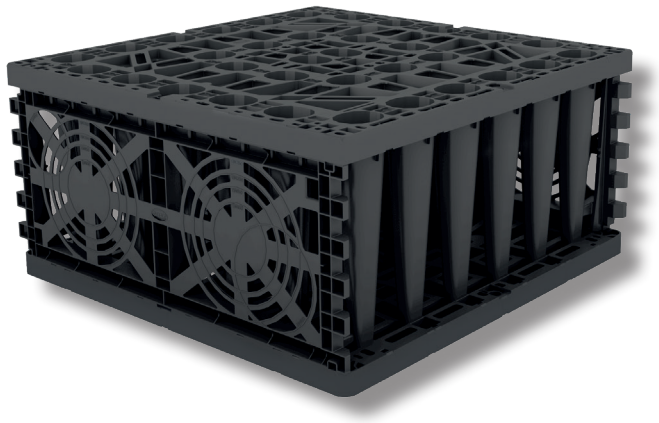
EcoBloc Maxx

Stormwater Management Systems



BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 15/5200

	Crate	Baseplate
Dimensions (mm)	800 x 800 x 350	800 x 800 x 40
Gross Volume (m^3)	0.225m^3	0.025m^3
Net Volume (m^3)	0.217m^3	0.020m^3
Material	Polypropylene	Polypropylene
Weight	9kg	4kg
Void Ratio	96% depending on number of layers	
Inspectable	Yes, when combined with EcoBloc Flex	
*UCS Vertical	365 kN/m^2	
*UCS Lateral	99.6 kN/m^2	
Ultimate Compressive Strength		

Load				
	<3T	12T	30T	40T
Based on backfill φ' 30° density 20kN/m^2 and tank of 0.74m (2 crates deep)				
*Cover in m **				
Min. Cover	0.26	0.62	0.68	0.82
Max. Cover	3.65	3.40	3.40	3.40
*Max. Installation Depth in m **				
With Backfill φ' 26°	3.93	3.67	3.67	3.67
With Backfill φ' 30°	4.86	4.58	4.58	4.58
With Backfill φ' 34°	5.10	4.82	4.82	4.82
With Backfill φ' 38°	4.88	4.61	4.61	4.61

*It is advised that structural design calculations are carried out prior to work commencing.
**Installation depths and loadings outside of the information in this table may be permissible depending on site conditions. Contact Graf UK for more information

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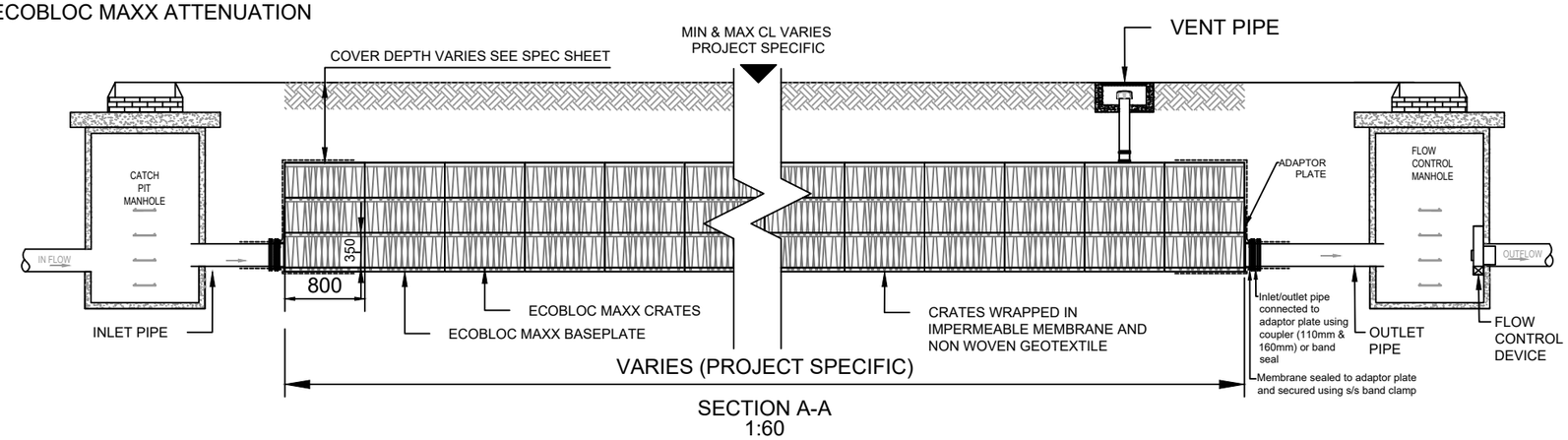
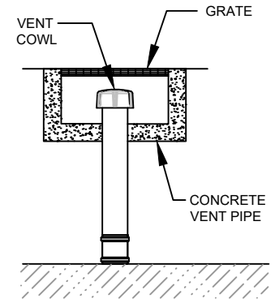
ECOBLOC MAXX ATTENUATION



