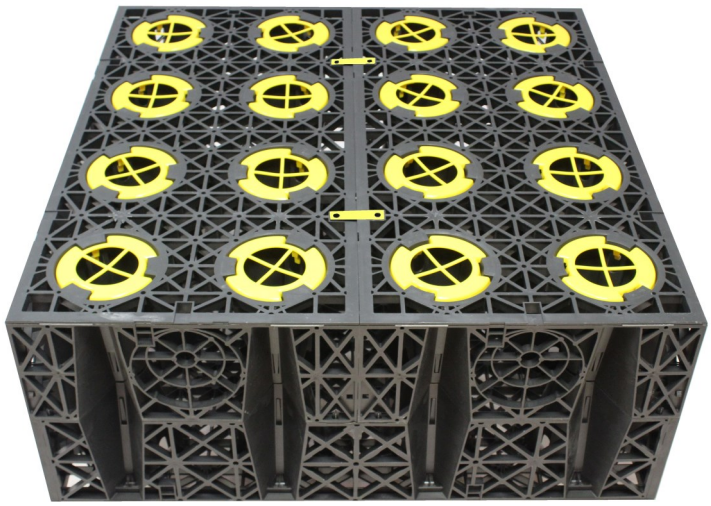
StormMaster - 400kN/m2 Product Information Sheet

PRODUCT INFORMATION

The StormMaster Standard heavy duty crate, manufactured from 100% recycled plastics consists of 4 pieces assembled in the factory to form a single closed crate.



Product Data	StormMaster Heavy Duty
Application	Car parks, general duty
Dimensions	1m x 1m x 0.4m (2.5/m3)
Weight	16.8kg
Colour	Black
Strength - Vertical	400kN/m2
Strength - Lateral	90kN/m2
Void Ration	95.8%
Gross/Effective Volume	400 Litres / 383.2 Litres
Inspectable	Yes
Linking System	Yellow clips
Layer to Layer	Red Clips

Connection Options:

The StormMaster system is delivered to site together with enough yellow clips to enable side to side connections (four per crate) and for multi-layered systems red clips are provided (two per crate). The final layer of crates have the yellow caps fitted to complete the structure.

For drainage and vent connections both 110/160mm OD cut-outs are provided on each side of the crate. Larger connections are accommodated by the use of adapter plates to suit the incoming pipe diameters.

Crate Loading:

The vertical loading on a crate structure is a combination of both the weight of the backfill and the imposed loads due to traffic (live) and structures (dead loads).

Lateral loads are a factor of the pressure exerted by the depth of installation and the strength of the surrounding soil.

Design & Installation Guidance

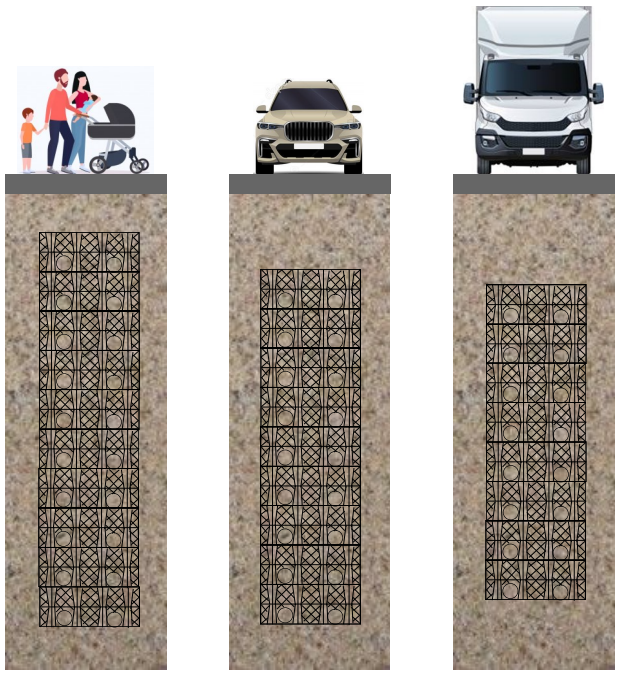
Guidance from CIRIA C680 on Minimum Cover (table 4.7)

Type of Use	Loading	Cover
Landscape	Pedestrian	0.3m - 0.5m*
Car Park	> 3T GVW	0.5m
Car Park	> 9T GVW	0.75m
HGV	> 44T GVW	1.2m

* CIRIA recommend an assessment of the risk of damage due to gardening operations etc.

