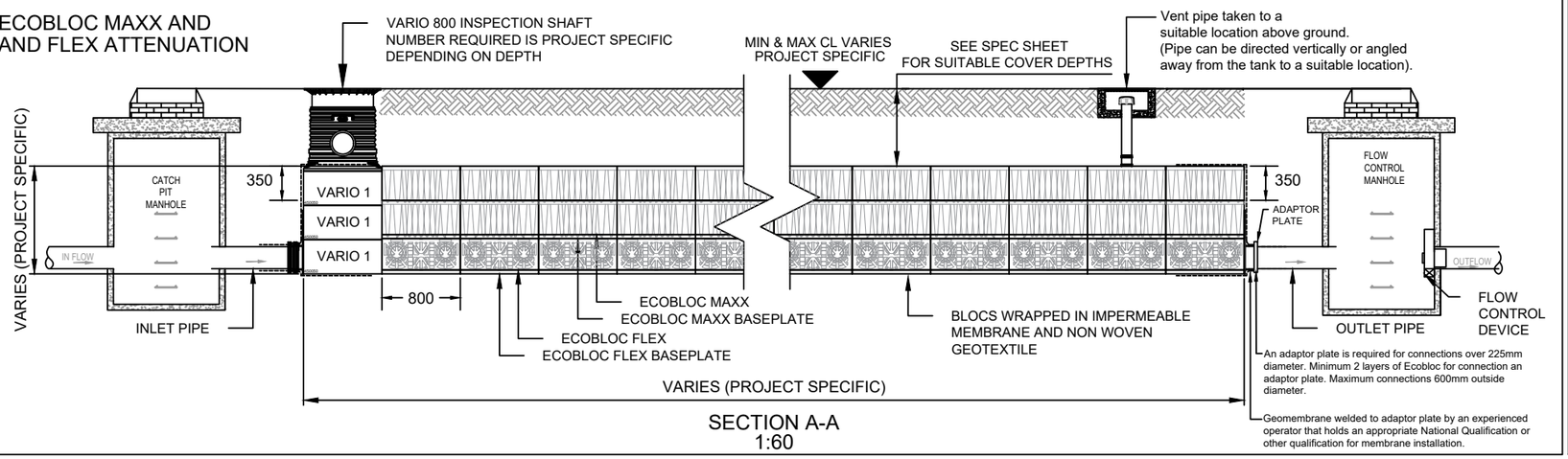
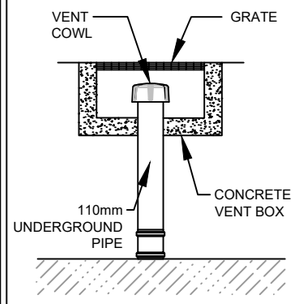
ECOBLOC MAXX AND AND FLEX ATTENUATION



