

Run-off from building roofs is collected into downpipes and flows into a back inlet gully incorporating an internal filter or catchpit inspection chambers. The back inlet gully or chamber discharges the filtered stormwater into the permeable sub-base via Permavoid Rainwater Diffuser Unit encapsulated in a 2mm mesh fabric. The run-off will then diffuse out of the Permavoid Rainwater Diffuser Unit and into the modified granular sub-base layer. The Permavoid unit is a 150mm deep modular interlocking plastic unit storage system designed for use as a combined drainage component and sub-base replacement system, ideal for shallow infiltration/attenuation.



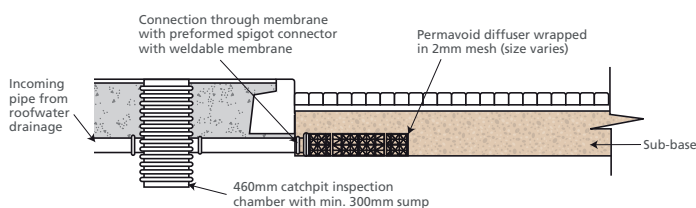
Permavoid Rainwater Diffuser Unit - Configuration Options

		Width				
		354mm	708mm	1062mm	1416mm	2124mm
Length	708mm	✓	✓	✓	✓	✓
	1062mm	✗	✓	✓*	✓	✓
	1416mm	✓	✓	✓	✓	✓
	2124mm	✓	✓	✓	✓	✓

*1062 x 1062mm diffuser unit has a 354 x 354mm central opening.
 Depths available are either 150mm or 300mm.
 Connections available are either Ø110mm or Ø160mm.

Catchpit: 460mm diameter catchpit with 160mm inlet - PSMST 160
 460mm diameter catchpit with 110mm inlet - PSMST 110

Typical Layout - Rainwater downpipe drainage into sub-base reservoir



Technical Support

Detailed guidance and assistance is available. For further information, please contact our Technical Team on +44 (0) 1509 615 100 or email civils@polypipe.com or visit www.polypipe.com/civils-technical-hub

ELEMENT	VALUE
PHYSICAL PROPERTIES	
Weight per unit	3kg
Length	708mm
Width	354mm
Depth	150mm
SHORT TERM COMPRESSIVE STRENGTH	
Vertical	715kN/m ²
Lateral	156kN/m ²
SHORT TERM DEFLECTION	
Vertical	1mm per 126kN/m ²
Lateral	1mm per 15kN/m ²
TENSILE STRENGTH	
Of a single joint	42.4kN/m ²
Of a single joint at (1% secant modulus)	18.8kN/m ²
Bending resistance of unit	0.71kN/m
Bending resistance of single joint	0.16kN/m
OTHER PROPERTIES	
Volumetric void ratio	95%
Average effective perforated surface area	52%
Intrinsic permeability (k)	Minimum 1.0 x 10 ⁻⁵
Ancillary	Permavoid Permatie Permavoid Shear Connector
Material	Polypropylene (PP)

HYDRAULIC PERFORMANCE

3 units wide, 1 unit deep
 (1.06m x 0.15m)

FREE DISCHARGE

Gradient (%)	0	1	2	3	4	5
Flow rate (l/m/s)	8	13	15	17	19	21

Permavoid Rainwater Diffuser Unit can be utilised in these SuDS techniques

TECHNIQUES													
Blue-Green roofs	Podium Decks	Trees	Sports Pitches	Cycle Paths	Permeable Paving (sub base & podium)	Bioretention & Rain Gardens	Attenuation Storage Tanks	Infiltration	Swales	Filter Drains	Detention Basins	Ponds & Wetlands	Filter Strips
			✓		✓		✓						

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