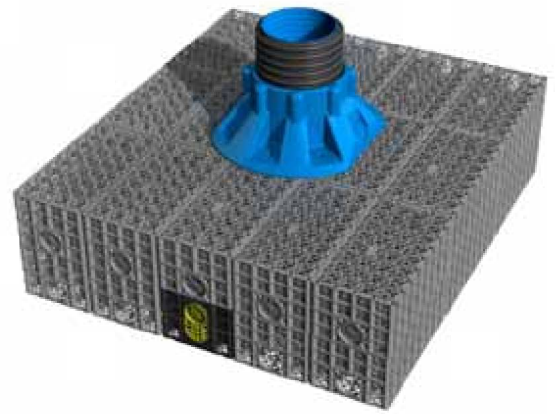
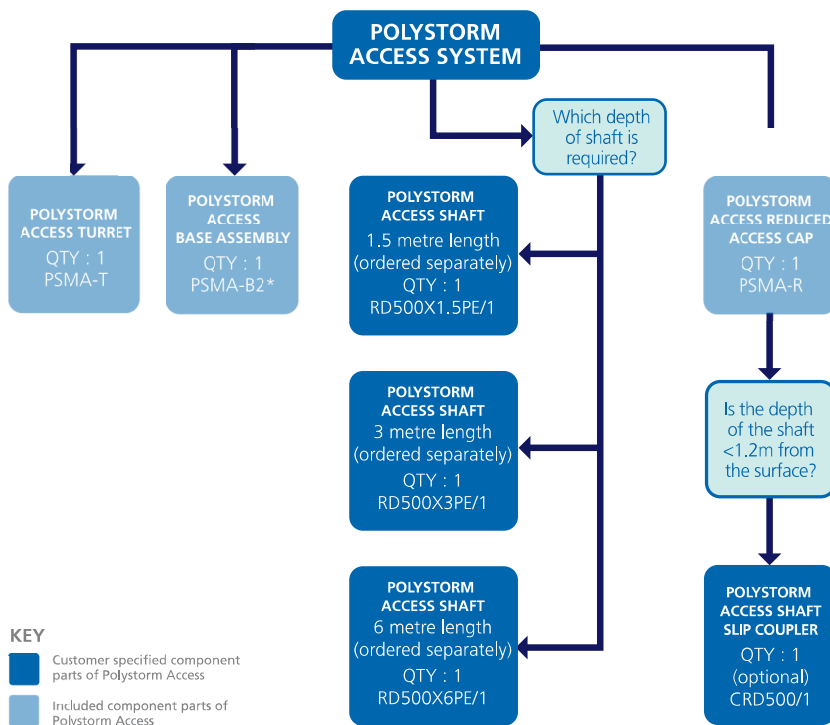


Polystorm Access provides a 1m x 0.5m shaft within a Polystorm geocellular structure to enable surface access for remote camera inspection and maintenance activities such as flushing and rodding. The system consists of a 500mm diameter shaft which extends from surface level to the top of a Polystorm structure at which point a turret provides an interface between the shaft and the inspection chamber within the Polystorm structure. At the bottom of the chamber a base unit interlocks with the surrounding layer of Polystorm cells whilst supporting the geomembrane. A 350mm reduced access shaft cap is provided to comply with inspection chamber regulations. Polystorm Access is suitable for use with Polystorm, Polystorm-R, Polystorm Lite and Polystorm Xtra and may be combined with Polystorm Inspect for full length remote inspection and maintenance.

