



# Civil engineering soil test kit

- 1 = Carrying bag
- 2 = Hammering head
- 3 = Soil sample rings
- 4 = pH-indicator
- 5 = Sand ruler
- 6 = Pocket penetrometer
- 7 = Soil colour charts
- 8 = Edelman auger, bottom part
- 9 = Handle



## 08.19 Civil engineering soil test kit

Soil research is a very important aspect in the planning and execution of agricultural- as well as civil engineering projects and operations. In order to make the soil research as comprehensive as possible the following studies must be made with regards to:

- The build up of a soil; i.e. determining the composition, the thickness and the position of the various strata.
- The soil properties; measuring the permeability, the filtration capacity, the bearing capacity, etc.

The build up of a soil and strata is determined with the use of augers. The hand auger is generally used for not too deep bore holes. Hand augers are extremely useful for soil research. Investigating the properties of a soil either takes place in situ, or in the laboratory with the aid of soil samples. For this purpose undisturbed soil samples have to be taken.

The complete set consists of:

- An Edelman soil auger (combination type) suitable for various types of soil) to take soil samples and to study the soil profile. The standard diameter of the auger is 7 cm. The auger is supplied with a detachable handle provided with the quick and reliable bayonet coupling.
- For taking undisturbed soil samples for uniform soil, physical and soil mechanical laboratory research we supply a set of 5 stainless steel soil sample rings (with covers). The hammering head is used for filling the soil sample rings in hard soil layers both on the surface and in profile pits. After sampling the soil sample rings (with undisturbed soil sample) can simply dug out or extruded using a knife or small shovel. Then the sample is transported to the laboratory.
- The pocket penetrometer is specifically used to determine the penetration resistance of top layers (measuring depth 5 mm) and of samples in the field or in the laboratory. Measuring range 0.5 MPa. The pocket penetrometer is composed of a housing, a spring, a flat-tipped measuring pin, a slip ring and a scale. When pushing the instrument into the ground, the pin encounters a force of the ground. The spring is compressed by this force. A slip ring is taken along during this operation, which shows on the scale the maximum force that has been encountered. The scale has been calibrated in such a way that the penetration resistance that has been encountered can be read on it immediately.

**All it takes for environmental research**



- A soil colour chart for determination of a subgroup in the soil classification system based among other aspects on colour differences. The colour of the soil is determined by comparing the sample with standard soil colour charts.
- A sand ruler: a disc made of transparent material with standard (specimen) samples. It is an excellent indicative aid in determining the particle size distribution. Of the sample to be tested a representative part is rubbed dry with the fingers in the palm of the hand. The sample is then placed in the hollow area in the centre of the ruler. The average grain size is now judged by comparing the average grain size of the sample with the specimen in the ruler. The sand ruler is available with different fractions.
- The Hellige pH-indicator is a very simple apparatus to estimate the pH (acidity) of a soil for the purpose of a soil suitability indication and straight forward fertilizing advise. The pH is determined on the basis of colour comparison.

The complete civil engineering soil test kit is supplied with carrying bag.