


Polypipe Civils		Page 1
Charnwood Business Park Loughborough Leicestershire LE11 1LE	103882 Gilbert Road, Kinswood 5m x 4m x 0.4m	
Date 24/10/2023 File T-MD-103882_TR_MD2 (1 i...	Designed by TR Checked by	


Micro Drainage Source Control 2020.1.3

Summary of Results for 100 year Return Period (+45%)

Half Drain Time : 51 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m <sup>3</sup> )	Status
15 min Summer	98.826	0.226	1.1	4.3	O K
30 min Summer	98.877	0.277	1.2	5.3	O K
60 min Summer	98.902	0.302	1.2	5.7	O K
120 min Summer	98.898	0.298	1.2	5.7	O K
180 min Summer	98.876	0.276	1.2	5.2	O K
240 min Summer	98.851	0.251	1.2	4.8	O K
360 min Summer	98.806	0.206	1.1	3.9	O K
480 min Summer	98.767	0.167	1.1	3.2	O K
600 min Summer	98.734	0.134	1.1	2.5	O K
720 min Summer	98.707	0.107	1.0	2.0	O K
960 min Summer	98.668	0.068	1.0	1.3	O K
1440 min Summer	98.644	0.044	0.9	0.8	O K
2160 min Summer	98.632	0.032	0.6	0.6	O K
2880 min Summer	98.626	0.026	0.5	0.5	O K
4320 min Summer	98.619	0.019	0.4	0.4	O K
5760 min Summer	98.615	0.015	0.3	0.3	O K
7200 min Summer	98.613	0.013	0.3	0.2	O K
8640 min Summer	98.611	0.011	0.2	0.2	O K
10080 min Summer	98.610	0.010	0.2	0.2	O K
15 min Winter	98.857	0.257	1.2	4.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m <sup>3</sup> )	Time-Peak (mins)
15 min Summer	136.560	0.0	17
30 min Summer	91.729	0.0	30
60 min Summer	58.739	0.0	48
120 min Summer	36.254	0.0	82
180 min Summer	26.900	0.0	118
240 min Summer	21.623	0.0	150
360 min Summer	15.914	0.0	216
480 min Summer	12.782	0.0	278
600 min Summer	10.774	0.0	338
720 min Summer	9.365	0.0	398
960 min Summer	7.499	0.0	510
1440 min Summer	5.473	0.0	736
2160 min Summer	3.985	0.0	1100
2880 min Summer	3.178	0.0	1468
4320 min Summer	2.306	0.0	2196
5760 min Summer	1.834	0.0	2904
7200 min Summer	1.536	0.0	3672
8640 min Summer	1.330	0.0	4288
10080 min Summer	1.178	0.0	4984
15 min Winter	136.560	0.0	17


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Summary of Results for 100 year Return Period (+45%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m <sup>3</sup> )	Status
30 min Winter	98.918	0.318	1.2	6.0	O K
60 min Winter	98.947	0.347	1.2	6.6	O K
120 min Winter	98.937	0.337	1.2	6.4	O K
180 min Winter	98.903	0.303	1.2	5.8	O K
240 min Winter	98.865	0.265	1.2	5.0	O K
360 min Winter	98.797	0.197	1.1	3.7	O K
480 min Winter	98.740	0.140	1.1	2.7	O K
600 min Winter	98.695	0.095	1.0	1.8	O K
720 min Winter	98.663	0.063	1.0	1.2	O K
960 min Winter	98.644	0.044	0.9	0.8	O K
1440 min Winter	98.632	0.032	0.6	0.6	O K
2160 min Winter	98.624	0.024	0.5	0.4	O K
2880 min Winter	98.619	0.019	0.4	0.4	O K
4320 min Winter	98.614	0.014	0.3	0.3	O K
5760 min Winter	98.611	0.011	0.2	0.2	O K
7200 min Winter	98.609	0.009	0.2	0.2	O K
8640 min Winter	98.608	0.008	0.2	0.2	O K
10080 min Winter	98.607	0.007	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m <sup>3</sup> )	Time-Peak (mins)
30 min Winter	91.729	0.0	30
60 min Winter	58.739	0.0	52
120 min Winter	36.254	0.0	90
180 min Winter	26.900	0.0	126
240 min Winter	21.623	0.0	162
360 min Winter	15.914	0.0	230
480 min Winter	12.782	0.0	292
600 min Winter	10.774	0.0	348
720 min Winter	9.365	0.0	396
960 min Winter	7.499	0.0	500
1440 min Winter	5.473	0.0	736
2160 min Winter	3.985	0.0	1100
2880 min Winter	3.178	0.0	1468
4320 min Winter	2.306	0.0	2144
5760 min Winter	1.834	0.0	2880
7200 min Winter	1.536	0.0	3576
8640 min Winter	1.330	0.0	4376
10080 min Winter	1.178	0.0	5304

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.000	Shortest Storm (mins)	15
Ratio R	0.350	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+45

Time Area Diagram

Total Area (ha) 0.020

Time (mins)	Area
From:	To: (ha)
0	4 0.020

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Model Details

Storage is Online Cover Level (m) 100.000

Cellular Storage Structure

Invert Level (m) 98.600 Safety Factor 2.0  
 Infiltration Coefficient Base (m/hr) 0.34285 Porosity 0.95  
 Infiltration Coefficient Side (m/hr) 0.34285

Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )
0.000	20.0	20.0	0.500	0.0	27.2
0.400	20.0	27.2			