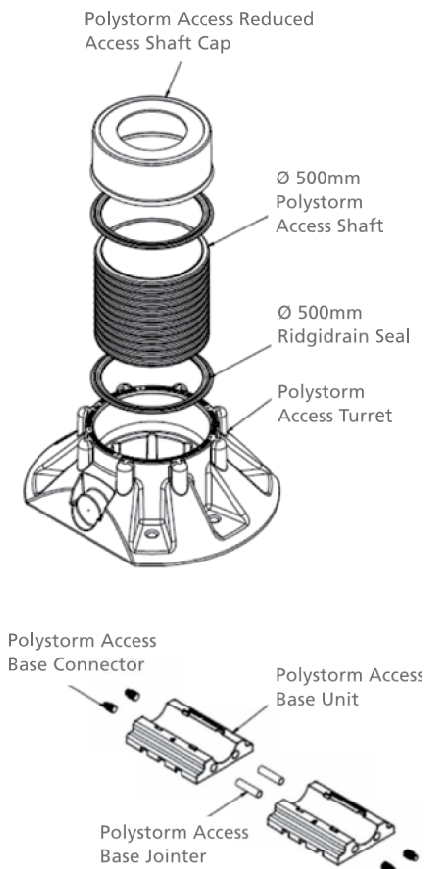


Key Benefits

- Meets minimum 450mm width requirement for inspection chamber access, with 350mm reduced access where regulations dictate
- Integrated solution; can be used with Polystorm Inspect to monitor internal volume of geocellular structure
- Base unit provides smooth transition between Polystorm Inspect units
- Multiple inspection configurations can be achieved when used in conjunction with Polystorm Inspect
- Manufactured from Polyethylene for light weight, ease of handling and high strength
- Sustainability: All components 100% recyclable after use



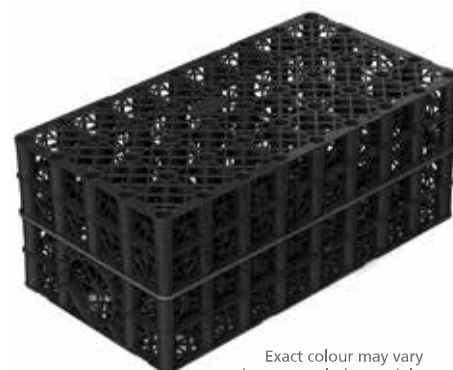
* PSMA-B2 includes:
Polystorm Access Base Unit Qty: 2
Base Joiner Qty: 2
Base Connector Qty: 2
Seal Qty: 2



Product code: PSM1A

The Polystorm-R modular cell is ideally suited for loaded applications at greater depths, such as housing, commercial and infrastructure projects and has a compressive strength of up to 61 tonnes/m². It offers all the proven performance of the Polystorm cell, with the added benefits of being manufactured from over 90% recycled material content.

Wherever performance criteria and standards allow, we will always maximise the sustainability of our products by using post consumer plastics in their manufacture. By sourcing and carefully controlling the quality of the recycled material we use our precision injection moulding. Therefore we are able to guarantee consistent quality in our recycled plastic, giving you the confidence and the performance levels you expect from the market leader.



Exact colour may vary due to recycled materials.

Key Benefits

- Made from specially selected and controlled recycled materials
- Environmentally friendly, sustainable solution
- Has undergone stringent testing to ensure product performance
- Compressive strength of 61 tonnes/m²
- Ideal for retention, attenuation and infiltration applications with a suitable geomembrane or geotextile
- BBA approved
- Allow flexibility of shape - ideal for shallow excavation systems, narrow strips or use in restricted areas
- Can be used as part of a value engineered hybrid system with Polystorm, Polystorm Lite and Polystorm Xtra
- Integrated inlet and outlet
- 3D flow throughout the structure
- 95% void ratio
- Light weight yet robust - excellent Health and Safety and installation benefits
- 60 years creep limited life expectancy

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



ELEMENT	VALUE
PHYSICAL PROPERTIES	
Length	1m
Width	0.5m
Depth	0.4m
Total volume	0.2m ³
Unit weight	9kg (approx)
Unit storage volume	0.19m ³ (190 litres)
Void ratio	95%
SHORT TERM COMPRESSIVE STRENGTH	
Vertical	610 kN/m ² **
Lateral	63 kN/m ² **
SHORT TERM DEFLECTION	
Short-term vertical deflection	60 kN/m ² per mm
LONG TERM DEFLECTION	
Estimated long term vertical deflection (creep)	0.2798 Ln (design life in hrs) +0.485 [Based on an applied test load = 162 kN/m ²] Creep data limit 60 years
Estimated long term lateral deflection (creep)	1.0192 Ln (design life in hrs) -3.864 [Based on an applied test load = 30.8 kN/m ²] Creep data limit 60 years

Note: Polystorm-R is ideal for use in trafficked and pedestrian applications subject to a structural design check and suitable installation conditions

* Each unit includes 4 Clips and 2 Shear Connectors.