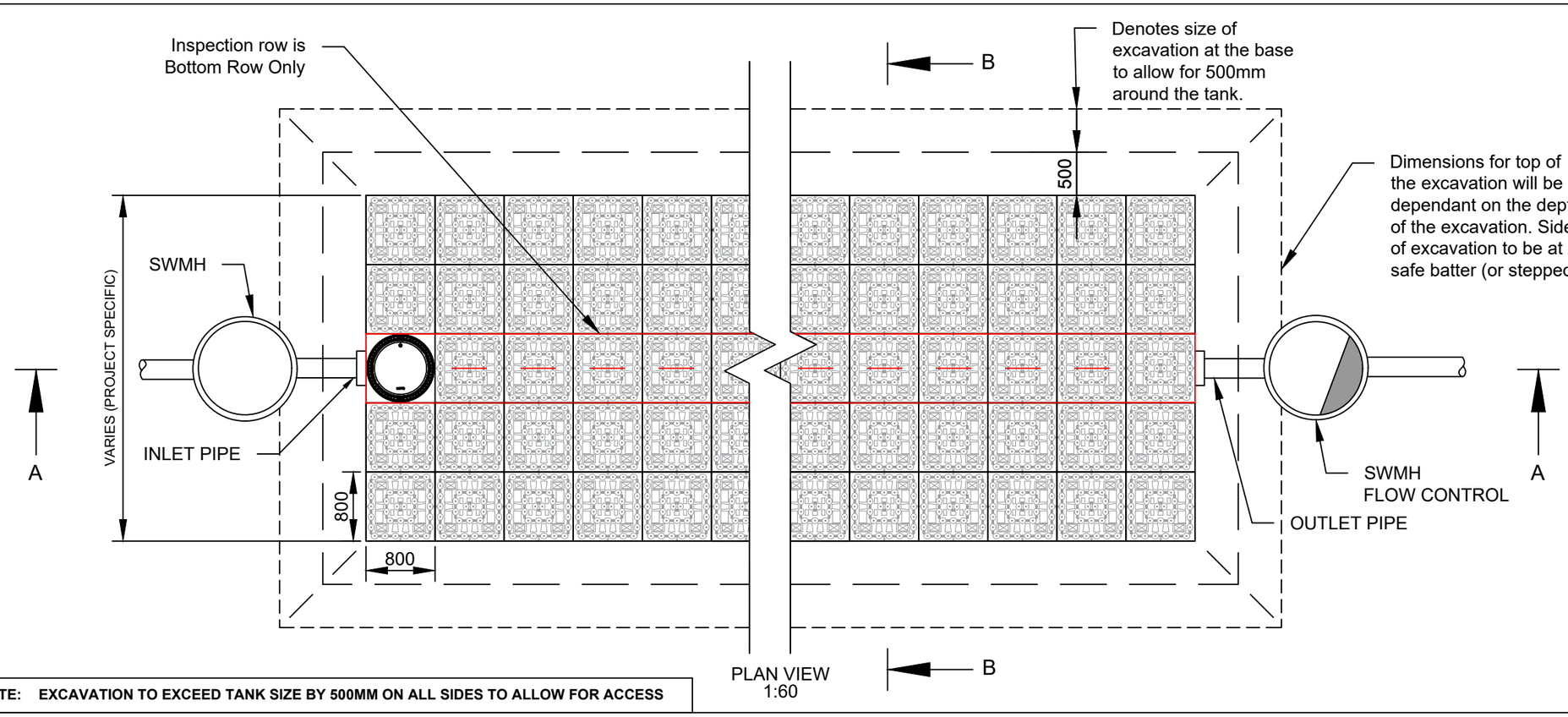
SECTION A-A
1:60

VENT DETAIL

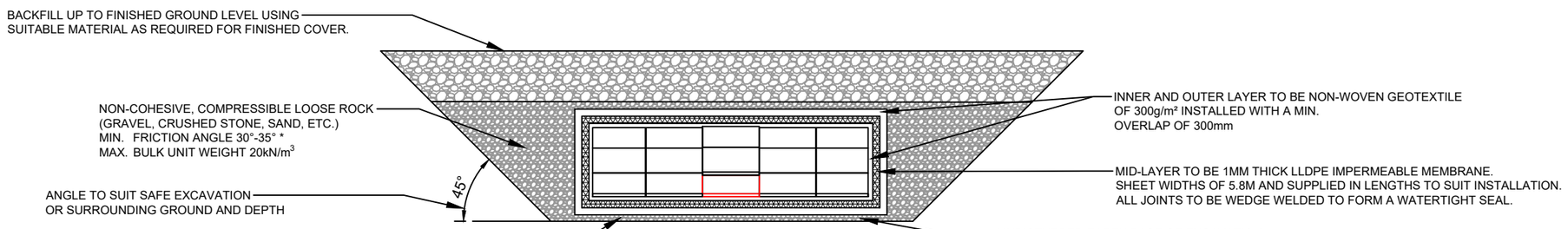


1:25

NB. The attenuation tank must be vented to a suitable location above ground and it is recommended to have one Ø110mm vent pipe for every 7,500m² of impermeable catchment area.



NOTE: EXCAVATION TO EXCEED TANK SIZE BY 500MM ON ALL SIDES TO ALLOW FOR ACCESS



SECTION B-B
1:75

* These values depends on installation conditions.
Please, contact GRAF Technical team for more details.

