

Information Sheet - Soakaways

Typically, soakaways are used to collect surface runoff prior to being discharged into the surrounding soil. They are usually employed in areas where the surface run-off cannot be disposed into existing sewers or watercourses.

A soakaway is constructed in one of two basic forms. A **Conventional Soakaway** comprises a partially perforated cylindrical or rectangular chamber, which allows the drainage of water into the surrounding soil.

In cases where impermeable soils overlie the permeable strata, the soakage must take place at depth and so a deep bored liner is used. This is known as a **Borehole Soakaway**. Here the water is transported from a sealed storage chamber to the soakage medium by a small diameter plastic or steel pipe, again perforated in part.

Borehole Soakaways are also often used in areas of cambered or fissured strata, such as the Hythe Beds in Kent, to reduce the risk of subsidence. Subsidence can occur around shallow soakaways if loose infilling within fissures is inundated with seepage from a soakaway. By discharging the runoff into fissures at depth the risk of inducing shallow subsidence is reduced.

Permeability Testing & Design

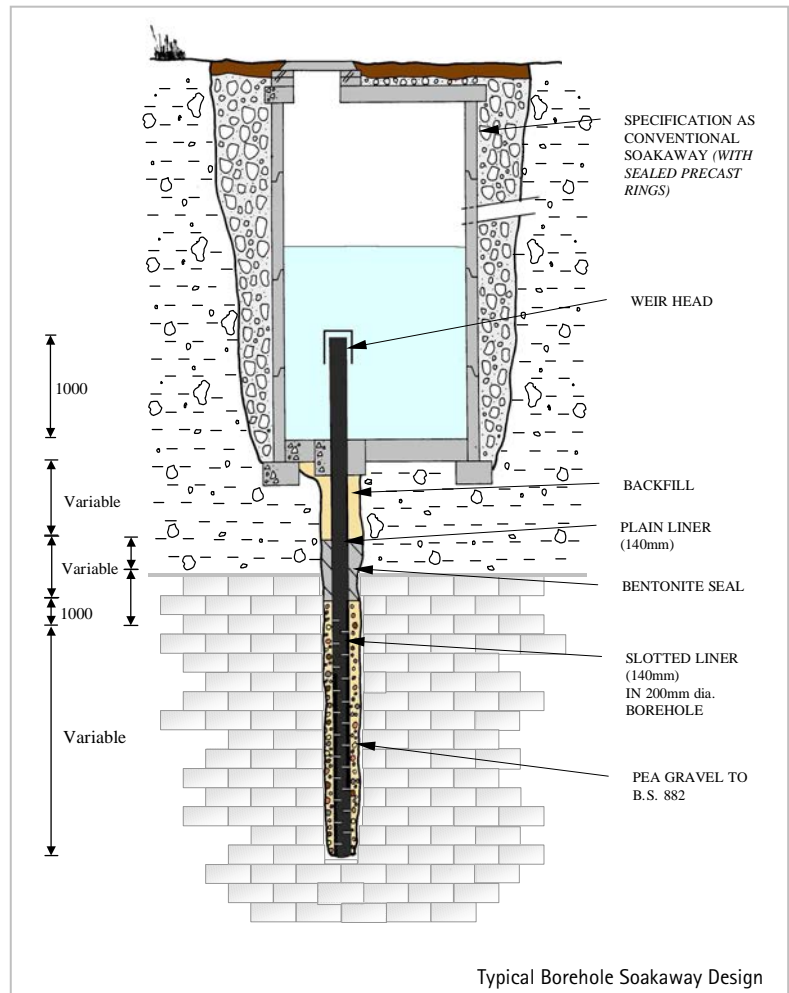
A soakaway must have capacity to store immediate run-off from roofs and hard surfaces, and the water must then be able to disperse into the surrounding soil quickly enough for the soakaway to be able to cope with the next storm. Percolation tests should be carried out to determine the capacity of the soil.

Permeability testing for **Conventional Soakaways** is undertaken using the **BRE Digest 365** test and is carried out in trial pits. Pits are often filled with gravel to ensure the sides remain stable. The permeability of the soil is determined by filling the pit with water from a bowser or tanker and determining the length of time for 75% of the volume of water to drain away. This is in effect a falling head test.

For **Borehole Soakaways** a test borehole and a soakage test (preferably a **Constant Head Test**) is required to determine if adequate soakage is available. Although many specifications indicate that falling head tests can also be used, they do not give a very realistic indication of how much infiltration can be discharged into a borehole in a given time period. If falling head tests are carried out, it is necessary to apply the driving head using permeability formulae to calculate the infiltration rate. This is not as accurate and is not as realistic as actually discharging a decent quantity of water into the borehole to measure the infiltration rate.

In all cases, the Environment Agency should be consulted to determine any restrictions that may apply to the site.

Southern Testing have considerable experience in undertaking permeability testing, both for conventional soakaway design, as well as the drilling, testing and installation for borehole soakaways.



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