** Compressive strength at yield, maximum recommended value for design purposes.

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

TYPICAL SOIL TYPE	TYPICAL ANGLE OF SHEAR RESISTANCE	SOIL WEIGHT kN/m ³	WITHOUT GROUNDWATER (below base of cells) NORMAL CASE		WITH GROUNDWATER AT 1M BELOW GROUND LEVEL AND UNITS WRAPPED IN GEOMEMBRANE	
			Pedestrian	Trafficked (cars) <3000kg GVW	Pedestrian	Trafficked (cars) <3000kg GVW
Stiff over consolidated clay e.g. London clay	24	20.0	2.2	1.9	1.8	1.6
Normally consolidated silty sandy clay e.g. alluvium, made ground	26	19.0	2.4	2.2	1.9	1.7
Loose sand and gravel	30	18.0	3.0	2.7	2.0	1.9
Medium dense sand and gravel	33	19.0	3.2	2.9	2.0	1.9
Dense sand and gravel	38	20.0	3.7	3.5	2.1	2.0

Note:

1) Stated depths based on the calculation methodology detailed within CIRIA C680 (2008)

2) Assuming water density = 10.0kN/m³

3) Assumed ultimate limit state (ULS) partial factor of safety applied to: Material = 2.75 Lateral pressure = 1.35

Durability

The polymer material used in the manufacture of the Polystorm-R unit has an adequate resistance to attack from the type and quantities of chemicals that may be expected to naturally occur in uncontaminated soils and rainwater runoff. When installed in accordance with our recommendations, it is expected that the Polystorm-R unit will have a design life in excess of 60 years*. The installer of a proposed geocellular structure should ensure that an appropriate design check has been undertaken, in accordance with the recommended methodology and factors of safety given in CIRIA C680 (2008), Structural Design of Modular Geocellular Drainage Tanks, prior to the commencement of construction activities.

* Derived from long term extrapolated creep testing

Notes

1. Unless stated, all values are nominal and may vary within normal production tolerances.
2. The characteristic unit parameters stated have been based on Polypipe BBA certificate N° 06/4297, sheet 3.
3. Polypipe reserve the right to change product specifications without prior notice.
4. 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 <GVW	
Minimum cover depth required (m)	0.50	<3000kg 0.50	<9000kg 0.65

Note

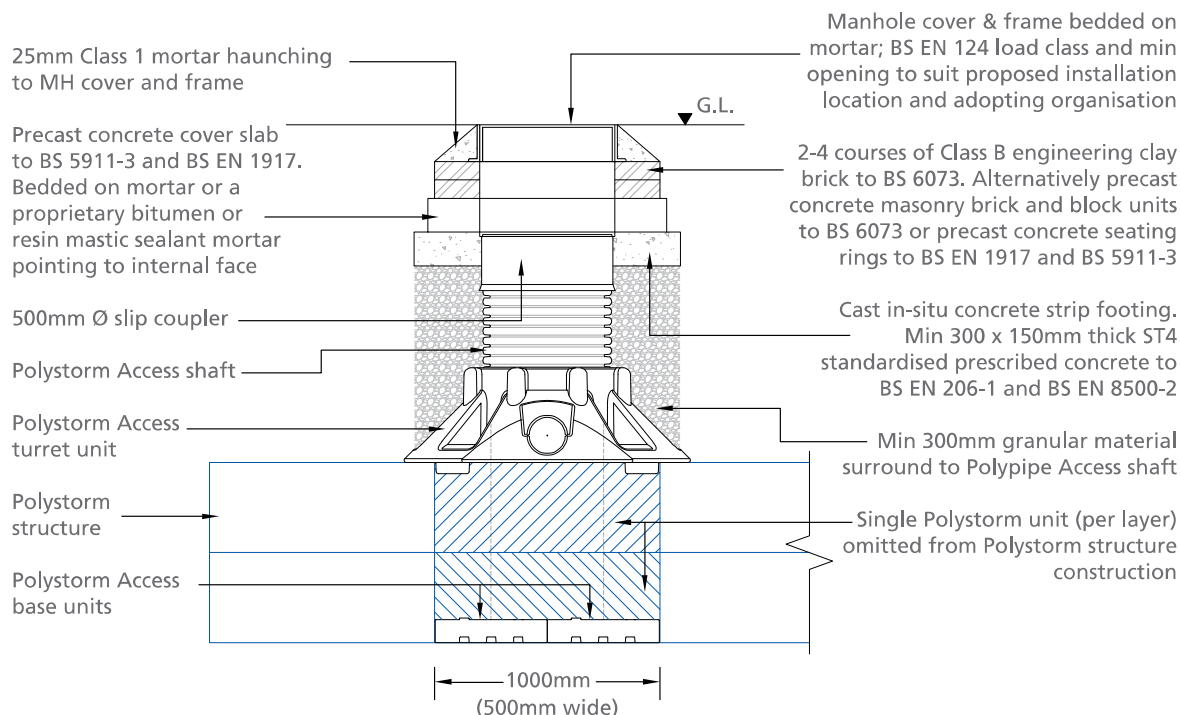
1) Stated depths based on the calculation methodology detailed within CIRIA C680 (2008)

