Percolation test – Results and Drainage field calculation for septic tanks

I, *(name)*……on behalf of ap*plicant)*……..……..
have carried out percolation tests in accordance with the guidance provided with this form on date) ……in respect of premises at:
……
……
……

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

Trial Hole 1	Trial Hole 2

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…….
The results of the percolation tests were:

Trial hole 1				**Trial hole 2**			
	Time in seconds		Vp		Time in secounds		Vp
Test 1		+150		Test1		+150	
Test 2		+150		Test 2		+150	
Test 3		+150		Test 3		+150	
Trail hole 1 average Vp				Trial Hole 2 average Vp			
Average Vp of trial holes 1 and 2							

Use this averaged Vp figure in the following formula P x Vp x 0.25 = A_t
where P = no of people served by the tank A_t = floor area of the drainage field in square metres)

P x Vp x 0.25 = A_t

..... x ..... x 0.25 = ... m^2 of drainage field.

Assuming a 600mm wide drainage trench then .....m^2 ÷ 0.6 =……..linear metres. I am aware that I require a Consent to Discharge from the Environment Agency and this is attached / or has been requested *(delete as appropriate).*

Signed:……Address ……..
……

……
Date ……..
……
Telephone Number ……
***Please read the accompanying documentation when completing this form This form should be returned to** Building Control , Civic Centre , Breck Road, Poulton-Le-Fylde FY6 7PU

Percolation test guidance notes

Percolation Test to BS6297 - NOTE: The test must be carried out over 4 consecutive days. 3 separate trial holes should be provided

1 Dig a hole in the area where any future land drains are likely to be. This hole should be large enough to work in – say 600mm square – and have a depth equal to the proposed depth of the land drains from the septic tank. If it is known that the winter water table rises to within 1.0m of the land drains, then the TEST HAS FAILED.

2 In the bottom of the first hole, form a second hole precisely 300mm square and 300mm deep measured below the bottom of the first hole.

3 If ground water seeps into the excavations before the test can be commenced then the TEST HAS FAILED.

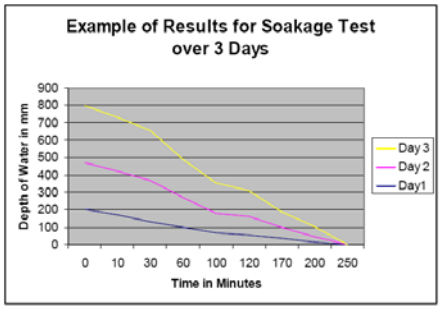
4 If the excavation is dry, fill the small hole with water and allow to soak completely away overnight (see warning note).

5 If, on the second day, there is water in the hole, the TEST HAS FAILED.

6 If the excavation is dry, partly fill the small hole with water to a depth of 250mm and determine the time it takes to soak away completely. If any water remains by the third day, the TEST HAS FAILED.

7 Repeat the test with 250mm of water put in the hole on the third day and allow to soak away completely overnight, each time recording the time to soak away. If on any day there is water remaining from the previous day, then THE TEST HAS FAILED. IT IS IMPERATIVE THAT THERE IS NO BREAK IN THE CONTINUITY OF TESTS EACH CONSECUTIVE DAY.

8 To make the determination of the soakage time easier, you can note the depth remaining at definite intervals of time and plot a graph as shown on the example. Sketch a smooth curve to meet the horizontal axis and thus give soakage time.



9 Average the soakage times as shown in the example and use this average time in the formula given, in order to arrive at the soakage area. Depending on the trench width selected, the length of land drain can be determined. A minimum length of 20m is recommended, even when a short soakage time is obtained.

10 If the average soakage time is more than 583 minutes, then the TEST HAS FAILED.

11 If the average soakage time is between 416 and 583 minutes, then underdrains leading to a water course will be required. There must be 0.5m

clearance between land drains and underdrains. If it is not possible to provide underdrains, then the TEST HAS FAILED. If underdrains are installed, permission to discharge to a watercourse will be required from the Environment Agency.
12 Before the test is finally completed, a second hole should be taken out a few metres away from the first test hole to a depth of 0.5m below the proposed level of the land drains. If ground water enters the second hole the TEST HAS FAILED.
13 If the test passes, the land drain layout is to be of the pattern recommended by the tank manufacturer.
14 If the test fails at any stage this shows the septic tank drainage will not function and a sealed cesspool or package treatment plant must be used.
15 If the test is satisfactory, a 2.7m3 septic tank (600 gallons/2700 litres) with associated land drains may be used for a single dwelling with a family of 4 persons. The size should be increased for each additional person.

WARNING
This test should be carried out carefully and every effort made to simulate the wet conditions found around every septic tank outlet. Septic tanks are relatively inexpensive compared to other forms of tank. However, you or your client should be aware that if a tank and its land drains do not function correctly in periods of wet weather it may be costly to rectify.
In periods of very dry weather you are advised to soak the small hole, at peration 4, a short while before letting the water soakaway overnight in order to simulate wetter conditions.

EXAMPLE
In the example, (see graph) the average soakage time is 263 minutes, therefore using the formula from the British Standard, the area of subsurface drainage trench is:-
At = P x Vp x 0.25
Where At = area of trench required
P = number of persons served by the tank
Vp = percolation value from soakage test
At = P x time in seconds x 0.25 = 4 x 263 x 60 x 0.25 = 63.12m2
depth in mm 250

Therefore, for a 600mm wide trench the total length of land drain required is 105m (63.12/0.6) which can be laid in a number of ways. The most common being a ducksfoot configuration or that detailed in the tank manufacturers literature.