



PercolationTests.ie

Planning Assessments & Land Surveys

Tel: 087 6636 757 Email: percolationtests@gmail.com Web: www.percolationtests.ie

BRE Digest 365 Report.

Prepared on behalf of:

John Lyons

At:

**51 Grange Park & St Patricks
Cottages,
Rathfarnham,
Dublin.**



PercolationTests.ie

Planning Assessments & Land Surveys

Tel: 087 6636 757 Email: percolationtests@gmail.com Web: www.percolationtests.ie

Scope of Report.

The findings of this report are the result of an on-site infiltration test. Interpretations and conclusions included in the report are based on knowledge of the ground conditions following detailed investigations, as well as the regional soils, subsoils and bedrock geology, and the experience of the author. David Ryan has prepared this report in line with the best current practice and with all reasonable skill, care and diligence in consideration of the limits imposed by the survey techniques used and resources devoted to it by agreement with the client.

David Ryan accepts no responsibility for any matters arising if any recommendations contained in this document are not carried out, or are partially carried out, without further advice being obtained from David Ryan.

Cillron Limited

Newtownmoyaghy, Kilcock, Co. Kildare.
www.percolationtests.ie
Tel: 087 6636757

BRE Digest 365 Test

Revision: 1.00

Job No: Soakpit 1 Page: C/01

Section: 51 Grange Park & St Patricks Cottages, Rathfarnham

Prepared By: DR Date: 19/07/2022

ALTERNATIVE SOAKAWAY SIZES			
	trench soakaways		
	width of trench [mm]:	450	600
required trench length [m]:	5.24	4.19	3.07
	ring soakaways		
	diameter of ring [mm]:	1500	2100
required pit diameter [m]:	1.60	1.61	1.60

* Based on effective depth and number of pits as in Soakaway Data table

SUMMARY OF CALCULATIONS	
critical design rainfall duration t_{crit} ' =	240 min
required storage volume V_{req} ' =	2.21 m ³
provided storage volume V_{prov} ' =	2.28 m ³
utilisation factor =	0.97 .OK
required time to discharge 50% t_{50} ' =	4.00 hours
utilisation factor =	0.17 .OK

GENERAL DATA	
site location:	██████████ Ireland
soakaway type:	infilled pit or trench
impermeable area drained to soakaway 'A' [m ²] =	75
60 min rainfall depth of 5 year return period 'R' [mm] =	16
M5-60 to M5-2d rainfall ratio 'r' =	0.28
allowance for climate change:	20%

SOAKAWAY DATA	
soakaway width 'W' [m] =	1.50
soakaway length 'L' [m] =	2.00
total depth from ground level 'D _b ' [m] =	1.20
depth to drain invert level 'D _d ' [m] =	0.40
soakaway effective depth 'D _{eff} ' [m] =	0.80
free volume in infill aggregate [%] =	95

SOIL INFILTRATION DATA	
allowance for infiltration through soakaway base:	20%
available on-site infiltration test results:	<input checked="" type="radio"/> Yes <input type="radio"/> No
use soakage trial pit table below	
internal surface area of trial pit 'a _{p50} ' [m ²] =	1.10
storage volume between 75-25% 'V _p ' [m ³] =	0.10
time for water to fall from 75-25% 't _p ' [min] =	65.00
soil infiltration rate 'Y' [m/s] =	2.33E-05

SOAKAGE TRIAL PIT DATA	
soakage trial pit width 'W _i ' [m] =	0.50
soakage trial pit length 'L _i ' [m] =	1.00
total depth from ground level 'D _{ib} ' [m] =	1.20
depth to pipe invert level 'D _{ip} ' [m] =	0.80
soakage trial pit effective depth 'D _{left} ' [m] =	0.40
free volume in infill aggregate [%] =	100

NOTE: faces of excavation assumed to be vertical

Infiltration rate: Very good – No mottling noted above 1.2m below ground level.

SOAKAGE TRIAL PIT INFILTRATION TEST RESULTS																				
water level measurement N ^o :		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Soakage Trial 1	time [min] =	0	45																	
	depth to water [m] =	0.90	1.10																	
Soakage Trial 2	time [min] =	0	50																	
	depth to water [m] =	0.90	1.10																	
Soakage Trial 3	time [min] =	0	65																	
	depth to water [m] =	0.90	1.10																	