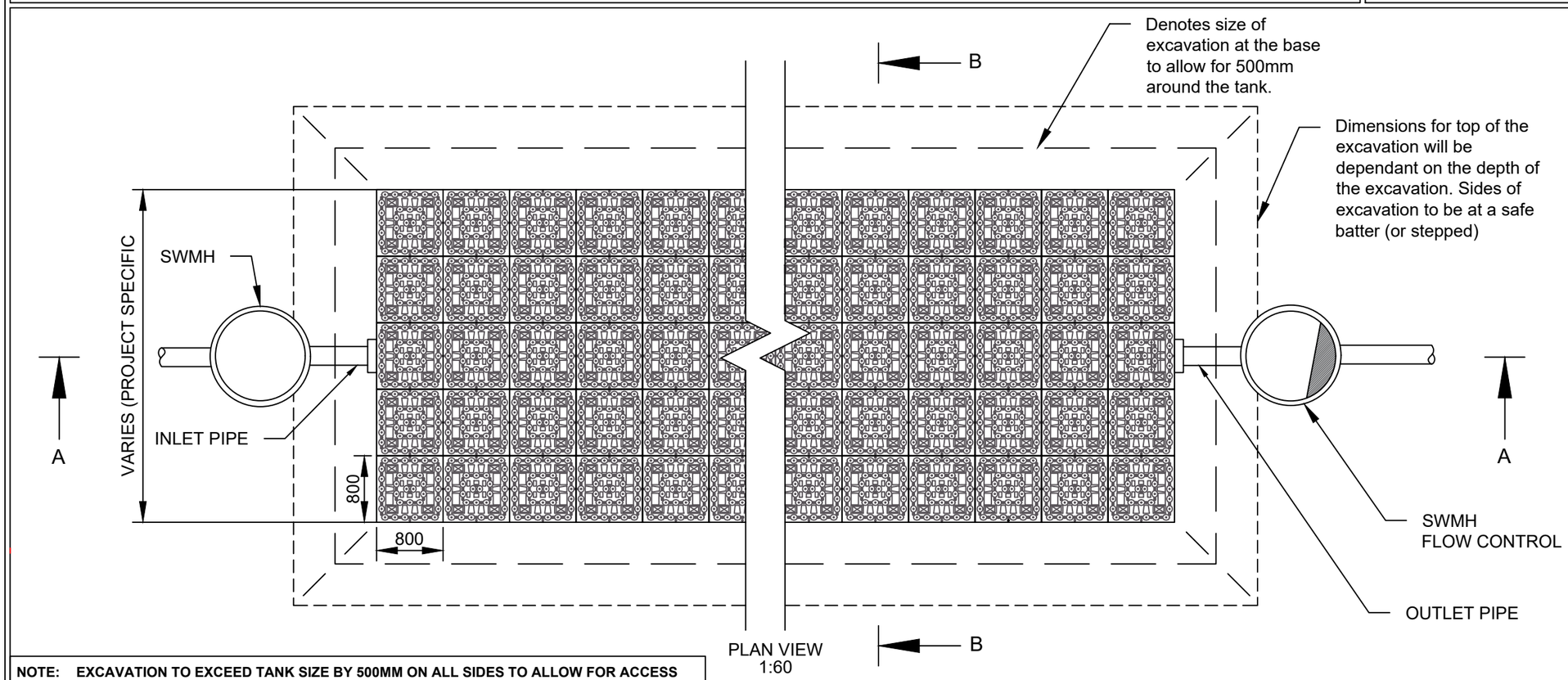
SECTION A-A
1:60

VENT DETAIL



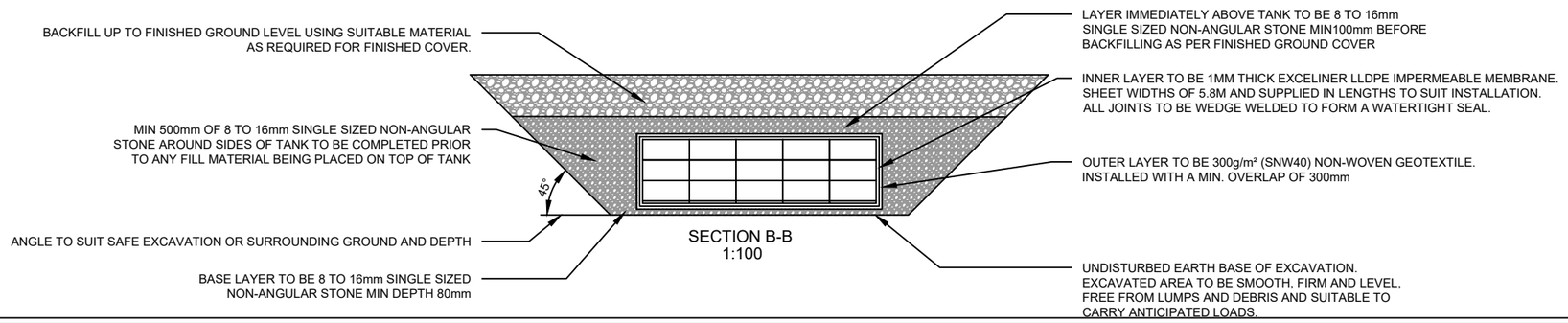
1:25

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.



PLAN VIEW
1:60

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



SECTION B-B
1:100

DO NOT SCALE - IF IN DOUBT ASK

Notice: This drawing is issued only as a guideline and is an estimate of the materials required to construct the drainage system, it should not be used for construction purposes.

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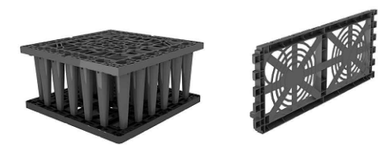
NOTES:-

1. All dimensions in mm, unless otherwise stated.
2. All dimensions are nominal and may vary within manufacturing tolerances.
3. All site temporary enabling works by others.
4. Graf products to be installed in strict accordance with Graf recommendations.
5. This drawing is intended for guidance only. Confirmation of the suitability for a particular project should be sought from the consulting engineers prior to final design or commencement of any construction works.

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	
*UCS Vertical	340 kN/m²	
*UCS Lateral	110 kN/m²	

*Ultimate Compression Strength

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 15/5200

REV.	DESCRIPTION	BY	DATE
P1	LATEST REVISION	DB	15.08.19

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DRAWN : DB DATE : 05.10.18
CHECKED : MC SCALE : VARIOUS@A3

PROJECT
GRAF STANDARD DETAILS

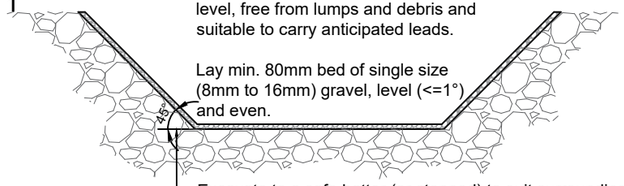
DESCRIPTION
ATTENUATION TANK
using GRAF ECOBLOC MAXX

DRAWING No. STANDARD DETAIL.MAXX REV. P1

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 leads.

