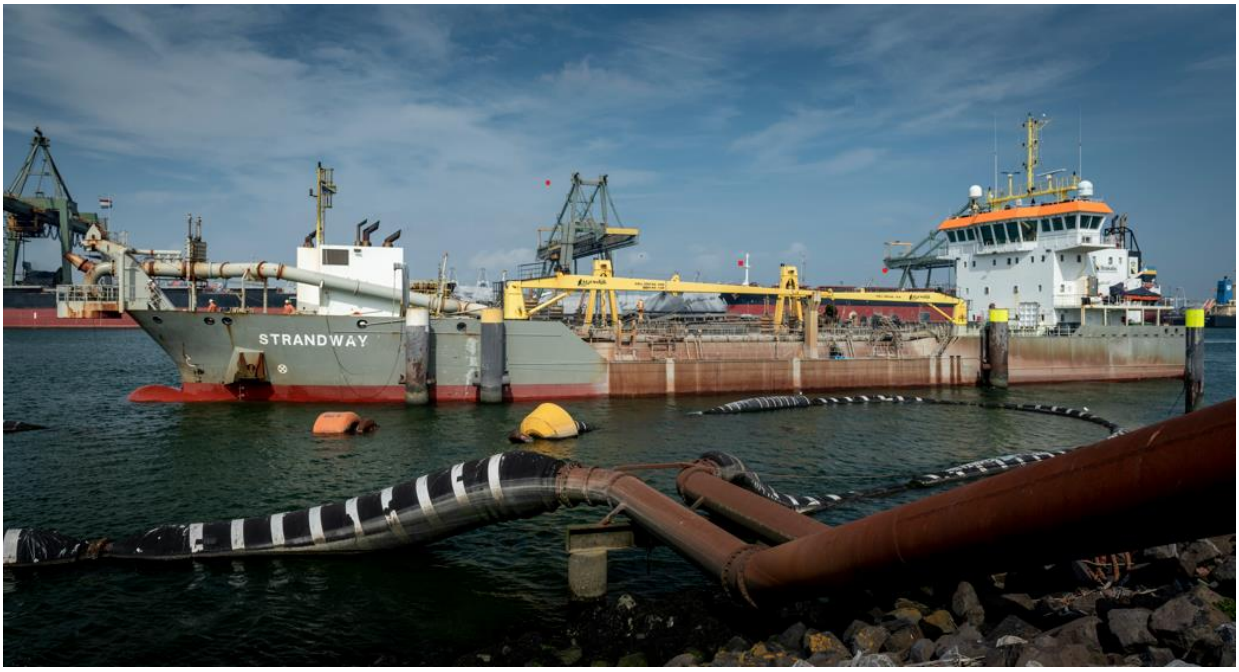
Boskalis
Beheer Slufter

# INSTRUCTION HALF-SPHERE METHOD

**Instruction measuring hopper load Slufter**



Boskalis
Beheer Slufter

## COLOPHON

Instructions for measuring the load of a TSHD using the half-sphere method.

This method is prescribed by Slufter Management Organization for deliveries to the Slufter.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## 1. THE SETTLED SEDIMENT

The measurement of the cleared quantities of bottom material settled in the hopper/barge shall be made by sounding the upper surface of the cargo in relation to a fixed datum.

The soundings shall be carried out by placing a semi-spherical sounding rod, the dimensions of which are to be described below, suspended from a plastified, graduated steel wire, on the dredged material; the upper surface of this sounding rod shall be deemed to correspond to the upper surface of the load in situ.

The sounding rod is one half of a sphere having a diameter of 17 cm, the circular flat side of which is at the top and which is attached with the center of the flat side to a plastified steel wire. The sounding sphere is constructed so that its weight when immersed in water is 1.5 kg.

By averaging the sounding conducted in the hopper (at locations to be determined), the solid portion of the load is calculated. The measure of capacity in $m^3$ determined in this way constitutes the offsettable quantity of this part of the load.

## 2. THE SEDIMENT IN SUSPENSION

The measurement of the water and grout mixture, which is above the settled grout in the hopper, is carried out using a number of representative samples of about 1 liter to be determined by the management.

By pre-shaking the samples, the samples are first returned to their original state. After this, the samples will be centrifuged in a centrifuge. After centrifugation, the volume percentage of precipitated sediment will be determined.

The amount of mixture of mortar and water in $m^3$, multiplied by said percentage, gives the settling quantity of this part of the load.

