


Polypipe Civils		Page 1
Charnwood Business Park Loughborough Leicestershire LE11 1LE	103882 Gilbert Road, Kinswood 4m x 3.5m x 0.4m	
Date 24/10/2023 File T-MD-103882_TR_MD1 (1 i...	Designed by TR Checked by	

Micro Drainage Source Control 2020.1.3

Summary of Results for 30 year Return Period (+45%)

Half Drain Time : 53 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m <sup>3</sup> )	Status
15 min Summer	98.851	0.251	0.8	3.3	O K
30 min Summer	98.905	0.305	0.9	4.1	O K
60 min Summer	98.932	0.332	0.9	4.4	O K
120 min Summer	98.929	0.329	0.9	4.4	O K
180 min Summer	98.909	0.309	0.9	4.1	O K
240 min Summer	98.885	0.285	0.9	3.8	O K
360 min Summer	98.841	0.241	0.8	3.2	O K
480 min Summer	98.801	0.201	0.8	2.7	O K
600 min Summer	98.767	0.167	0.8	2.2	O K
720 min Summer	98.737	0.137	0.8	1.8	O K
960 min Summer	98.692	0.092	0.7	1.2	O K
1440 min Summer	98.649	0.049	0.7	0.7	O K
2160 min Summer	98.637	0.037	0.5	0.5	O K
2880 min Summer	98.630	0.030	0.4	0.4	O K
4320 min Summer	98.622	0.022	0.3	0.3	O K
5760 min Summer	98.618	0.018	0.2	0.2	O K
7200 min Summer	98.615	0.015	0.2	0.2	O K
8640 min Summer	98.613	0.013	0.2	0.2	O K
10080 min Summer	98.612	0.012	0.2	0.2	O K
15 min Winter	98.885	0.285	0.9	3.8	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m <sup>3</sup> )	Time-Peak (mins)
15 min Summer	105.388	0.0	17
30 min Summer	70.126	0.0	31
60 min Summer	44.676	0.0	48
120 min Summer	27.603	0.0	84
180 min Summer	20.577	0.0	118
240 min Summer	16.627	0.0	152
360 min Summer	12.315	0.0	218
480 min Summer	9.939	0.0	280
600 min Summer	8.411	0.0	342
720 min Summer	7.335	0.0	400
960 min Summer	5.907	0.0	518
1440 min Summer	4.348	0.0	736
2160 min Summer	3.195	0.0	1100
2880 min Summer	2.566	0.0	1468
4320 min Summer	1.881	0.0	2200
5760 min Summer	1.508	0.0	2920
7200 min Summer	1.271	0.0	3672
8640 min Summer	1.105	0.0	4392
10080 min Summer	0.982	0.0	5096
15 min Winter	105.388	0.0	17

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Summary of Results for 30 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	98.950	0.350	0.9	4.7	O K
60 min Winter	98.981	0.381	0.9	5.1	O K
120 min Winter	98.973	0.373	0.9	5.0	O K
180 min Winter	98.941	0.341	0.9	4.5	O K
240 min Winter	98.904	0.304	0.9	4.0	O K
360 min Winter	98.836	0.236	0.8	3.1	O K
480 min Winter	98.778	0.178	0.8	2.4	O K
600 min Winter	98.729	0.129	0.8	1.7	O K
720 min Winter	98.690	0.090	0.7	1.2	O K
960 min Winter	98.649	0.049	0.7	0.7	O K
1440 min Winter	98.636	0.036	0.5	0.5	O K
2160 min Winter	98.627	0.027	0.4	0.4	O K
2880 min Winter	98.622	0.022	0.3	0.3	O K
4320 min Winter	98.616	0.016	0.2	0.2	O K
5760 min Winter	98.613	0.013	0.2	0.2	O K
7200 min Winter	98.611	0.011	0.2	0.1	O K
8640 min Winter	98.609	0.009	0.1	0.1	O K
10080 min Winter	98.608	0.008	0.1	0.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m <sup>3</sup> )	Time-Peak (mins)
30 min Winter	70.126	0.0	31
60 min Winter	44.676	0.0	52
120 min Winter	27.603	0.0	90
180 min Winter	20.577	0.0	128
240 min Winter	16.627	0.0	164
360 min Winter	12.315	0.0	232
480 min Winter	9.939	0.0	296
600 min Winter	8.411	0.0	356
720 min Winter	7.335	0.0	412
960 min Winter	5.907	0.0	492
1440 min Winter	4.348	0.0	736
2160 min Winter	3.195	0.0	1100
2880 min Winter	2.566	0.0	1468
4320 min Winter	1.881	0.0	2204
5760 min Winter	1.508	0.0	2936
7200 min Winter	1.271	0.0	3632
8640 min Winter	1.105	0.0	4408
10080 min Winter	0.982	0.0	5136

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Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	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	14.0	14.0	0.500	0.0	20.0
0.400	14.0	20.0			