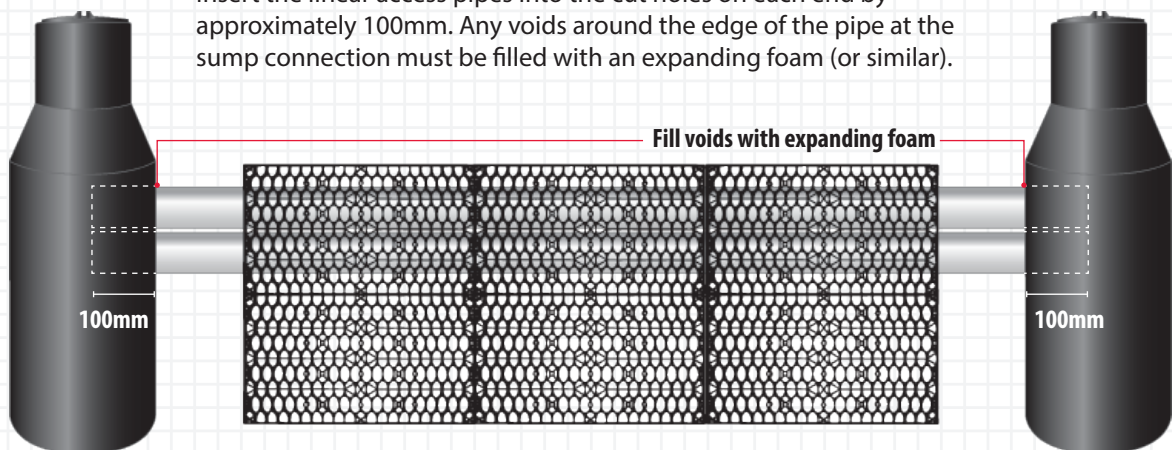
10 PREPARE SMARTSOAK SUMPS

Once you have determined the depth of the modules and sumps, mark out 2 x 165mm dia holes in both sumps to allow them to be connected to the linear access pipe. Cut out holes using a jigsaw (or similar). It is recommended to drill a starter hole before attempting to cut.



11 CONNECT SUMPS TO LINEAR ACCESS PIPES

Insert the linear access pipes into the cut holes on each end by approximately 100mm. Any voids around the edge of the pipe at the sump connection must be filled with an expanding foam (or similar).



IMPORTANT

For trafficable applications set sump down by approx 150mm.

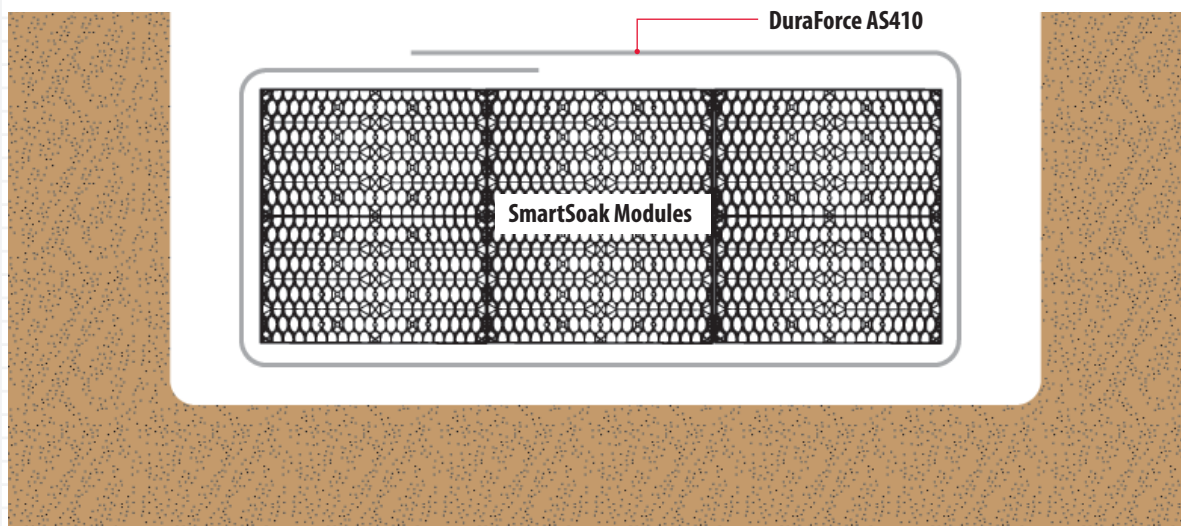
12 MODULE PLACEMENT

Firstly lift the SmartSoak sumps, pipes and 3 modules into the geotextile lined excavation, then continue to place the standard modules into the excavation. Every module should be positioned neatly together and then the perimeter modules can be cable tied together to prevent movement during compaction of sides.



