

	Eden Court, Lon Parcwr, Ruthin, 01824 702220	Calculations	ref w948			
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Section :	Infiltration Test - Trial Pit TP A		revision A			
Prepared by:	Gemma Roberts	Date:	20/04/2011			
Checked by:	Miriam Evans	Date:	26/04/2011			
Approved by:	Robert Evans	Date:				
Calculation of infiltration rates based on method described in BRE Digest 365						
Test 1 Time (mins)	Depth (mm)	Test 2 Time (mins)	Depth (mm)	Test 3 Time (mins)	Depth (mm)	
0	880	0	820	0	840	From test sheets
2	970	2	890	2	920	From test sheets
5	1190	5	1080	5	1100	From test sheets
10	1470	10	1320	10	1360	From test sheets
15	1560	15	1390	15	1420	From test sheets
19	1600	20	1460	20	1480	From test sheets
		25	1510	25	1520	From test sheets
		30	1560	30	1540	From test sheets
		35	1600	35	1570	From test sheets
				40	1600	From test sheets
						From test sheets
						From test sheets
						From test sheets
						From test sheets
						From test sheets
						From test sheets
						From test sheets
						From test sheets
						From test sheets
						From test sheets
Eff depth d (mm)	720.0		780.0		760.0	(Max-Min)
25% depth (mm)	1060.0		1015.0		1030.0	0.25*d+Min
75% depth (mm)	1420.0		1405.0		1410.0	0.75*d+Min
Time 25% t ₂₅ (min)	2.5	From p2	2.7	From p3	2.6	From p4
Time 75% t ₇₅ (min)	3.8	From p2	5.2	From p3	4.6	From p4
Time t _{p25-75} (sec)	78		150		120	(t ₇₅ - t ₂₅)*60
Test pit details & infiltration rate						
Length (m)	2.500		2.500		2.500	From test sheets
Width (m)	0.600		0.600		0.600	From test sheets
Drop H ₂₅₋₇₅ (m)	0.360		0.390		0.380	d/2/10000
Volume V _{p25-75} (m3)	0.540		0.585		0.570	L*W*H
Eff Area a _{p50} (m2)	3.732		3.918		3.856	2*(L+W)*H + L*W
Infiltration f (m/s)	1.855E-03		9.954E-04		1.232E-03	V _{p25-75} /((a _{p50} *t _{p25-75}))
Average Infiltration rate	1.361E-03 (m/s)					



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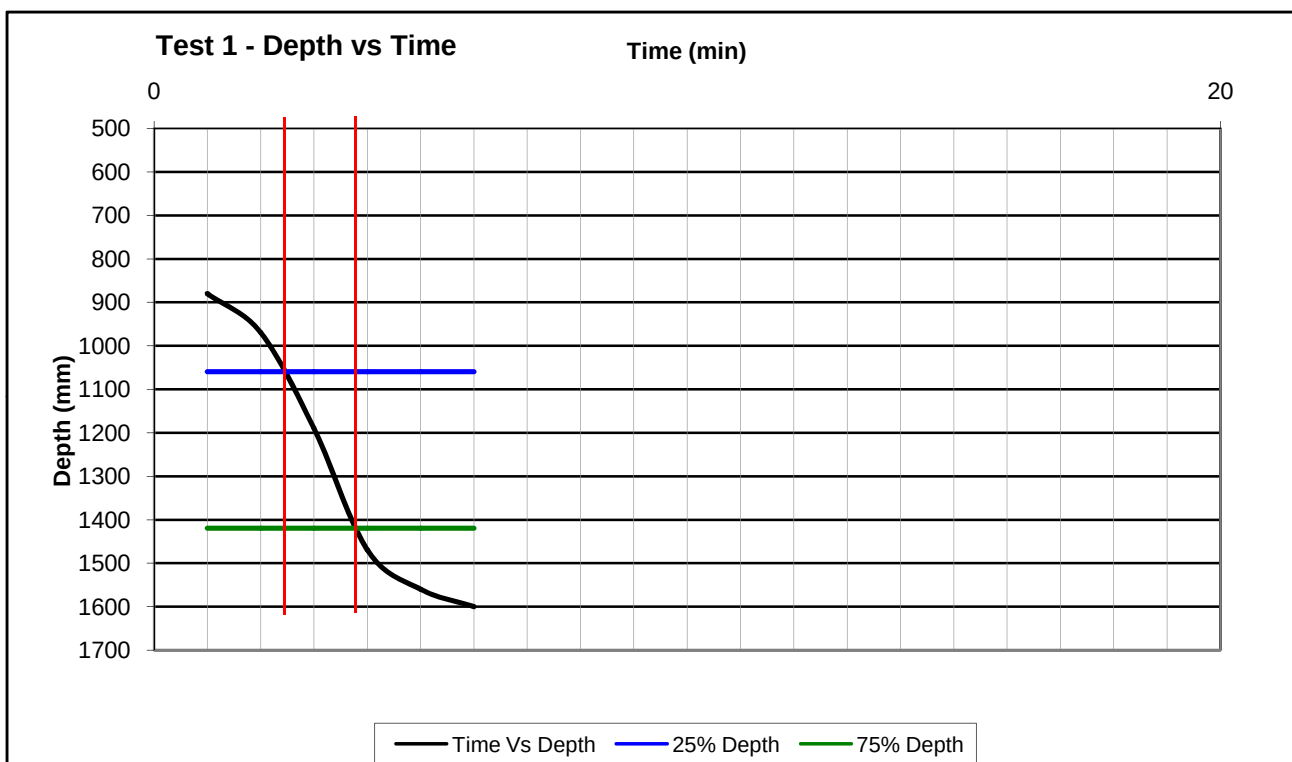
Infiltration Test - Trial Pit TP A