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ECOBLOC MAXX

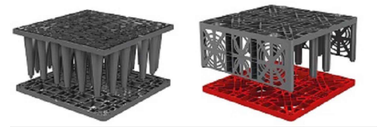
	Crate	Baseplate
Dimensions (mm)	800 x 800 x 350	800 x 800 x 40
Gross Volume (m3)	0.225m³	0.025m³
Net Volume (m3)	0.217m³	0.020m³
Material	Polypropylene	Polypropylene
Weight	9kg	4kg
Void Ratio	>96% depending on number of layers	
Inspectable	Yes, when combined with EcoBloc Flex	

ECOBLOC FLEX

	Crate	Baseplate
Dimensions (mm)	800 x 800 x 320	800 x 800 x 40
Gross Volume (m3)	0.205m³	0.025m³
Net Volume (m3)	0.195m³	0.020m³
Material	Polypropylene	Polypropylene
Weight	8kg	4kg
Void Ratio	>96% depending on number of layers	
Inspectable	Yes	

MAXX AND FLEX COMBINATION

Conform to load requirements of AS5100



REV.	DESCRIPTION	BY	DATE
2	LATEST REVISION	MV	04.01.2022
1	LATEST REVISION	MV	16.12.2021

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E: info@grafaustralia.com.au www.grafaustralia.com.au

DRAWN :	MV	DATE :	04.01.2022
CHECKED :	LB	SCALE :	VARIOUS@A3

PROJECT
GRAF STANDARD DETAILS

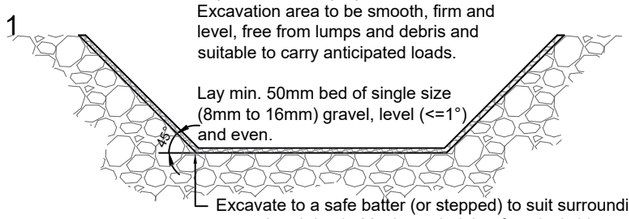
DESCRIPTION
ATTENUATION TANK
using GRAF ECOBLOC
MAXX AND FLEX & VARIO SHAFT

DRAWING No. DWG-347 REV. 2 (Pg.1)

1

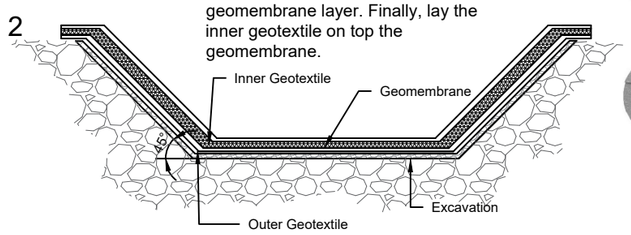
Excavation to comply with the size and depth of the tank proposed.
Excavation area to be smooth, firm and level, free from lumps and debris and suitable to carry anticipated loads.

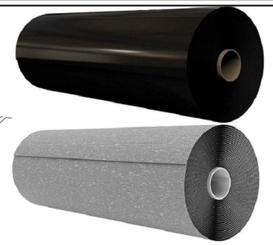
Lay min. 50mm bed of single size (8mm to 16mm) gravel, level (<=1°) and even.



2

Lay the outer geotextile on the base of the excavation and up the sides of the trench followed by the geomembrane layer. Finally, lay the inner geotextile on top the geomembrane.



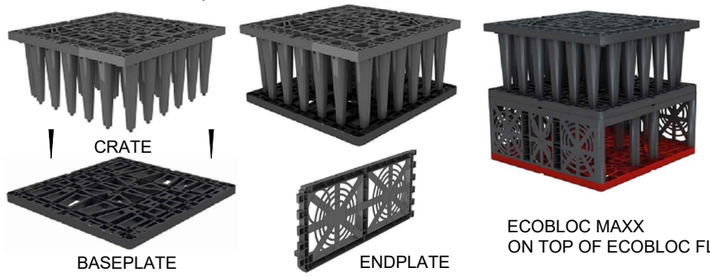


Geomembrane:
1mm Thick LLDPE Geomembrane

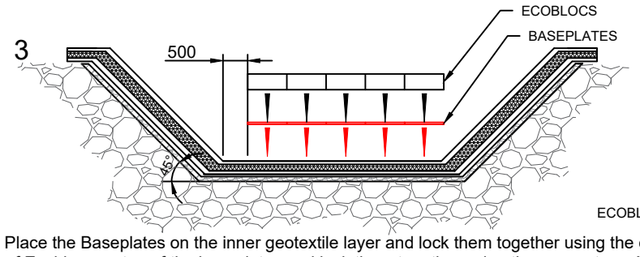
Geotextile:
300g/m² Non-woven

Geomembranes and Geotextiles with characteristics less than those specified are unlikely to be suitable and are therefore not recommended for use with Graf Australia systems for this application

3a Assemble Baseplate and Ecobloc Maxx crate as shown below.