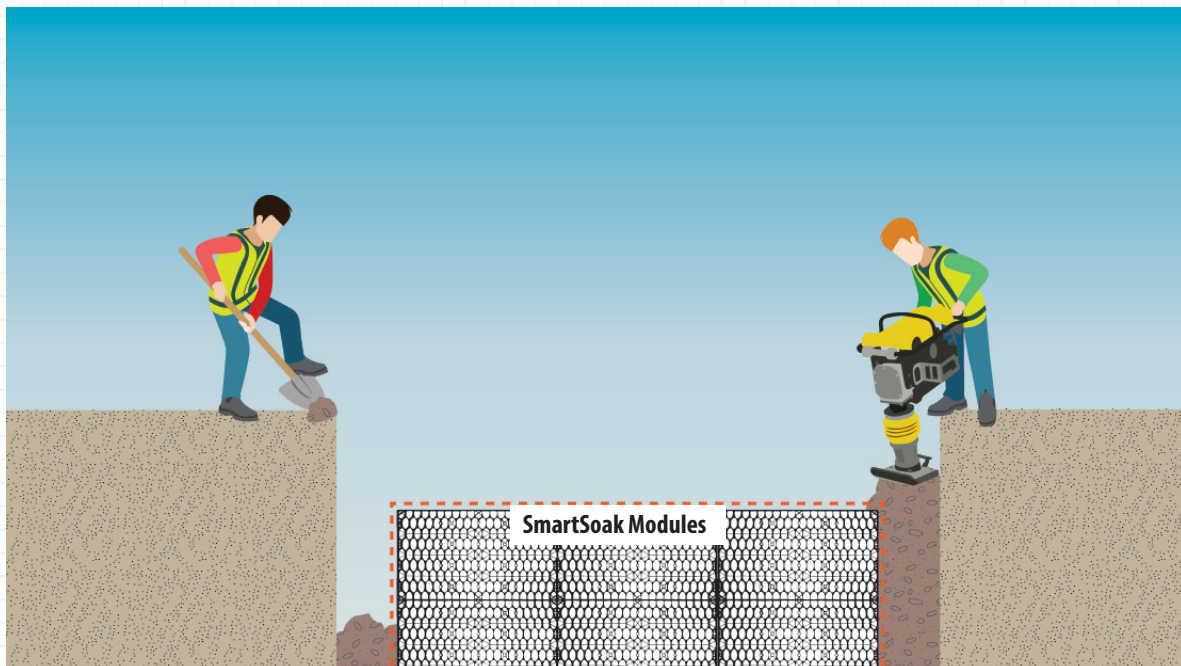
13 WRAP MODULES

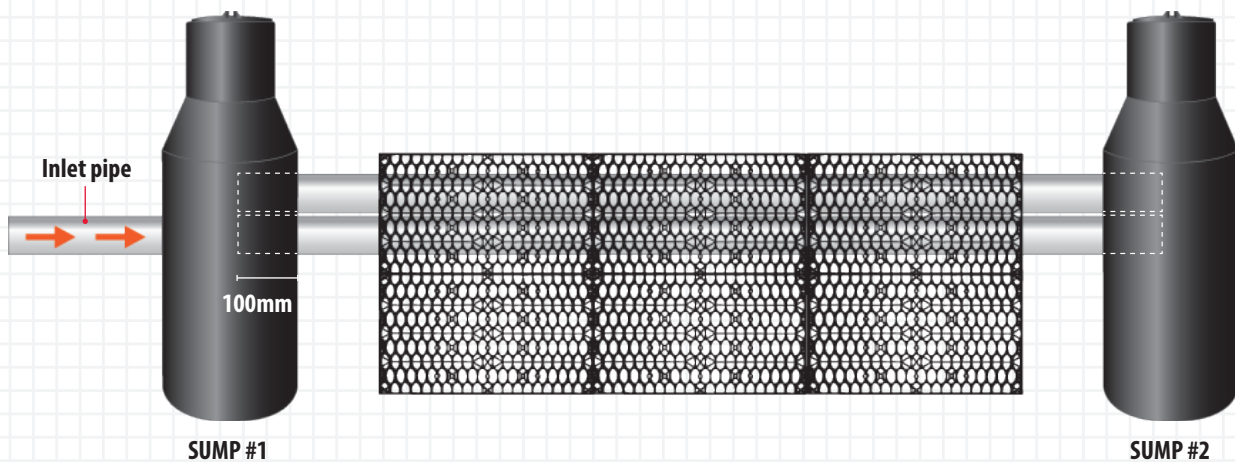
Using the excess DuraForce AS410 geotextile on the sides of the excavation wrap up the module sides and up over the top. Maintain a minimum of 300mm overlap at any joins.



