

Shelby sampler

A shelby sampler is a thin-walled soil sampler. The shelby samplers are used for soils that are particularly sensitive to sampling disturbance. The sampler consists of a thin-walled steel tube whose lower end is shaped to form a cutting edge. It is pushed into the soil by continuous static thrust from a hydraulic jack.

Fine soils

This sampler is usually only suitable for fine soils up to a firm to stiff consistency and free from large particles. It normally gives class 1 samples of fine cohesive soils, including sensitive clays. Samples of 75, 100 or 150mm in diameter can be obtained. The thin-walled Shelby sampler is not fitted out with a core catcher. However, a thicker-walled sampler with a core catcher is available.

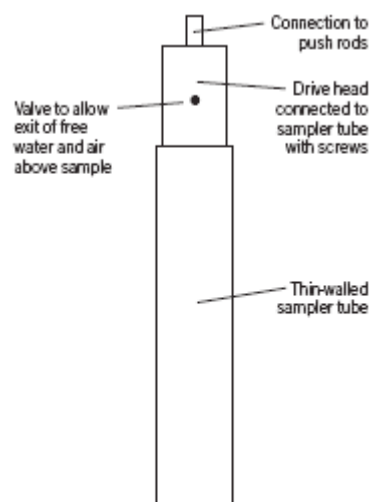
Disturbance

It is to be noted that disturbance at the base of the borehole occurs in weak soil below a certain depth because of stress relief, therefore pushing the Shelby sampler in using CPT equipment can overcome this to some degree.

At the end of the sampling process the thin steel tube containing the sample is removed from the sampler head, waxed, capped at both ends and labelled. The steel tube is used as a container to transport the sample to the laboratory thus avoiding any damage to the sample.

Cohesive soils

The Shelby sampler is ideally used for normally-consolidated and over-consolidated soils such as London Clay. It is not suitable for granular non-cohesive soils. The disadvantage of the Shelby sampler - in comparison with the MOSTAP sampler which can take samples at preselected depths - is that it has an open end (no cutting mouth) so it is necessary to start from ground level or pre-drill a borehole. Further problems are encountered where the sample hole does not remain open. In these situations the hole must be cased to prevent sampling of 'fall-in' materials.



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