3



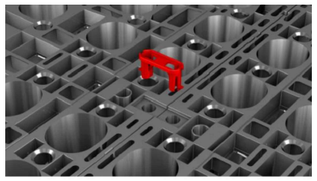
Mix of Ecobloc Maxx and Flex to be constructed as labeled below, according to inspection row

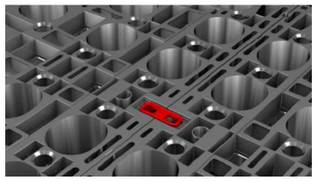
MAXX	MAXX	MAXX	MAXX	MAXX
MAXX	MAXX	MAXX	MAXX	MAXX
MAXX	MAXX	FLEX	MAXX	MAXX

ECOBLOC MAXX BASEPLATE
ECOBLOC MAXX
ECOBLOC MAXX BASEPLATE
ECOBLOC FLEX
ECOBLOC FLEX BASEPLATE

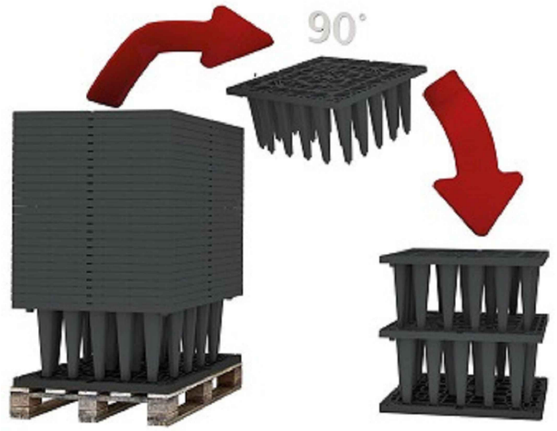
Place the Baseplates on the inner geotextile layer and lock them together using the connectors. Place the first layer of Ecoblocs on top of the baseplates and lock them together using the connectors. After all layers of Ecoblocs are placed and secure, install the End Plates. Endplates are clipped to the tank where it is required.

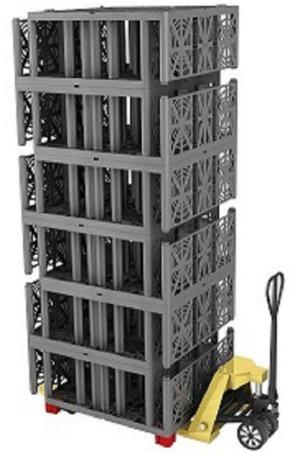
Place the one layer of Ecoblocs on top of the previously placed layer of Baseplates ensuring the connector clips are clipped locking the Ecoblocs together.