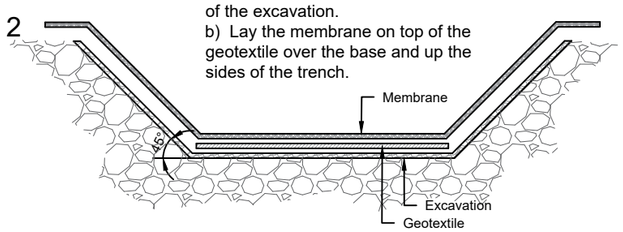
Lay min. 80mm bed of single size (8mm to 16mm) gravel, level (<=1°) and even.



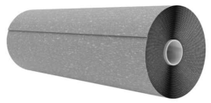
Excavate to a safe batter (or stepped) to suit surrounding ground and depth. Max height of vertical sides to be 1.2m

2

a) Lay the geotextile over the base of the excavation.
b) Lay the membrane on top of the geotextile over the base and up the sides of the trench.



Geomembrane:
1mm Thick LLDPE Geomembrane with a density of at least 0.939g/m².

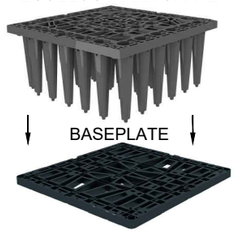


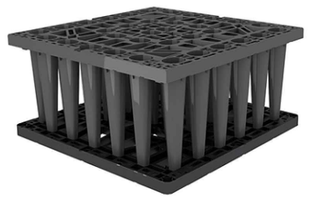
Geotextile:
300g/m² Non-woven, needle punched geotextile

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

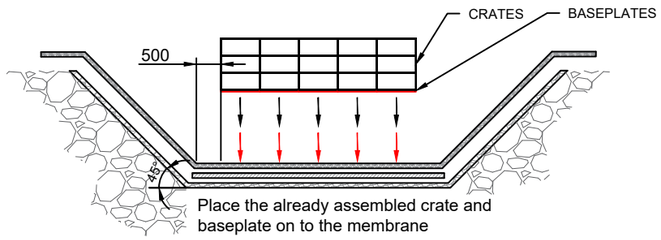
3a Assemble Baseplate and Ecobloc Maxx crate as shown below.

ECOBLOC MAXX CRATE

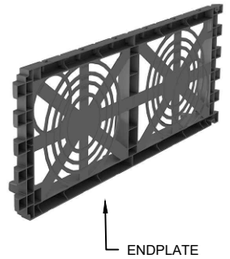




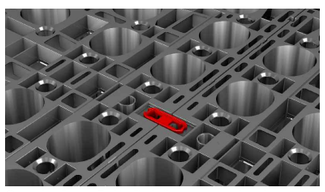
3b



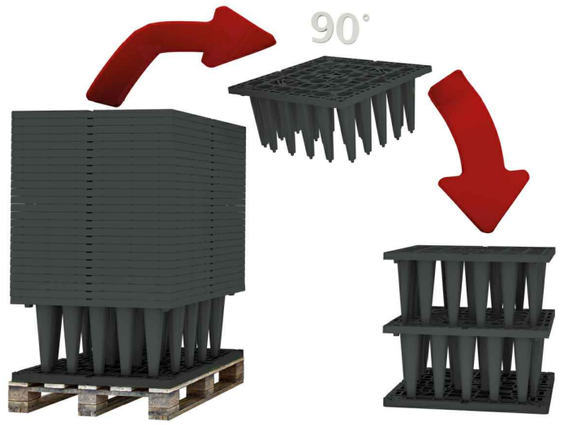
Place the already assembled crate and baseplate on to the membrane

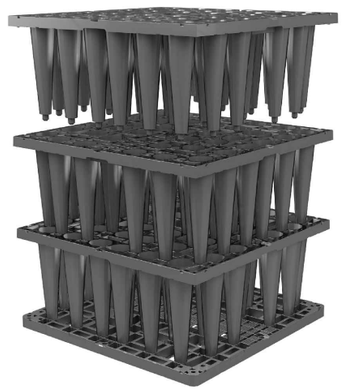


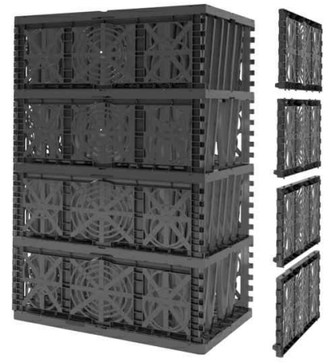
Remove a crate from the stack, rotate it 90° and place on top of the previously placed crate ensuring the connector clips are clipped locking the crates together.