14 BACKFILL SIDES

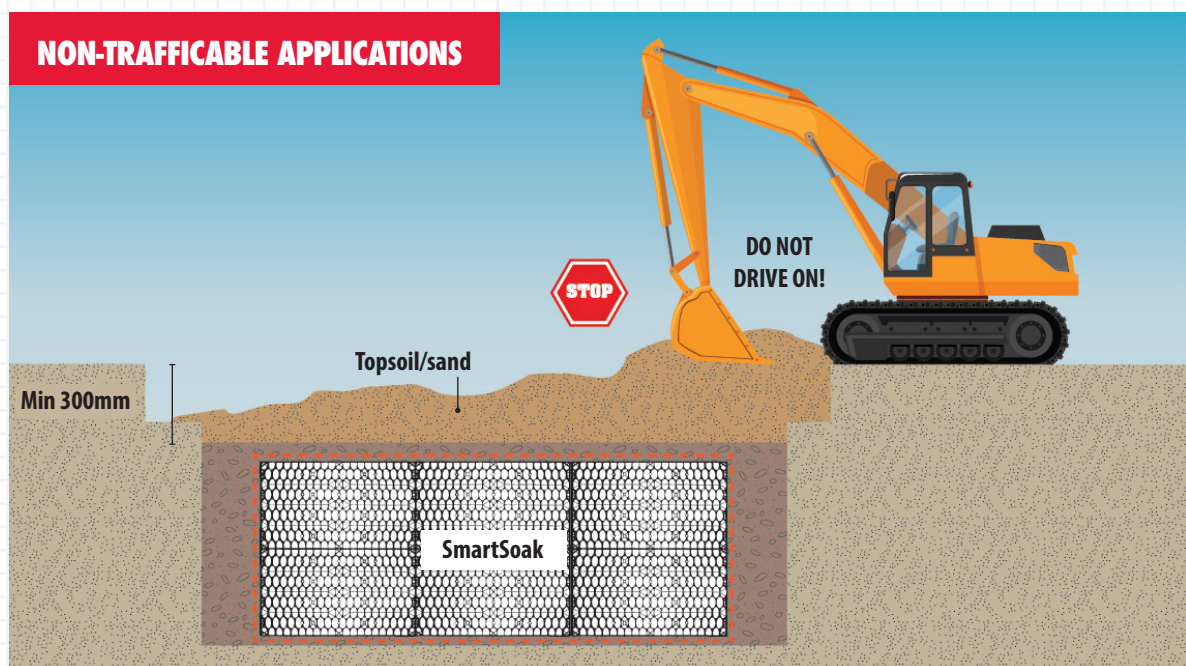
Backfill sides of SmartSoak tank using coarse sand or similar material to height of modules (particle size must be 20mm or less in size and **not** clay/topsoil). Compact in 300mm lifts using plate compactor or vibrating tamper.





15 CONNECTION TO SITE PIPE WORK

Connect the inlet pipe to one of the SmartSoak sumps ensuring it is a minimum of 300mm of the base. Refer back to step 10 to refresh yourself with the pipe connection steps.

