



Windowless Sampling and Dynamic Probing Frequently Asked Questions:

Undertaken using a tracked rig Windowless Sampling and Dynamic Probing is completed using one machine, which is also capable of concrete coring to a depth of approximately 400mm.

What depths will Windowless Sampling and Dynamic Probing Achieve?

This drilling technique, abbreviate to WS and DP, is ideal for developing shallow boreholes to depths in the approximate range 2 – 5m below ground level, depending on soil types. In clay soils greater depths can be achieved, in dense granular soils, particularly with a high groundwater table, depths can be limited.

Why choose Windowless Sampling and Dynamic Probing Drilling Techniques?

Windowless sampling and Dynamic Probing are usually carried out in conjunction with each other, as they utilise the same drilling rig. Windowless sampling provides samples of the ground for assessment whilst Dynamic Probing provide data from which engineering data can be generated. However both intrusive techniques can be undertaken independently of each other.

This technique allows for approximately six Windowless Sampler and Dynamic Probing trial holes to be constructed on site in a day. It gives a cost effective compromise between Trial Pitting and Light Cable Percussive Drilling.

The resultant boreholes allow the installation of biogas and/or groundwater monitoring standpipes or piezometer pipes.

How does a Windowless Sampling and Dynamic Probing Rig Operate?

Windowless sampling involves the use of a small tracked drilling rig that has a drop hammer to drive in sampling tubes. Depth is achieved by successively driving tubes into the ground, via extension rods from the base of the hole made by the preceding tube. Samples are recovered in plastic liners which are slotted into the sampling tube and retained with a threaded collar. The plastic liners provide a continuous core samples which are returned to our laboratory for detailed logging.

Dynamic Probing involves the driving of a metal cone into the ground via a series of steel rods. These rods are driven from the surface by a hammer system that lifts and drops a 64kg-hammer onto the top of the rods through a set fall, thus ensuring a consistent energy input. The number of hammer blows that are required to drive the cone down by each 100mm increment are recorded. These blow counts then provide a comparative assessment from which ground engineering properties may be derived.

Will there be a mess left?

Windowless sampling recovers a continuous core and Dynamic probing does not involve “waste” material, therefore no mess is created.

Will there be an open hole left in the ground?

Upon completion holes are either reinstated back to the original condition (tarmac/concrete/turf) or a 6’ square stopcock cover will be concreted into position to allow access to any monitoring pipes that may have been installed. In areas of soft landscaping small surface depressions at the borehole location can occur over time.



Are there access restrictions?

Windowless Sampling and Dynamic Probing are undertaken with the same small tracked rig with a minimum width restriction of 800mm, therefore allowing access through a standard door frame. This machinery also has a detachable, hand carriable drilling head, therefore drilling can be undertaken up to 30m from the drill rig and reducing width access to 650mm.

General dimensions (normal rig):

Height: 3.00m (operating height)

Working area: 2.00m x 1.50m

drilling area up to 30° inclination

Pros

- Highly mobile
- Limited access requirements
- Minimal disturbance at ground level
- Allows installation of monitoring pipes
- Contamination assessment on recovered samples
- Geotechnical assessment of ground conditions
- Greater site coverage per day

Cons

- Depth restrictions
- Cannot penetrate rock
- Small diameter sampling tube
- Hole generally not cased



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