

Window (Dynamic) Sampling

This is a type of percussive drilling that involves the use of a compact tracked light rig, less than 1 tonne in weight, and is primarily used for targeting shallow soils (<10m). The drilling involves using a 63.5kg weight to drive 1m long hollow tubes into the ground. The compact nature of the drilling rig, called an “Archway Dart”, is such that it allows for sites with quite restricting access to be no concern. Possessing a narrow width of only 1220mm, that can be further reduced by removing the attached tool buckets to 600mm. The rig has a length of 2600mm and height of 1450mm when in transit. When set up for drilling, these length and width dimensions do change – the length increases slightly to 2800mm while the height of the rig reaches 3100mm.

Carrying out the Window Sampling method of drilling obtains good quality samples and is a simple operation. The process involves affixing a 1m hollow tube to the mast of the rig, this is then driven into the ground using the attached mechanical hammer. This tube is then retrieved from the ground, the captured soil removed for sampling, and the process is repeated. Typically, this form of investigation can reach a maximum depth of 10m depending on the nature of the ground conditions. The rig is operated by two operatives for safety and efficiency purposes.

The Window Sampling method of investigation allows for rapid investigations into shallow soil and the recovery of testing specimens suitable for both geotechnical and geo-environmental purposes. Along with recovering soil samples for testing, in-situ tests to assess soil strength and cohesion can also be carried out using this rig. Any tests carried out follow the same basic procedure as the previously described process for sample recovery, an instrument (Typically SPT or Dynamic Probe) is fitted to the mast of the rig and then driven into the ground.

Boreholes excavated by this drilling method are only 101mm in diameter, in rare cases the hole may need to be cased which increases the diameter to 115mm. They cause minimal disruption and damage to surfaces. All locations are fully reinstated in a like-for-like fashion unless a monitoring well is required. If this is the case, a discrete metal cover is fitted flush with the ground surface over the borehole’s location. Further information regarding the standpipe and its installation is available in a separate datasheet, which can be provided upon request if not already done so.



Figure 1: soil arisings from a Window Sampling borehole



Figure 2: an Archway Dart rig in transport mode