PERCOLATION TESTS AND CALCULATIONS

For the proposed installation of a new soak away system
Based on BS6297 – Design and Installation of Small Sewage Treatment Works and Cesspools

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MAP/SKETCH OF SITE LAYOUT
(All measurements to be in metres unless otherwise stated)

Positions marked * are the approximate locations of the percolation tests

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Procedure for Percolation Test:

i) *Excavate hole to level of proposed outlet to the septic tank, then excavate test hole 300mm sq. x 250mm deep.*

ii) *Fill test hole with water and allow to seep away overnight.*

iii) *Next day fill test hole to not less than 250mm depth of water (care to be taken to avoid abnormal conditions, i.e. heavy rain, severe frost, drought).*

Calculations

Result of 1st Percolation Test

(a) Depth of water (mm) _____   (b) Time taken to soak away (secs) _____

Percolation Value (V_p) = (b) ÷ (a)   _____ (secs)

Result of 2nd Percolation Test

(a) Depth of water (mm) _____   (b) Time taken to soak away (secs) _____

Percolation Value (V_p) = (b) ÷ (a)   _____ (secs)

Result of 3rd Percolation Test

(a) Depth of water (mm) _____   (b) Time taken to soak away (secs) _____

Percolation Value (V_p) = (b) ÷ (a)   _____ (secs)

Calculations (continued)

Average V_p Value of test 1, 2 & 3   _____ (secs)   (This is known as the Percolation Value)

Number of persons (P) to be served   _____
by the new system

(Allow a realistic figure here, e.g for a 3 bedroom house, 4 to 5 persons)

Area of drainage trench (A_t) required   = P x V_p x 0.25 (or 0.2)

Substituting the values given above: A_t = _____ x _____ x _____

                                             = _____ square metres

Width (W) of new drainage trench   = _____ **metres**

Length (L) of new drainage trench   = A_t ÷ W

                                             = _____ ÷ _____ metres

                                             = _____ **metres**

Notes

1. Avoid carrying out the tests in abnormal weather conditions such as heavy rain, severe frost or drought.
2. In the event that any of the measurements in a test is 50% or more above or below the average of the results, make a further three measurements and calculate a further average.
3. Unless an average value of V_p of 24s or less is obtained (in which case no further tests are necessary), make further tests on a minimum of three different locations on the proposed route of a land drain, or at least three tests on separate days on the site proposed for a soak away.
4. If the Percolation Value (V_p) exceeds 140 seconds, the soil is not suitable for drain fields. If the value is between 100 and 140 seconds (about 7-10 hours to fall 250mm), under drains are desirable.
5. If results show a requirement for a drainage trench in excess of 200m, serious consideration should be given to an alternative system, which may be more economic.