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Calculation of infiltration rates based on method described in BRE Digest 365

Test 1 - Results Chart



Manually read off time 25% and time 75% values from intersection of lines and check against pro-rata value calculated below.

Enter chosen values:

Time 25%	2.5
Time 75%	3.8

Pro-rata calculation for time to 25% & 75% depth

2.0	970.0	low value 25%
3.2	1060.0	pro-rata 25%
5.0	1190.0	high value 25%

2.0	970.0	low value 75%
8.1	1420.0	pro-rata 75%
5.0	1190.0	high value 75%

Enter high and low values of time and depth from table p1 (yellow)
Pro-rata depths are automatically entered from table p1 (green)
Pro-rata times are calculated as linear proportional values (blue)



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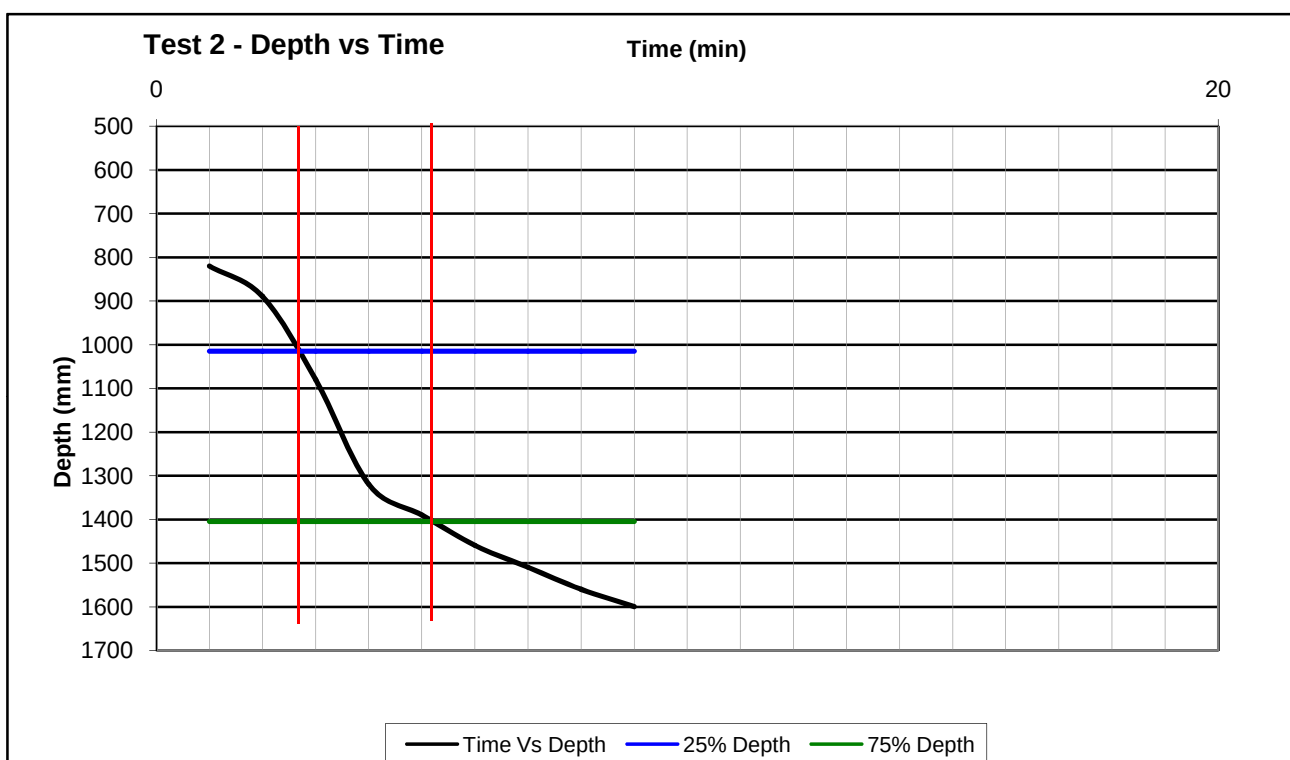
Infiltration Test - Trial Pit TP A

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Test 2 - Results Chart



Manually read off time 25% and time 75% values from intersection of lines and check against pro-rata value calculated below.