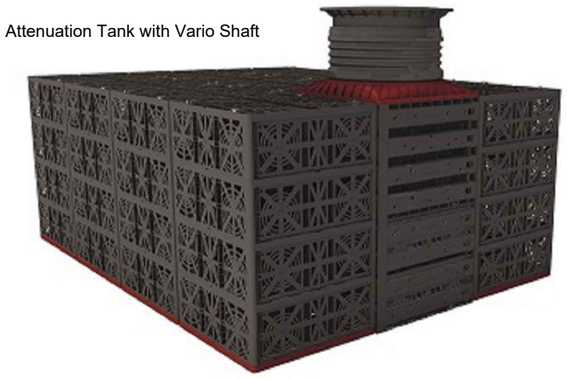


Connector clips are Red for illustration purposes only and are Grey in colour

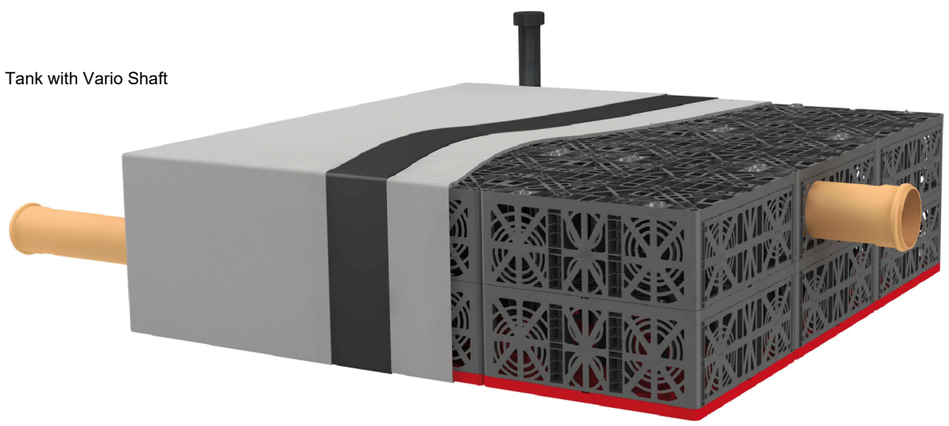




Attenuation Tank with Vario Shaft

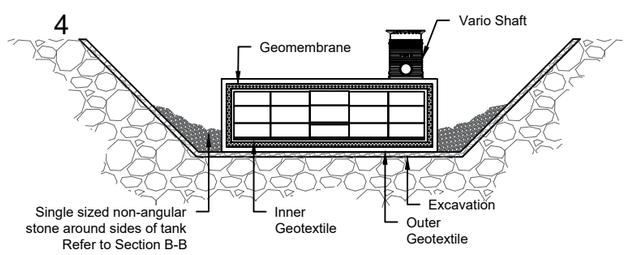


Attenuation Tank with Vario Shaft



Add the Vario Shaft in the correct position for inspection and make sure all parts are secure. Finally, wrap the blocs with the inner geotextile followed by the geomembrane ensuring it is heat welded then wrap with the outer geotextile to protect the geomembrane. Geomembrane must be joined by an experienced operator that holds an appropriate National Qualification or other qualification for membrane installation.

4



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INSTALLATION METHOD:-

1. a) Excavate the trench with a safe batter (or stepped) ensuring the footprint allows for sufficient space between tank and the sides. (minimum 500mm around all sides of the tank).
   b) Mark out the position of the tank including inlets and outlets.
   c) Lay min. 50mm of single sized non angular stone (8 to16mm) as a base for the tank. This can be laid to a maximum fall of 1°.
2. a) Lay the outer geotextile over the base of the excavation, overlapping any joins by a minimum of 300mm.
   b) Lay the geomembrane on top of the geotextile over the base and up the sides of the trench.
   c) Geomembrane must be joined by thermal fusion heated wedge welding by an experienced operator that holds an appropriate National Qualification or other qualification for membrane installation. It is recommended that the Dual Seam method is used as this generates an unwelded channel which can be pressured with air to check the integrity of the weld.
   d) Lay the geotextile over the geomembrane before starting to build the tank.
   e) The geomembrane and geotextile used must meet the specification stated on the drawing.
3. a) Place EcoBloc Flex Baseplates and EcoBloc Maxx Baseplates on top of the inner geotextile according to inspection orientation and design of the tank until the bottom of the tank is completed. Clip Baseplates together using the connectors.
   b) Place Ecoblocs Flex and Maxx on the respective Baseplates clipping each adjacent bloc using the connectors. Ecoblocs will only fit in the correct orientation considering the inspection orientation. Push down firmly to ensure the Ecobloc is located correctly.
   c) Place Vario shaft in the correct location for inspection while building the tank.
   d) Install the next layer of Ecoblocs on top of the first layer until all the layers are completed. Ensure the Ecobloc has the correct direction and ensure each bloc is secure with connectors. NOTE: You will need to place an additional row of Ecobloc Maxx Baseplates directly on top of the EcoBloc Flex **only**. No more base plates are required.
   e) Fit Endplates to the sides of each bloc by positioning the bottom in place then pushing firmly on the top section to locate into place.
4. a) Fix adaptor plates to the sides of the blocs in the required position for the inlet and outlet pipes if required.
   b) Cut a hole in the geomembrane and geotextile for inlet and outlet connections.
   c) Pull geomembrane up around the sides and fully wrap the blocs, securing the top in place by heated wedge welding to the side panels.
   d) Cover the top and sides with outer geotextile to protect the geomembrane.
   e) Install vent pipe connection into the top of the tank at a suitable location.
   f) Backfill around the tank in 300mm layers increments using non-cohesive, compressible loose rock (gravel, crushed rock, sand, etc).
   g) Connect inlet/outlet pipes and weld/glue them to have a watertight connection.
   h) In order to prevent silt from entering the tank it is recommended that silt traps or catchpit manholes are installed upstream of any inlet.These should be regularly maintained to avoid the buildup of any silt.

N.B. Installation method may vary depending on depth of the tank and is project specific. For more information or technical questions please contact our Technical Department at Graf Australia.

