



# Percolation Test – Results and Drainage Field Calculation Form

## Guidance Notes:

The percolation test should be carried out in accordance with document H2 of the Building Regulations.

A preliminary ground assessment should be undertaken to determine the suitability of the ground.

The following check list indicates the actions that should be taken and the type of information that should be collected:

- Natural Resources Wales groundwater protection policy;
- Underlying geology and aquifers;
- Whether the ground is liable to flooding;
- Nature of the sub-soil and groundwater vulnerability;
- Implication of plot size;
- Proximity of underground services;
- Ground topography and local drainage patterns;
- Whether water is abstracted for drinking, used in food processing or farm dairies;
- Implication for, and of, trees and other vegetation;
- Location of surface waters and terrestrial ecosystems

If the preliminary ground assessment indicates that the ground is unsuitable for the installation of an infiltration system an alternative disposal method should be considered.

DISTANCES FROM PROPERTIES			
Distance from	Dwelling	Watercourse	Borehole/well
Septic Tank	7m	10m	50m
Treatment plant	7m	10m	50m
Drainage field	15m	10m	50m

Prior to the main test a trial hole should be dug to determine the position of the water table and soil conditions. The trial hole should be a minimum of 1m<sup>2</sup> in area and 2m deep, or a minimum of 1.5m below the invert of the proposed distribution pipes.

The trial hole should be left uncovered for a period of 48 hours before measuring any water table level. For safe and effective dispersal of the wastewater, the groundwater and bedrock should be at least 1m below the bottom of the distribution pipes.

It should be noted that it is the seasonally highest level of the water table that should be determined in the infiltration area.

## Conducting the main porosity test

1. These tests should be carried out within and be representative of, the proposed infiltration area which should be at least 5m from the intended building and any boundary.
2. Excavate 2 percolation holes, not less than 5m apart, 300mm square to a depth of 300mm below the proposed invert level of the effluent distribution pipe. Where deep holes are necessary, the hole should conform to this shape at the bottom but may be enlarged above the 300mm level to enable safe excavation to be carried out.
3. Fill the 300mm square section of the holes to a depth of at least 300mm with water and allow it to seep away overnight. It is important to saturate the soil surrounding the test hole to simulate day to day conditions in an operational drainage field.
4. Next day, refill the test sections with water to a depth of at least 300mm and observe the time (T) in seconds, for the water to seep away from 75% to 25% full level.
5. Extreme weather conditions should be avoided when testing.
6. In evaluating your test results please note that where the  $V_p$  value does not fall between 15 secs/mm and 100secs/mm then infiltration trench or bed systems may not be possible.

***# Please complete the form overleaf and return to appointed planning officer and ensure that the porosity test holes are left open for inspection.***

I, **J A Morgan** on behalf of **Hughes Architects**

Have carried out percolation tests in accordance with the guidance provided with this form on **08-09/06/19** in respect of premises at:

**Motorcross Track, Adjacent to Rhyd Blawd Farm, Disserth – Studio Plot**

Description of ground strata:

**Topsoil – 100mm**

**Gravel/sand layer – 225mm**

**Clay subsoil – 1500mm+**

The overall depth of the test holes dug were: *(state in metres/millimeters)*

Test Hole 1	Test Hole 2
900mm	900mm

I confirm that the water table did not rise to within 1 metre of the invert of the proposed land Irrigation scheme.

The weather conditions on the day were: **Overcast**

The results of the percolation tests were: \_\_\_\_\_

Test Hole 1				Test Hole 2			
	Time in Seconds		V <sub>p</sub>		Time in Seconds		V <sub>p</sub>
Test 1	21600	+150	144	Test 1	21600	+150	144
Test 2	/	+150	/	Test 2	/	+150	/
Test 3	/	+150	/	Test 3	/	+150	/
Trial Hole 1 – Average V <sub>p</sub>				Trial Hole 1 – Average V <sub>p</sub>			

Average V <sub>p</sub> of Test Holes 1 & 2	144
Use this averaged V <sub>p</sub> figure in the following formula $P \times V_p \times 0.25 = A$	

Calculating the drainage field area							Key	
P	X	V <sub>p</sub>	X	0.25	=	A	P = no of people served by the tank A = floor area of the drainage field (in square metres) V <sub>p</sub> = Percolation Value TW= Trench width in metres L = length of the drainage field (in metres)	
	X		X	0.25	=	m <sup>2</sup>		
Calculating the linear drainage field length								
A	÷	TW	=	L				
	÷		=		m			

**NB** For wastewater that has received secondary treatment followed by settlement, the area may be reduced by 20% i.e.  $A = P \times V_p \times 0.2$

Where the calculated result indicates the need for a long drainage field length (in excess of 200m), then serious consideration should be given to the use of a package treatment system.

If a package treatment system is used and discharges to a watercourse a Consent to Discharge from Natural Resources Wales would be needed.

Signed: **Chris Morgan** Date: **10/06/19** Tel No: \_\_\_\_\_

Address: \_\_\_\_\_

I, **J A Morgan** on behalf of **Hughes Architects**

Have carried out percolation tests in accordance with the guidance provided with this form on **08-09/06/19** in respect of premises at:

**Motorcross Track, Adjacent to Rhyd Blawd Farm, Disserseth – Trackside Plot**

Description of ground strata:

**Topsoil – 100mm**

**Gravel/sand layer – 225mm**

**Clay subsoil – 1500mm+**

The overall depth of the test holes dug were: *(state in metres/millimeters)*

Test Hole 1	Test Hole 2
900mm	900mm

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Test 3	/	+150	/	Test 3	/	+150	/
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Signed: **Chris Morgan** Date: **10/06/19** Tel No: \_\_\_\_\_

Address: \_\_\_\_\_