

Soil Infiltration Test Summary – Trojan Close, Swansea

Purpose

- Soil infiltration testing was undertaken for CT Lewis Ltd at Trojan Close, Swansea to assess whether the site is suitable for a surface water infiltration blanket/soakaway system.
- Testing was carried out on 30 June 2026 in accordance with BRE 365 (Soakaway Design Guide).

Site Conditions

- The site is an existing brownfield transport and HGV parking yard.
- Ground conditions encountered:
 - Surface layer of crushed stone and gravel.
 - Made ground consisting of gravel, stones and rubble.
 - Underlying sand layer.
- Groundwater was encountered at approximately 1.4m depth.
- No evidence of contamination was identified during excavation.

Testing Undertaken

- A trial pit measuring approximately 1.0m × 0.4m and 1.4m deep was excavated.
- Three infiltration tests were carried out by filling the pit with water and measuring the time taken for water levels to drop from 75% depth to 25% depth.
- Results:
 - Test 1: 90 minutes
 - Test 2: 105 minutes
 - Test 3: 135 minutes (worst case used for design)

Key Findings

- Calculated soil infiltration rate: 15.7×10^{-6} m/s.
- Design infiltration coefficient (including factor of safety of 1.5): 10.5×10^{-6} m/s.
- The report states this represents a good infiltration rate, indicating the ground is free draining.

Drainage Assessment

- Assessment considered:
 - 1 in 100-year rainfall event.
 - 30% climate change allowance.
 - Drainage area of approximately 2,400m².
- Required infiltration blanket depth calculated as only 23mm.
- Time for the infiltration blanket to reduce to half volume calculated at approximately 17 minutes.
- The system passed BRE/CIRIA criteria, with discharge occurring well within the maximum 24-hour requirement.

Conclusion

- The site soils provide very good infiltration characteristics due to the underlying sandy strata and granular made ground.
- The existing permeable hardstanding can continue to function as an effective infiltration blanket.
- The ground has sufficient capacity to accommodate surface water runoff from a 1-in-100-year storm event plus 30% climate change allowance.
- The report concludes that the site is suitable for infiltration drainage and is considered free draining.

Summary

The testing demonstrates that the site has good natural drainage and infiltration capability, with surface water able to soak into the ground rapidly. The proposed permeable yard arrangement is considered adequate for managing rainfall without requiring significant additional drainage infrastructure.