REV.	DESCRIPTION	BY	DATE
2	LATEST REVISION	MV	04.01.2022
1	LATEST REVISION	MV	16.12.2021

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DRAWN : MV DATE : 04.01.2022
CHECKED : LB SCALE : VARIOUS@A3

PROJECT
GRAF STANDARD DETAILS

DESCRIPTION
ATTENUATION TANK
using GRAF ECOBLOC
MAXX AND FLEX & VARIO SHAFT

DRAWING No. DWG-347 REV. 2 (Pg.2)

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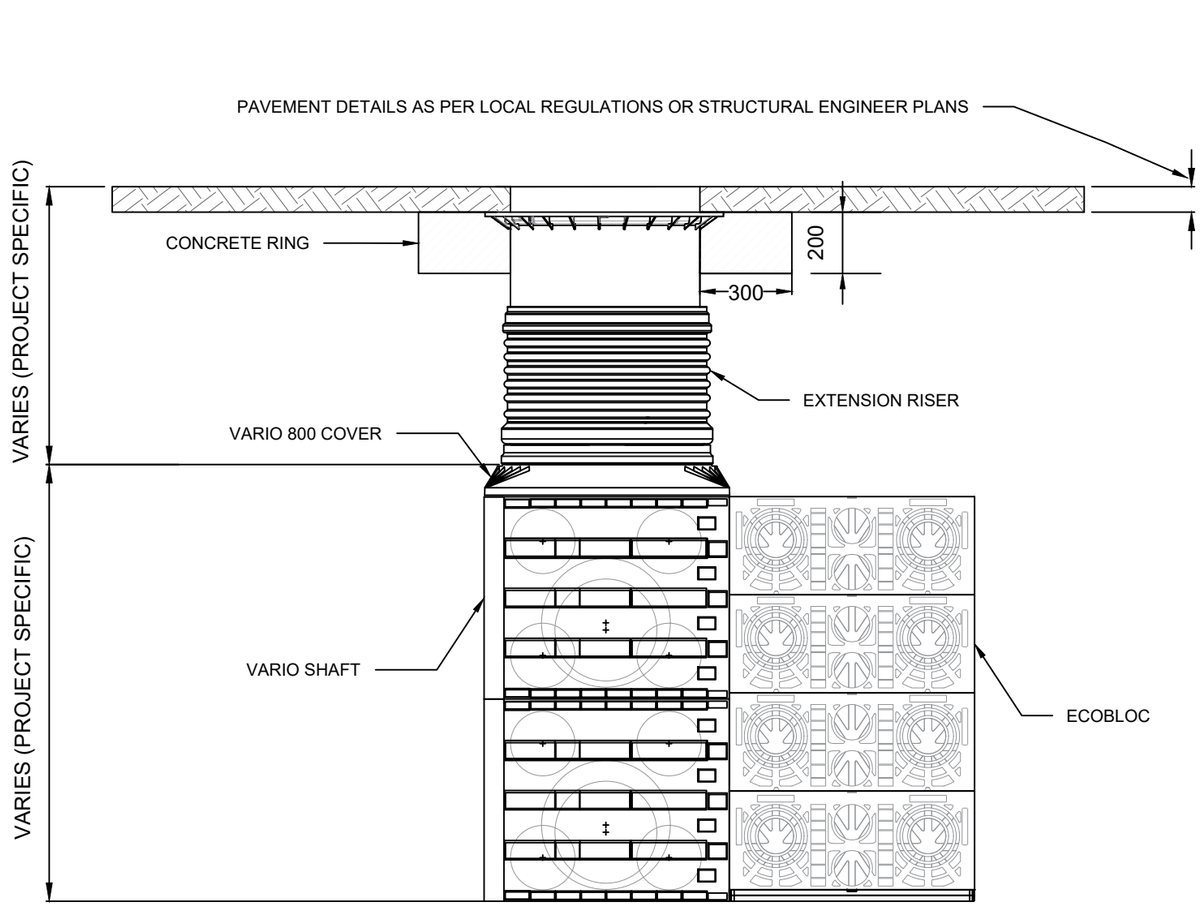
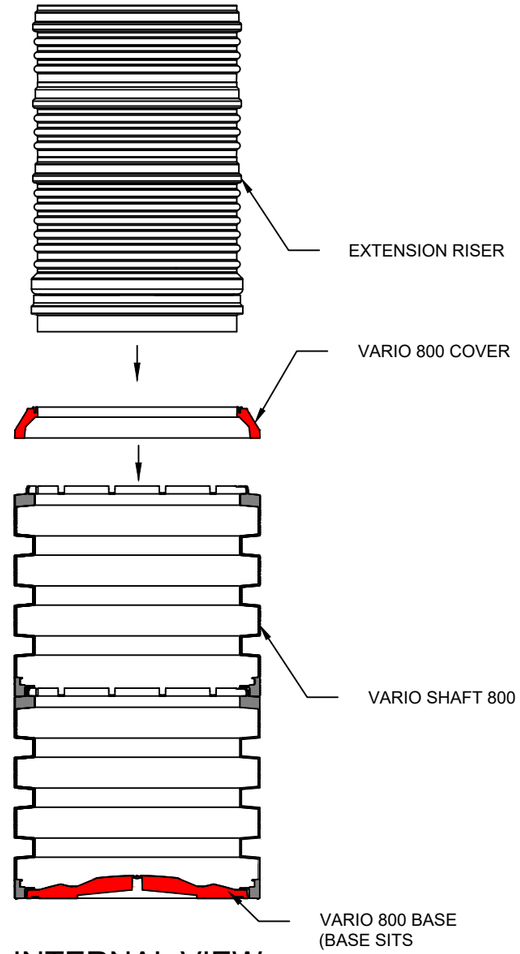


