

Geotechnical/Geoenvironmental – Drainage Design

With increases in heavy rainfall resulting from climate change, it is ever more important to get the basics of a drainage design correct. Ground & Water provides testing and analysis solutions to suit your requirements.

Soakaway and Infiltration Testing and Analysis (BRE365)

Ground & Water offers services which will help you to identify infiltration rates within the ground to assist with a design of a soakaway. The main way of identifying the infiltration rates is through a guidance created by BRE (Building Research Establishment) titled "BRE Digest 365". According to the guidance 'Soakaways are used to store the immediate surface water run-off from hard surfaced areas, such as roofs or car parks, and allow for efficient infiltration into the adjacent soil. They discharge their stored water sufficiently quickly to provide the necessary capacity to receive run-off from a subsequent storm.' Soakaways are often used in private housing developments, where there are no public sewers in the vicinity of a redevelopment area. Please note that 3 fillings may take more than one day to complete.

It should be noted that a preliminary assessment should be carried out prior to undertaking any infiltration tests to determine the suitability of the site. The assessment includes a consultation with the Environment Agency and your Local Authority.

The ground investigation comprises a series of machine-excavated trial pits followed by filling them with water and monitoring a decrease in water levels. The trial pits are normally between 0.30 – 0.60m in width, 1.00 – 2.00m in length and can reach up to 3.50 – 4.00m metres in depth, depending on the type of soil (cohesive, granular or chalk). As BRE Digest 365 suggests, three consecutive fillings must be

undertaken in a soakage testing pit to comply with the guidance. Upon completion of all three tests, our engineers use our in-house method to calculate infiltration rates of the ground, based on the BRE guidance.

Percolation Value Testing (pV)

Another service we offer is Percolation Value Testing, which is used to identify infiltration rates for use in wastewater treatment only. A percolation test must be undertaken as per guidance from BS6297:2007 and the Building Regulations (Part H 2015). The percolation test method includes the excavation of a hole to at least of 1.00m in depth or to below the invert level of the drainage field from which the treated waste will percolate. A further excavation is made at a base of the hole 300mm x 300mm x 300mm in dimensions. After filling the smaller excavation in the base with water, the time taken for the water levels to drop from 75% full to 25% full level is recorded. This test should be undertaken in at least two locations and should not be carried out during extreme weather conditions, such as heavy rain, severe frost or drought.



Ground & Water will be able to carry out any type of infiltration testing for you, making your experience enjoyable and hassle-free.

If you require any of the services described above, please email:

enquiries@groundandwater.co.uk

or call us on 0333 600 1221