



DORMER SOIL SAMPLERS

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PRODUCT INFO

SAMPLING BEACH SAND

The sand above the water level is sampled using a sand sampler/auger in increments of 250-300mm deep. If that depth exceeds 1.0m then need to add a plain tubular extension rod (threaded each end male/female) which are available in 1.0m or 1.5m lengths (need to be tall to use 1.5m – when added to approx 300mm left above ground level from before means it becomes 1.8m high) and these are also available in painted steel or aluminium (aluminium is 0.5kg/metre lighter than the steel but more expensive).

When the water level is reached the saturated sand turns to a slurry and wont stay in the sand sampler and the sides of the hole collapse, so need to use casing and a sludger/bailer. The 62mm casing fits nicely inside the hole made by the 62mm sand sampler (sampler cuts 6mm bigger than 62mm) – see Note 1 below. The casing comes in 1.0m or 1.5m lengths (1.5m lengths have same aggregate height problem as extension rods – see note 1 below). The casing can only be forced into the wet sand 50-100mm and the saturated sand becomes a slurry so wont retain inside a normal sand sampler so need to use a sludger/bailer (see note 2 & 3). The sludger must not extend beyond the bottom of the casing and should only sample the slurry inside the end of the casing and the casing is incrementally advanced as slurry is captured. The sludger can be used on the end of a rope or can be attached to the same extension rods as used on the sand sampler (for dry sand) which gives more penetration power for better sample capture. The rope is much faster to insert and remove the sludger and reduces costs of the extra extension rods but is less efficient at sample collection.

In some silty sands the water removed by the sludger is slow to seep back inside the casing and can cause an unequal pressure difference between the inside and outside of the casing and as the depth below the waterlevel increases and/or the imbalance increases the external pressure can force sand up inside the casing causing incorrect sampling. This can be avoided by monitoring the water level inside the casing and if it exceeds 300mm difference, add water to the inside of the casing.

If roots or debris or hard layers are encountered it may require additional items like a Chisel or Star Drill or Spiral Auger to break them up.

Some spares are always useful, especially for new users in remote areas who may lose bits down a hole or damage something.

NOTES

1. The casing size is the OD (outside diameter) and the 62mm casing has an ID (inside diameter) of 52mm at the threaded ends. The casing is specially made by welding thin walled tube to thicker steel at the ends (need 10mm thick to cut threads and have flush fitting) where the threads are machined and then when joined the outside surface is flush to the next piece on the outside to reduce friction. If casing was 10mm thick all the way it would be too heavy. The 50mm casing should be 40mm ID which is the same size as our extension rods so is very restricted in its use. However, we make most 50mm casing using a 'V' shaped pipe thread instead of the coarser square thread which enables us to use 2mm thinner steel which just leaves enough room for the extension rods – not ideal but okay if 50mm is necessary. The square thread is better because it is not able to be accidentally cross-threaded and is less prone to damage and handles a bit of grit better.
2. The 1.0m lengths of extension rods and casing are the best for normal height people because most people stop working when the top gets to approx 300-400mm from ground level and when you add 1.0m it becomes 1.3 or 1.4m high (if you add a 1.5m length it becomes 1.8-1.9m high). On deep holes the 1.5m ones can be used below ground level and use a 1.0m length always at the top.

3. Some people call them sludgers and some call them bailers so I have a habit of using both terms. They have a ball valve in the bottom and when rhythmically jerked up and down they pump slurry into the sludgers tube.
4. The casing has male and female threaded ends to join them and the bottom needs a casing cutter to protect the end and it has teeth for roots or debris or hard chemically bonded layers of sand. The top thread needs a casing collar to protect that thread from damage and on the outside of the casing we have a movable wood/steel clamp that allows the user to push or pull or rotate the casing. Practiced users stand on the clamp to add penetration power while they use the sludger inside and the casing progressively penetrates as slurry is captured by the sludger.
5. Never leave the casing in for longer than necessary to avoid consolidation of the sand around the outside and jamming the casing. A vehicle jack used under the casing clamp can free jammed casing and often by jacking just a few hundred millimetres the casing frees up. We recommend the hi-lift jacks used by 4WDers if this becomes a common problem. NEVER leave casing in overnight or for long periods without moving it.