Use is made of a centrifuge type B.H.G.-900, which is set up at Boskalis Beheer Slufter at Luzonstraat 40, Maasvlakte-Rotterdam; the apparatus is brought to 1,500 revolutions per minute as quickly as possible, after which this speed is maintained for 9 minutes.

If a centrifuge of another type is used, the speed and rotation times will be determined experimentally in consultation between management and contractor so that comparable results are obtained.

The taking of soundings and samples will take place as soon as possible after completion of the dredging work.

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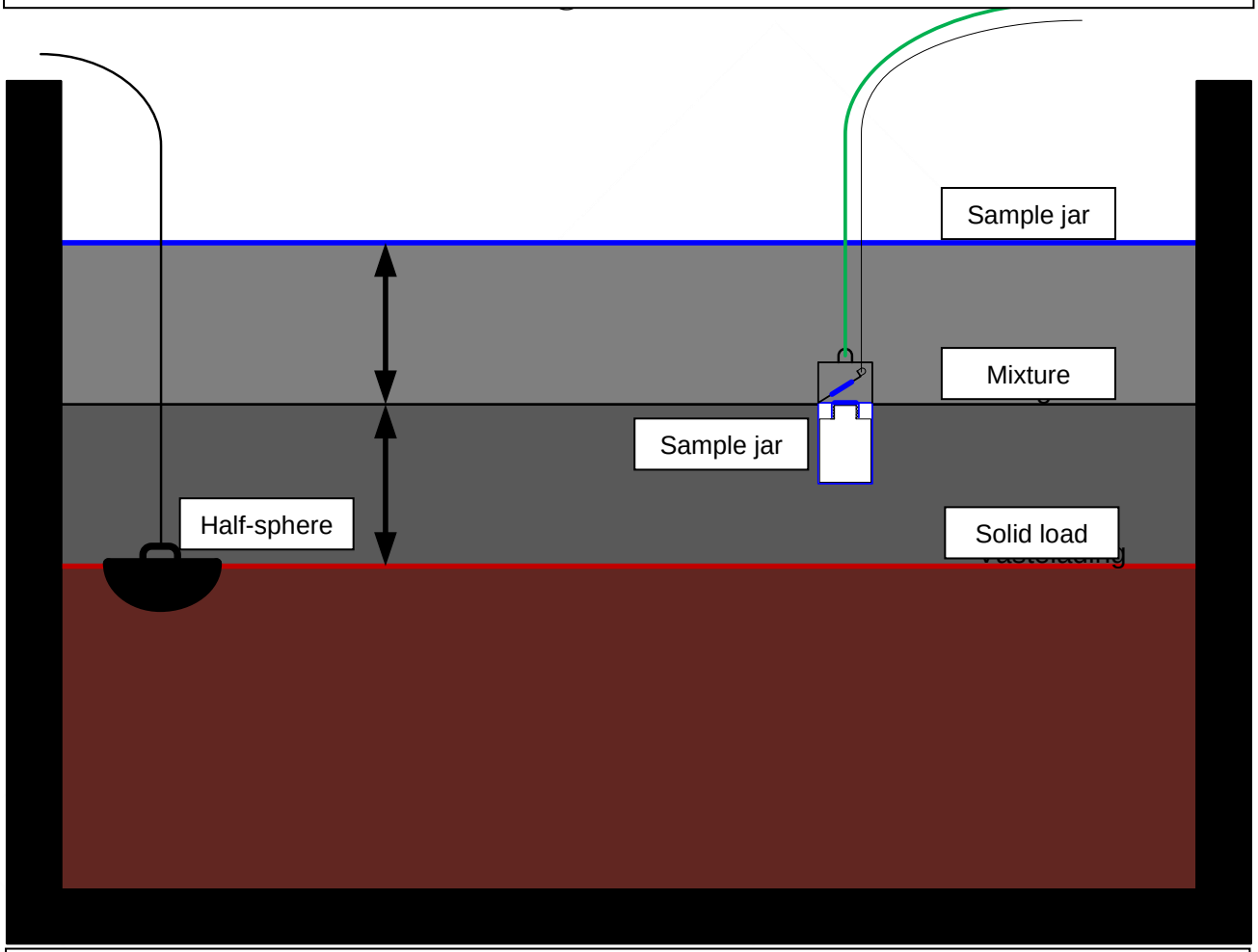
# Instruction half-sphere method




First you use the hemispherical sphere to determine the solid charge in the beun/hopper and the amount of water on top of the solid charge. Next, with the sample jar, you take a sample halfway into the mixture that is in suspension.