Deep Water Sampler

accuracy and reliability where it matters most

features

- accurate and reliable determination of seabed soil properties
- designed for soft clay layers of the deep seabed
- recovery ratio >95%
- sample length up to 25 metres
- sample diameter 110 mm

Deep Water Sampler, accuracy and reliability where it matters most

the importance of accuracy and reliability

Soft clay layers of the seabed have long been difficult to investigate. They are easily disturbed and samples are hard to be brought to the surface. The increasing activities on the seabed however lead to an ever growing need for an accurate and reliable determination of the soil properties especially in those layers. After all: the more accurate the determination of the soil properties, the lower the risk and cost of structures to be laid down or erected, such as pipelines, oil platforms and suction anchors. This need is answered with the Deep Water Sampler (DWS).

new development

With their many years of expertise in offshore soil investigation and equipment, A.P. van den Berg, in cooperation with the Norwegian research institute NGI, succeeded in developing a soil sampler that enables to take high-quality samples from the seabed at great water depths. Especially the quality improvement for samples of soft clay layers is significant. The innovative qualities of the sampler are based on the following features:

- a new type of cutting shoe
- the core retainer
- a piston that seals off the upper side of the sampler from the surrounding pressure, thus minimizing the forces exerted on the sample
- positioning system that keeps the piston in its place within a mere couple of millimeters
- special connection mechanism of the sample tubes, enabling to separate the sample on the spot without damaging it.

results that count

Test results of laboratory research of samples taken with the DWS make it clear that the quality of the sample can be qualified as very good to excellent. Especially the quality of the sample in the weak top layer is considerably better than that of samples taken with existing samplers.

testing procedure

The DWS can be pushed into the soil by means of the ROSON seabed CPT unit (see also leaflets S14-S18). Sample tubes are connected to the total length of the sample to be taken and is installed in the ROSON's CPT tower. Then the total assembly is lowered to the seabed and the DWS is pushed into the soil by means of the ROSON drive wheels. Accurate depth measurement is ensured by the ROSON's depth encoder. Operations can be observed underwater by means of a camera. With the ROSON other tests can be performed, like piezocone tests, BAT sampling, vane tests etc.

Technical specifications			
Sample		Deep Water Sampler	
Length	up to 25 m	Length outer tube	1 m
Diameter	110 mm	OD outer tube	141 mm
Maximum water depth	2000 m	Length samle tube	1 m
		OD sample tube	114 mm








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