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 an assessment of the specific site conditions. For further details please consult our Technical Team on 01509 615100.

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Typical Elevation



PLEASE NOTE: Above is a typical installation detail for a Polystorm tank with groundwater below the base of the unit. For installation with groundwater above the structure invert please contact our [technical team](mailto:technicalteam@polypipe.com) on **01509 615 100** or email: wmsenquiries@polypipe.com

Polypipe Plastics Expertise

Polystorm Access is manufactured from sustainable Polyethylene using the proven rotational moulding technique.

Reliability and Performance

All components in the Polystorm Access system have a design life of up to 50 years where ground conditions allow.

Easy Handling and Installation

Components are light and easy to handle, reducing health and safety risks and speeding up installation. The Polystorm Access Shaft can be quickly and accurately cut to the right depth from 500mm Ridgidrain pipe, adding to the ease and flexibility on-site.

Nominal Weights

PSMA-B2 = 8kg PSMA-T = 19kg PSMA-R = 4kg

Flexible Positioning

The Polystorm Access turret can be positioned anywhere on a Polystorm structure, providing there are two or more Polystorm cells between the Access turret and the structure edge.

The Polystorm Access Shaft is variable in length depending on the depth you require.

Features

- 1m x 0.5m inspection chamber within Polystorm structure
- 500mm riser shaft from surface to top of Polystorm structure
- Riser shaft may be extended as required using 500mm Ridgidrain pipe and seals
- Reduced Access Shaft Cap (350mm) available where required by regulations
- Utilises existing Polystorm clips and shear connections
- Base unit manufactured from recyclable Polyethylene
- Choice of standard shaft lengths

Technical Support

Detailed guidance and assistance is available.

For further information, please contact our technical team on **01509 615 100** or email: wmsenquiries@polypipe.com

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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 and Polystorm-R (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 systems structural performance
- High strength to weight ratio
- Light weight cell allows easier handling and reduced health & 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
- Technical support available
- Polystorm Inspect cells with 225mm or 300mm inlets are available (PSM4CRD225 or PSM4CRD300)

Applications

Polystorm Inspect is designed to work with the rest of the Polystorm range within a layered hybrid system enabling a value 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.

TECHNICAL SPECIFICATION OVERVIEW

UNIT TYPE	POLYSTORM INSPECT
Product Code	PSM4
Length	1m
Width	0.5m
Depth	0.4m
Total Volume	0.2m ³
Unit Weight	11.6kg*
Cube Storage Volume	0.188m ³ (188 litres)
Volumetric void ratio	94%
Vertical Compressive Strength at yield	Minimum 440kN/m ²
Lateral Compressive Strength at yield	Minimum 63kN/m ²
Short-Term Vertical Deflection	Minimum 70.1kN/m ² per mm
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

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.

End plates to be purchased separately as required.

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:

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Technical Support

Detailed guidance and assistance is available.
For further information, please contact our technical team on **01509 615 100** or email: wmsenquiries@polypipe.com

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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