

Core cutter method RAW

User manual



The core cutter method (Dutch RAW-standard 2010, Test No. 6) is used to determine the density and moisture content of embankment or foundation materials (in situ method).

Procedure

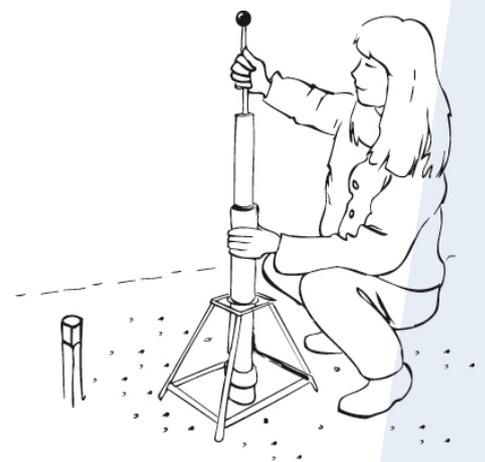
Excavate the area to the prescribed depth, so that the excavated area has a horizontal and flat bottom surface measuring at least 0.4 x 0.6 m. Place the appliance with the drop weight in the hole and fix the sample ring with the crib in the holder that is fixed to the lower side of the guide bush.

Set the guide bush vertically and allow the weight to fall as many times as is necessary until the edge of the holder is touching the bottom surface.

Remove the appliance from the hole and dig out the sample ring, by inserting the shovel about 0.02 m beneath the sample ring.

Skim off the lower side of the sample ring carefully with a sawing motion using the steel ruler. Make up for any loss of material at the lower side of the sample ring by applying a light pressure from your hand at the upper side of the sample ring by pressing the material to the lower side and skim off the excess material with the ruler.

Place the sample ring on the flat metal plate and remove the crib. Skim off the excess materials carefully by applying a sawing motion.



Meet the difference

Carefully brush off the exterior of the sample ring. Transfer the contents of the sample ring to a plastic bag. Use the brush to add the materials remaining in the sample ring to the contents of the plastic bag and close this so that it is airtight.

Make sure the volume of the in situ materials is equal to that inside volume of the sample ring ($V \text{ cm}^3$).

Mass and moisture content

Required materials:

Balance, accuracy of 0.1 gr (art. no.: 98.01.03). Drying oven, at $110 \pm 5 \text{ }^\circ\text{C}$.

Operation:

The materials that were excavated or removed with the sample ring ($c \text{ g}$) should then be weighed. Dry the materials at $110 \pm 5 \text{ }^\circ\text{C}$ to a constant mass and weigh again when cooled ($d \text{ g}$).

Carry out precision weighings with an accuracy of 0.1 gr.

Calculation:

Calculate the moisture content as $\frac{c-d}{d} \cdot 100\%$ with an accuracy of 0.1%

Density:

Make sure the volume of the materials in situ is equal to the inner volume ($V \text{ cm}^3$) of the sample ring. Determine the inner volume of the sample ring with an accuracy of 0.1 cm^3 .

Calculation:

With an accuracy of 1 kg/m^3 , calculate the density as $1000 \times \frac{d}{V} \cdot \text{kg/m}^3$.

N.B. The core cutter method is suitable only for materials that contain no stones.

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