Enter chosen values:

Time 25%	2.7
Time 75%	5.2

Pro-rata calculation for elapsed time to 25% & 75% depth

2.0	890.0	low value 25%
4.0	1015.0	pro-rata 25%
5.0	1080.0	high value 25%

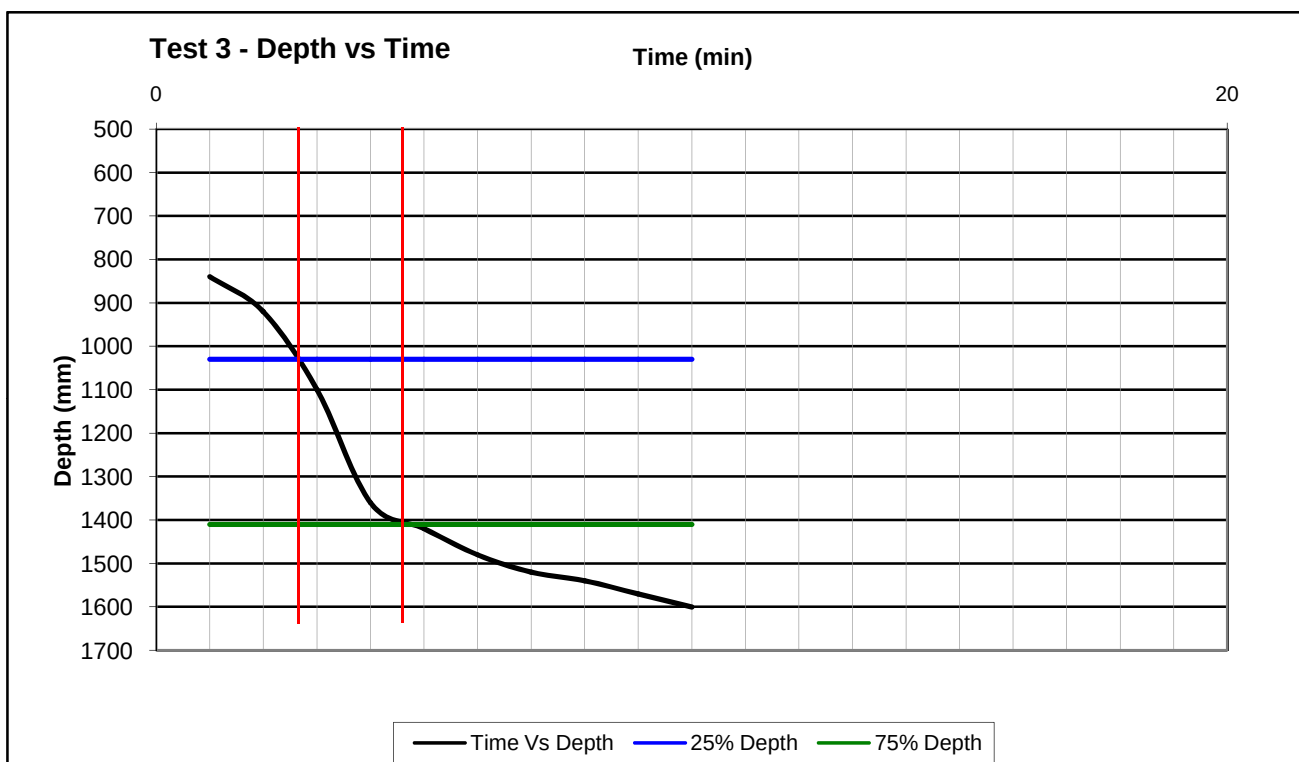
5.0	1080.0	low value 75%
11.8	1405.0	pro-rata 75%
10.0	1320.0	high value 75%

Enter high and low values of time and depth from table p1 (yellow)
Pro-rata depths are automatically entered from table p1 (green)
Pro-rata times are calculated as linear proportional values (blue)

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Test 3 - Results Chart



Manually read off time 25% and time 75% values from intersection of lines and check against pro-rata value calculated below.

Enter chosen values:

Time 25%	2.6
Time 75%	4.6

Pro-rata calculation for elapsed time to 25% & 75% depth

2.0	920.0	low value 25%
3.8	1030.0	pro-rata 25%
5.0	1100.0	high value 25%

2.0	920.0	low value 75%
10.2	1410.0	pro-rata 75%
5.0	1100.0	high value 75%

Enter high and low values of time and depth from table p1 (yellow)
Pro-rata depths are automatically entered from table p1 (green)
Pro-rata times are calculated as linear proportional values (blue)