Guidance on Maximum Depth

Maximum Depth of Installation to base with varying soils (no groundwater within 1m of base)				
Soil Type	**Shear Angle**	**Pedestrian**	**Car Parks**	**Heavy Use**
Stiff over consolidated clay	24°	2.8m	2.8m	2.5m
Silty sandy clay, consolidated	26°	3.0m	3.0m	2.8m
Loose sand & gravel	30°	3.9m	3.9m	3.3m
Medium dense sand/gravel	34°	4.2m	4.2m	3.9m
Dense sand & gravel	38°	5.0m	5.0m	4.7m



Product manufactured in the EU

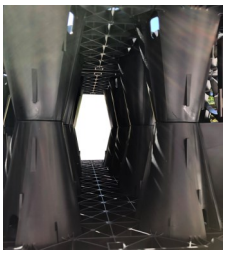
For more Information Contact:

Balstreet Ltd., Blackthorn House, St Paul's Square, Birmingham, B3 1RL
Tel: 0333 3220 190 sales@stormmaster.co.uk www.stormmaster.co.uk

StormMaster - 400kN/m2 Product Features

Access, Maintenance & Inspection

The standard StormMaster crate has two removable cut-outs for inspection/maintenance on each side. Remove the cut-outs on the lateral walls to suit the chosen routes and access to the inspection route is achieved from the upstream silt trap or downstream inspection chamber / manhole.



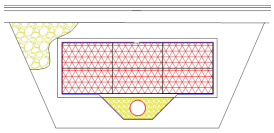
Two inspection routes in each direction in every crate.

Silt Control

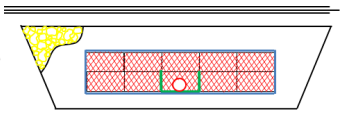
It is good practice to install a silt trap immediately upstream of any crate structure. Alternatively a 225/300mm perforated pipe is installed below the crate structure within the geomembrane seal. N.B. CIRIA does not recommend a perforated pipe within the crate structure itself due to differential settlement. Another alternative is to create a silt channel between the inlet & outlet by a simple "U" shaped geotextile layer to retain silts.

Silt Trap/ Catch-pit

Perforated Pipe below structure



Geotextile silt route through structure.



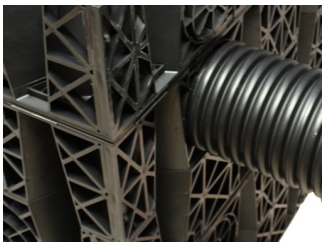
Making Connections

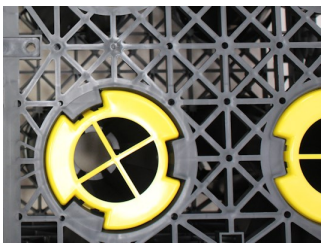
StormMaster crates have two removable cut-outs on each side to allow connections to 110/160mm OD pipework as standard. These can be positioned at both the top or the base of the unit by simply turning the crate upside down. For larger connections a specially made adaptor plate can be used or a manifold system can be utilised.

Vents

Sealed attenuation systems need a 110mm dia vent per 7,500m2 of drained area. This is done by flipping the crate to establish a side connection at the top of the crate, or by connecting to the top of the crate by removing the yellow closer & using a flange connector.

110/160 OD knock-out connections at base or top of crates





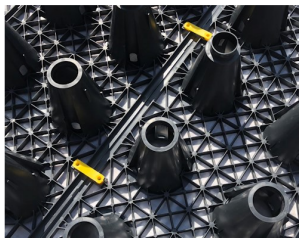
Top vent facility by removing a yellow closer to suit.

Large Structures

When dealing with large structures there is no necessity to have side plates right across the structure, we can therefore supply a side-less crate for this purpose, with the full crates forming an outer ring around the structure.

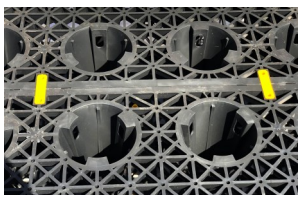
Begin with a row of full crates, install the next row as half height open crates (1m x 0.5m), use the yellow clips to clip the bases together. The bases are then flipped to provide tops and are clipped in place at 90 degrees to the bases with 4 yellow connectors (or 2 yellow & 2 red for multi-layer systems). The structure is finished with full crates around all sides.

Open crates for large structures

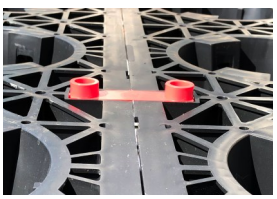


Clipped together before tops are clicked into place.

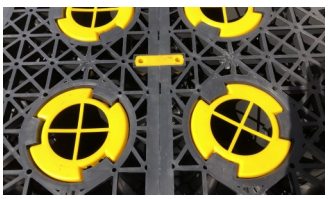
Accessories:



Yellow Clips: Unit to unit connections - 4 per crate. (40 per pallet provided)



Red Clips: For layer to layer connections, allow 2 per crate to replace the yellow clips.



Yellow Closers: For the top finishing layer, clip 16 per crate into place to finish structure.

For more Information Contact: Balstreet Ltd., Blackthorn House, St Paul's Square, Birmingham, B3 1RL Tel: 0333 3220 190 sales@stormmaster.co.uk www.stormmaster.co.uk