Polystorm Range

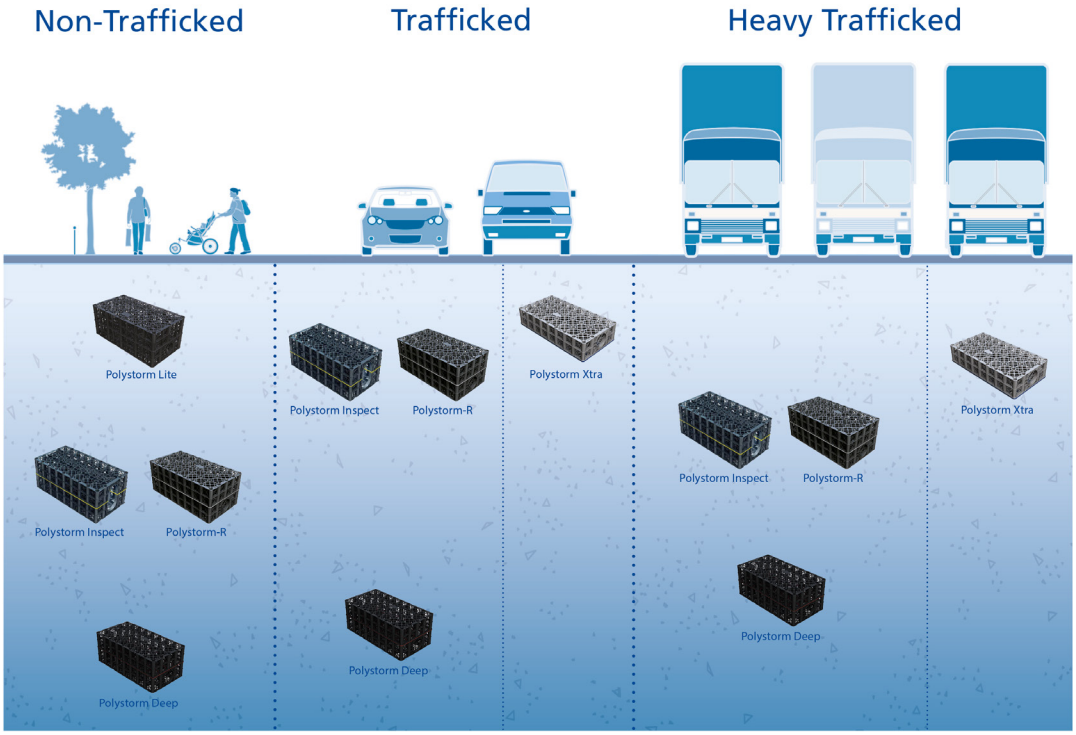
PRODUCT INFORMATION | ISSUE 7 - FEB 19

The tried and tested Polystorm range for the management of surface water is designed to provide retention, attenuation or infiltration at a variety of depths. The Polystorm range can accommodate a wide range of loadings, from pedestrianised areas to large HGV parks. The current range comprises of five modular cells and two access options for both horizontal and vertical inspection.

Key Features and Benefits:

- High void ratio providing greater water storage capacity and reduced excavation and disposal costs
- Suitable for retention, attenuation and infiltration systems
- Light weight yet robust, affording excellent Health and Safety and installation benefits
- Modular units allow flexibility of shape, making them ideal for shallow excavation systems, narrow strips or for restricted areas
- Units available from 20 tonnes per square metre vertical load bearing capacity, up to a maximum of 83 tonnes per square metre vertical load bearing capacity
- Can be utilised in non-trafficked, trafficked or heavily trafficked applications
- Unique rounded corners for ease of handling and reduces likelihood of punctures to membranes
- BBA Approved *Polystorm, Polystorm-R & Polystorm Lite (Polystorm Xtra and Polystorm Deep pending)
- Up to 60 year design life
- Polystorm modular cells are manufactured from polypropylene
- Polystorm Access is manufactured from HDPE
- 100% recyclable at the end of useful life

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- Polystorm Xtra is for use in shallow non-sub-base replacement applications
- Our Polystorm (PSM1) modular cell can also be used in place of Polystorm-R (PSM1A)