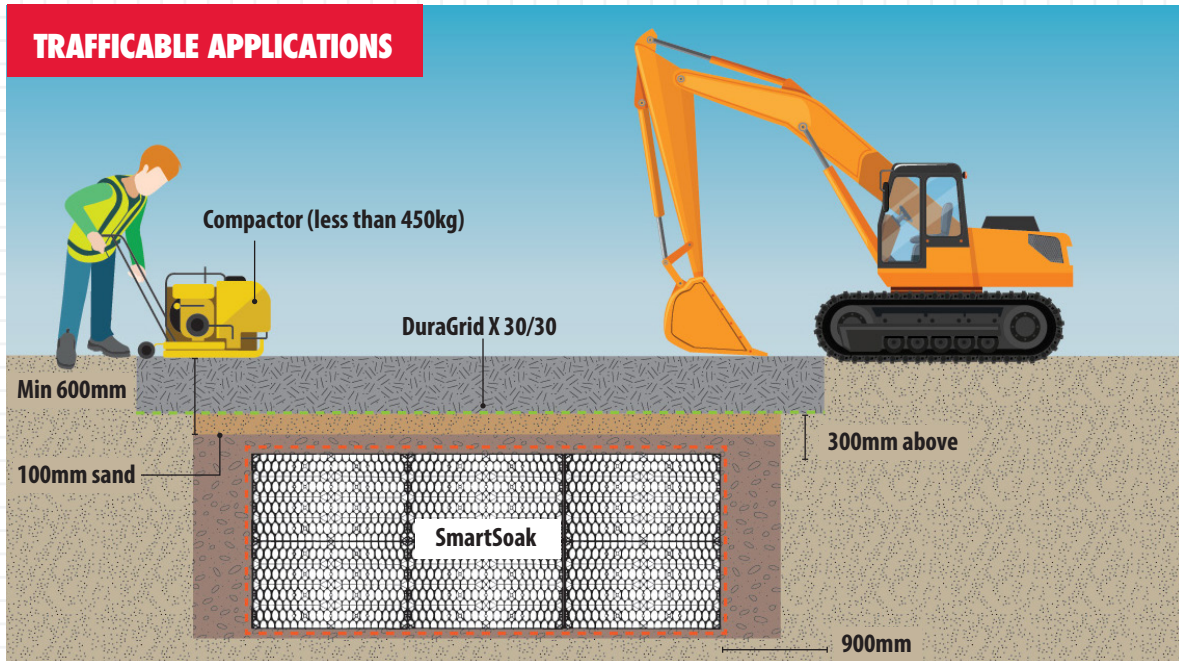


16A BACKFILL TOP - NON-TRAFFICABLE APPLICATIONS

Place and compact fill material on top using topsoil/sand. A **minimum** of 300mm depth must be maintained at all times.



TRAFFICABLE APPLICATIONS



16B BACKFILL TOP - TRAFFICABLE APPLICATIONS

1. Place a 100mm layer of sand over the tank, followed by a 200mm layer of quality crushed rock e.g. GAP40/GAP65 and compact using a walk behind plate compactor (less than 450kg).
2. Then place a layer of DuraGrid X geogrid on top ensuring that it extends 900mm beyond the tank edges (on all sides).
3. Assess depth of SmartSoak sumps in relation to final surface depth and ensure you leave sufficient space to later construct the surface lid and frame as per step 17.
4. Place final layer(s) of quality crushed rock and compact in 300mm layers. The total cover depth above the tank must be a minimum of 600mm and a maximum of 2m total.

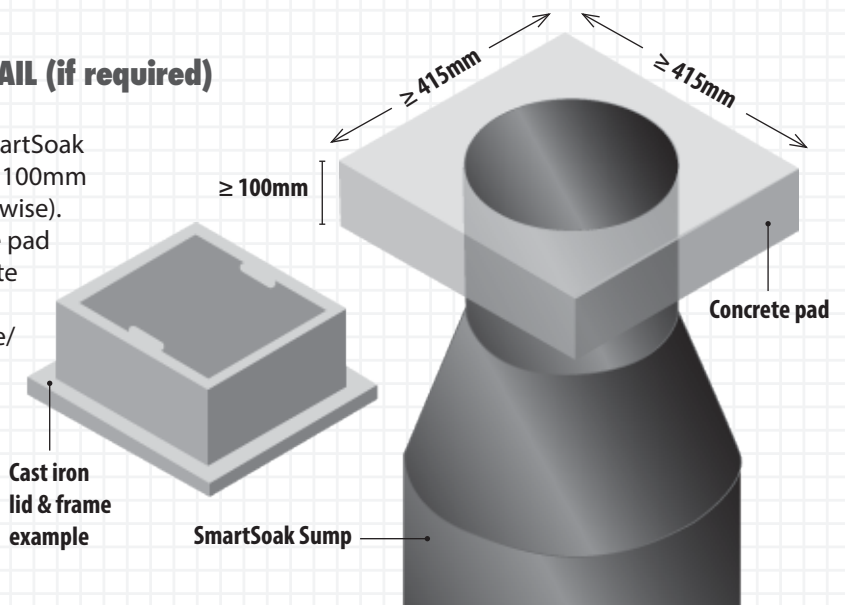
17 SMARTSOAK LID FINISHING DETAIL (if required)

1. Place concrete pad ring around each SmartSoak sump a minimum of 415mm x 415mm x 100mm thick (unless engineer has advised otherwise).
2. Place cast iron lid and frame on concrete pad (centrally over the sump) and lay concrete haunching.
3. Complete desired surfacing e.g. concrete/asphalt.



TIP

Cast iron lid and frames are supplied by others.



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APPROVALS:

SmartSoak® RainSmart® stormwater modules are pre-approved for use with Auckland Council and Waikato Local Authority SHARED SERVICES.

