



GROUND TECHNOLOGY



Standard Penetration Test

The Standard Penetration Test (SPT) is used to determine the density of granular strata, and correlate the undrained shear strength of cohesive soils. The SPT test is a frequently used and accepted method of empirically determining soil strength and calculating the bearing capacity and settlement of granular soils.

We are able to carry out SPT's within Cable Percussive Boreholes, Rotary Boreholes and Window Sampler Boreholes. Our team of engineers are very experienced in using the test data in order to provide rapid, reliable and cost effective assessment of basic soil parameters for foundation design and other routine geotechnical engineering problems requiring knowledge of ground strength and compressibility.

The test in the UK is standardised by BS EN ISO 22476-3, which is part of the published documentation under Eurocode 7 – Part 2: Ground Investigation and Testing. A key requirement of the standard is the need to regularly measure hammer efficiency ratios to comply with the standard. All of our hammers and probing equipment are fully calibrated to the standard using our own in-house testing equipment. We are also able to offer calibration services for third party drilling equipment.

The test itself involves the driving of a standard sampler tool a distance of 450 mm into the bottom of a borehole using the standard weight of 63.5kg falling through 760 mm. A disturbed sample from the split spoon is generally obtained. Within granular material, particularly gravels, the open drive shoe is replaced by a solid 60 degree cone (CPT). The blow counts arising from the tests are used to estimate geotechnical design parameters.