

	R = 18						Inflow Mtr3	
Min /Hr	Z1	M5	Z2	M10	roof run off			
					mtr 2			
5	20mm x 0.27		5.4	1.19	6.426	0.006426	120	0.77
10	20mm x 0.41		8.2	1.21	9.922	0.009922	120	1.19
15	20mm x 0.51		10.2	1.22	12.444	0.012444	120	1.49
30	20mm x 0.75		14.2	1.24	17.608	0.017608	120	2.11
1	20mm x 1		20	1.24	24.8	0.0248	120	2.98
2	20mm x 1.36		27.2	1.23	33.456	0.033456	120	4.01
4	20mm x 1.86		37.2	1.2	44.64	0.04464	120	5.36
6	20mm x 2.25		45	1.18	53.1	0.0531	120	6.37
10	20mm x 2.86		57.2	1.16	66.352	0.066352	120	7.96
24	20mm x 4.30		86	1.135	97.61	0.09761	120	11.71

Trial pit to be tested is

1 mtr long

.60 mtr wide

1.5 mtr deep (1.1 mtr is the effective depth from invert of inlet pipe)

Soil infiltraiton Rate		<u>F = V (p75-25) / A(p50) x t (p75-25)</u>	
V	1 x 0.6 x 1.1*50%	<u>0.33 mtrs3</u>	Volume in pit between 75 % / 25%
A	(1 x 0.75 x 2) +(0.6 x 0.75 x 2) + (0.6 x 1)		
	1.5 + 0.9 + 0.6	<u>3m2</u>	
T	.75 / (4 x 255) =	0.00074	
	.75 / (4 x 295) =	0.00064	
	.75 / (4 x 314) =	0.0006	
Average Infiltration			

$$0.33 / (3 \times 288 \times 60) = 0.0000064$$

$$6.4 \times 10^{-6}$$

Outflow	$(O = a(s50)(x F x D))$	
a(s50)	$2 \times (1 + W) \times (1.10 \text{ Effective depth}) / 2$	
	$1.50 + 1.50 WM^2$	
F	$6.4 \times 10^{-6} \text{ ms}$	
D	5 Min storm (300 sec)	M10-5 (do with other upto 24 hour)
	$(1.50 + 1.50 W) \times 6.4 \times 10^{-4} \times 300$	0.00576

Storage Volume

Effective Storage Volume with 40% void space $1.50 \times 1 \times W \times 0.4 = 0.6WM^3$

Satisfactory Strogae of M10-5 using $S = I - O$:

Therefore

$0.77 - ((1.50 + 1.50W) \times (6.4 \times 10^{-6})) \times 300$

$0.77 - 0.00576$

0.76 Required Soakaway width for M10-5 strom

inflow	sec					
0.77	3	300	0.0000064	0.0000192	0.00576	0.77
1.19	3	600	0.0000064	0.0000192	0.01152	1.18
1.49	3	900	0.0000064	0.0000192	0.01728	1.48
2.11	3	1800	0.0000064	0.0000192	0.03456	2.08
2.98	3	3600	0.0000064	0.0000192	0.06912	2.91
4.01	3	7200	0.0000064	0.0000192	0.13824	3.88
5.36	3	14400	0.0000064	0.0000192	0.27648	5.08
6.37	3	21600	0.0000064	0.0000192	0.41472	5.96
7.96	3	36000	0.0000064	0.0000192	0.6912	7.27
11.71	3	86400	0.0000064	0.0000192	1.65888	10.05