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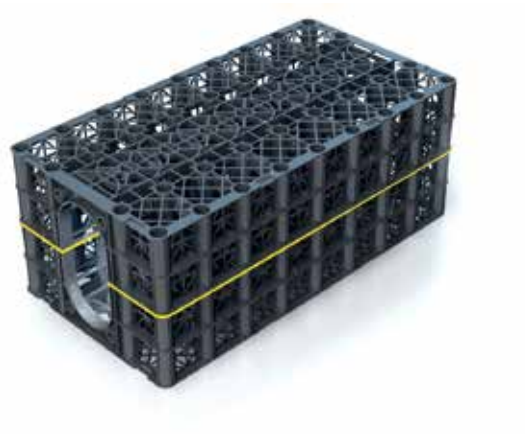
Polystorm Inspect

Data Sheet

PRODUCT INFORMATION **P1** **ISSUE 2 - JAN 2016**

Product code: PSM4

The Polystorm Inspect cell is complementary to the Polystorm range of modular cell solutions. Its primary purpose is to provide a tunnel along the length of a fully installed Polystorm structure to enable access for inspection and maintenance. Polystorm Inspect is a high strength thermoplastic cell which evenly distributes its load through the Polystorm structure.
The tunnel end is left open by default but the unit can be closed off if required by clipping into place the moulded end plate. For purposes of identification the cell features a yellow centre section and end plate.



Key Benefits

- Creates a horizontal tunnel running through the middle of the tank to provide access for inspection and maintenance, i.e. jetting and rodding
- Can be used with Polystorm Lite, Polystorm-R and Polystorm (cannot be used in the same layer as Polystorm Xtra as the Polystorm Inspect cell is deeper)
- Tunnel can be used as a flow inlet track achieving greater stormwater flow distribution within the unit
- Large access tunnel (height 320mm and width 172mm nominal) – allows maximum field of vision while maintaining the system's structural performance
- High strength to weight ratio
- Light weight cell allows easier handling and reduced Health and Safety risk
- Utilises the same Shear Connectors and Clips as the Polystorm range
- The tunnel restricts the dissipation of silt in to the overall structure making inspection and maintenance easier
- Polystorm Inspect cells with 225mm (PSM4CRD225) or 300mm (PSM4CRD300) inlets are available

Applications

Polystorm Inspect is designed to work with the rest of the Polystorm range within a layered hybrid system enabling an intelligently engineered attenuation or infiltration structure to be created. It is intended to be used from the inlet point of the Polystorm structure. If used other than along an inlet tract, the Polystorm Inspect end plate should be used to cap off the tunnel entrance. The most cost effective way to create a tank is to use a combination of Polystorm Inspect cells and other Polystorm modular cells.

UNIT TYPE	VALUE
PHYSICAL PROPERTIES	
Length	1m
Width	0.5m
Depth	0.4m
Total volume	0.2m³
Unit weight	11.6kg*
Cube storage volume	0.188m³ (188 litres)
Volumetric void ratio	94%
SHORT TERM COMPRESSIVE STRENGTH	
Vertical	Minimum 440kN/m²
Lateral	Minimum 63kN/m²
SHORT TERM DEFLECTION	
Short-term vertical deflection	Minimum 70.1kN/m²
LONG TERM DEFLECTION	
Estimated long term vertical deflection (creep)	0.6113Ln (design life in hrs)

Note: The table above is applicable to PSM4 without the end plate.
*Approximate weight
End plates to be purchased separately as required.

Please note: The use of Polystorm Inspect does not negate the requirement for a Silt Trap to be installed prior to the Polystorm structure. The use of a Silt Trap or other silt prevention device would always be recommended.

Technical Support

Detailed guidance and assistance is available.
For further information, please contact our Technical Team on **+44 (0) 1509 615100** or email **civils@polypipe.com**

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Polystorm Inspect

Data Sheet

RECOMMENDED MAXIMUM DEPTH OF INSTALLATION (to cell invert) [m]

TYPICAL SOIL TYPE	TYPICAL ANGLE OF SHEAR RESISTANCE	WITHOUT GROUNDWATER (below base of cells) NORMAL CASE		WITH GROUNDWATER AT 1M BELOW GROUND LEVEL AND UNITS WRAPPED IN GEOMEMBRANE	
		Pedestrian	Trafficked (cars)	Pedestrian	Trafficked (cars)
Stiff over consolidated clay e.g. London clay	24°	2.3	2.0	1.8	1.7
Normally consolidated silty sandy clay e.g. alluvium, made ground	26°	2.4	2.2	1.9	1.7
Loose sand and gravel	30°	2.8	2.6	2.0	1.8
Medium dense sand and gravel	33°	3.2	2.9	2.1	1.9
Dense sand and gravel	38°	3.9	3.6	2.2	2.1