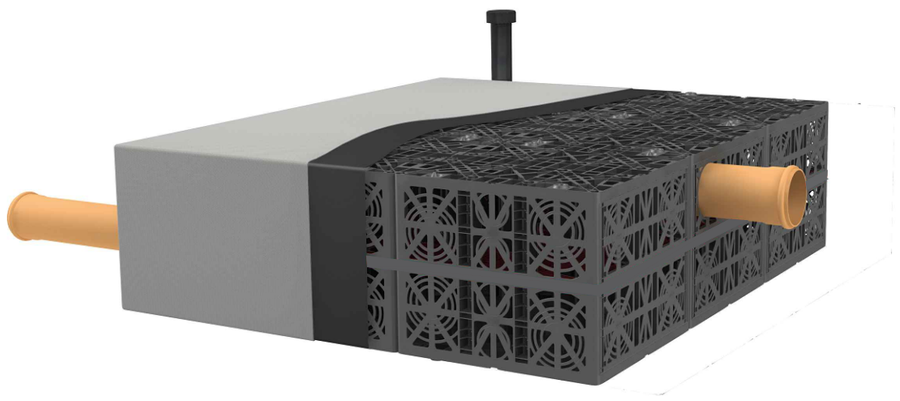


Connector clips are Red for illustration purposes only and are Grey in colour





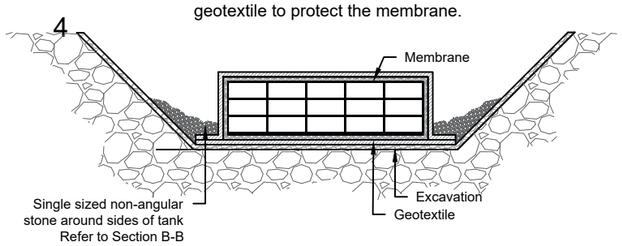




Endplates are then clipped to the tank where required.

Wrap the crates with the Membrane ensuring it is heat welded/sealed then wrap the top and sides with the geotextile to protect the membrane.

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. 80mm 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 Geotextile over the base of the excavation, overlapping any joins by a minimum of 300mm
   b) Lay the Membrane on top of the Geotextile over the base and up the sides of the trench.
   c) Membrane must be joined by thermal fusion heated wedge welding. 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) The Membrane and Geotextile used must meet the specification stated on the drawing.

3. a) Assemble EcoBloc Maxx Crate and Baseplate, position leg ends into corresponding holes in the Baseplate. The crate will only fit in the correct orientation. Push down firmly to ensure Crate is located correctly.
   b) Install already assembled Crates and Baseplates onto the membrane until the first layer is complete. Insert retaining clips into each adjacent Crate.
   c) To install the next layer of Crates remove from the stack and turn 90° and position directly above the Crate below. Push down firmly to ensure Crate is located correctly.
   d) Continue until all Crates have been installed, ensuring clips are used to secure each Crate.
   e) Fit Endplates to the sides of each Crate 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 crates in the required position for the inlet and outlet pipes.
   b) Cut a hole in the Geomembrane and pull up over the adaptor plate sealing the membrane around the spigot of the adaptor plate.
   c) Pull Membrane up around the sides and fully wrap the crates, securing the lid in place by heated wedge welding to the side panels.
   d) Cover the top and sides with 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 and for 100mm above with non-angular stone. Backfill to finished ground level with suitable material in layers.
   g) Connect inlet/outlet pipes using appropriate bandseals.
   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 UK.

REV.	DESCRIPTION	BY	DATE
P1	LATEST REVISION	DB	15.08.19

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DRAWN : DB DATE : 05.10.18
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PROJECT
GRAF STANDARD DETAILS

DESCRIPTION
ATTENUATION TANK
using GRAF ECOBLOC MAXX

DRAWING No. REV.
STANDARD DETAIL.MAXX P2