EXTERNAL VIEW



INTERNAL VIEW

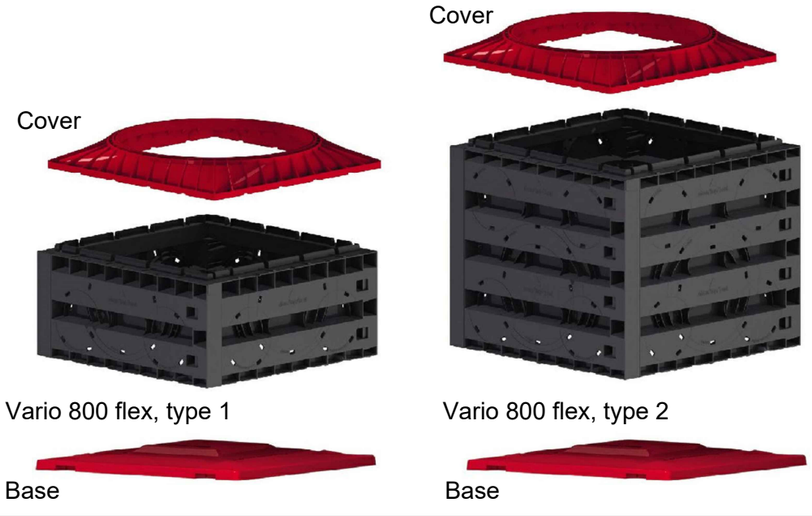
VARIO 800 TYPE 1

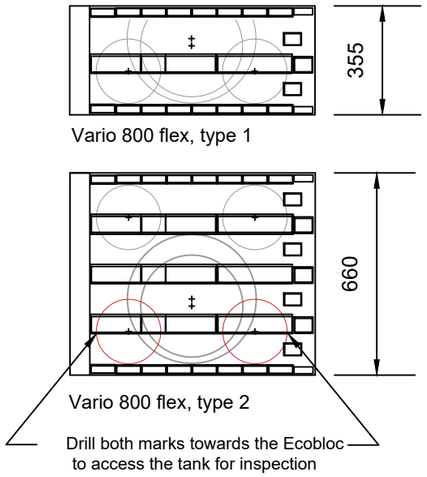
Dimensions (mm) 800 x 800 x 355
Weight 14kg
Volume 230 (litres)

VARIO 800 TYPE 2

Dimensions (mm) 800 x 800 x 660
Weight 24kg
Volume 420 (litres)

VARIO 800 BASE/COVER SET
Dimensions (mm) 800 x 800 x 100
Weight 11kg





Vario 800 are modular and are easily assembled in a push fit manner.

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DRAWN : MV DATE : 04.01.2022
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PROJECT
GRAF STANDARD DETAILS

DESCRIPTION
ATTENUATION TANK
using GRAF ECOBLOC
MAXX AND FLEX & VARIO SHAFT

DRAWING No. DWG-347 REV. 2 (Pg.3)