Note:

1) Stated depths based on the calculation methodology detailed within CIRIA C680 (2008)
2) Assuming a soil density = 19 kN/m³ water density = 9.81 kN/m³
3) Assumed ultimate limit state (ULS) partial factor of safety applied to: Material = 2.75 Live load = 1.5 Dead load = 1.35

Notes:

1. Unless stated, all values are nominal and may vary within normal production tolerances.
2. Polypipe reserve the right to change product specifications without prior notice.
3. This document is uncontrolled and updates will not be issued automatically.

RECOMMENDED MINIMUM COVER LEVELS [m]

LIVE LOAD CONDITIONS	PEDESTRIAN	LIGHT TRAFFICKED
		Car park with vehicle mass <6000kg
Minimum cover depth required (m)	0.50	0.60

Note:

1) Stated depths based on the calculation methodology detailed within CIRIA C680 (2008)
2) Assumed serviceability limit state (SLS) partial factor of safety applied to: Material = 1.5 Live load = 1.0 Dead load = 1.0
3) Shallower minimum burial depths may be applicable subject to specific site conditions.

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Polystorm Range

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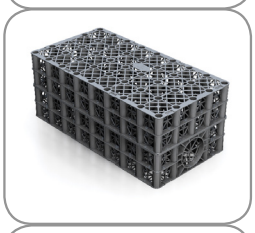
Polystorm Lite (PSM2)

Specifically designed for non-trafficked applications within landscaped areas, pedestrianised areas or public open spaces such as playgrounds. With 20 tonne per square metre vertical compressive strength, it can take the load of general maintainance vehicles such as grass cutters.



Polystorm (PSM1)

With 44 tonne per square metre vertical compressive strength, made from virgin material, Polystorm is ideally suited for trafficked and loaded areas. It is used frequently for housing delvelopments, car parks and commercial developments.



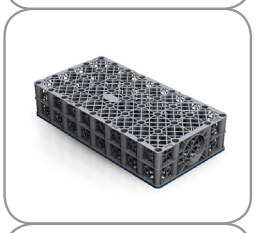
Polystorm-R (PSM1A)

Similar to the Polystorm cell, Polystorm-R is used for trafficked and loaded applications and has a vertical compressive strength of 61 tonne per square metre. Polystorm-R has the added benefit of having up to 100% recycled material content. It is ideally suited for housing, commercial and infrastructure projects.



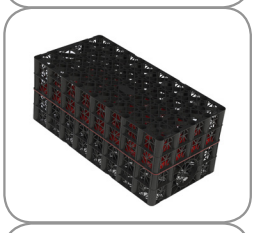
Polystorm Xtra (PSM3)

Designed for use in heavily trafficked areas for shallow, non sub-base applications where a reduced cover is required. It has an impressive vertical compressive strength of 83 tonnes per square metre.



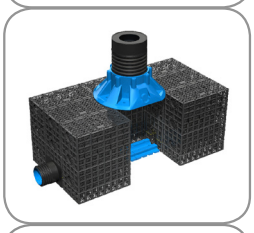
Polystorm Deep (PSM5)

Polystorm Deep has been designed for use in trafficked applications such as lorry parks and industrial access roads. It can be buried deeper than any other Polystorm cell and can be value engineered as part of a hybrid system with Polystorm, Polystorm-R and Polystorm Lite.



Polystorm Access (please see datasheet for codes)

Polystorm Access provides a 1m x 0.5m shaft within a Polystorm structure to enable surface access for remote camera inspection and maintainance activities such as flushing and rodding. The system consists of a 500mm diameter shaft which extends from surface level to the top of a Polystorm structure, at which point a turret provides an interface between the shaft and the inspection chamber within the system.



Polystorm Inspect (PSM4)

Polystorm Inspect provides a tunnel along the length of a fully installed Polystorm structure to enable access for inspection and maintainance. Polystorm Inspect can be combined with Polystorm Access for full inspection and maintainance activities such as fushing and rodding.



Geomembranes and Geotextiles

Polystorm Geotextiles are UV-stabilized, polypropylene, continuous filament needle-punched non-woven geotextiles, designed to complement the range of Polystorm modular cells. They are suitable for infiltration applications and can also be incorporated into drainage trenches.



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