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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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**Soil. Determination of dry matter and water content. Gravimetric
method**

(English Translation)

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Foreword

In order to implement the "Environmental Protection Law of the People's Republic of China", protect the environment, protect human health, and regulate the measurement of dry matter and moisture in soil.

Determine the method and formulate this standard.

This standard specifies the gravimetric method for determining dry matter and moisture in soil.

The technical content of this standard is to modify the soil mass dry matter and moisture content based on the mass determination method.

[ISO 11465:1993(E)]. Appendix A gives a comparison of the numbering of this standard chapter number with the ISO 11465:1993 (E) chapter number.

The table, Appendix B gives the technical differences between this standard and ISO 11465:1993 (E) and its causes.

This standard is the first release.

Appendix A and Appendix B of this standard are informative catalogues.

This standard was formulated by the Science and Technology Standards Department of the Ministry of Environmental Protection.

This standard is mainly drafted by. Jinzhou Environmental Monitoring Center Station.

This standard was approved by the Ministry of Environmental Protection on April 15, 2011.

This standard has been implemented since October 1, 2011.

This standard is explained by the Ministry of Environmental Protection.

Determination of dry matter and moisture in soils Warning. When measuring contaminated samples, avoid contact with the skin. During the test, ventilation, exhaust and other measures should be taken to prevent the laboratory environment.

Or other samples are contaminated.

1 Scope of application

This standard specifies the gravimetric method for determining dry matter and moisture in soil.

This standard applies to the determination of dry matter and moisture in all types of soil.

2 Normative references

The contents of this standard refer to the following documents or their terms. For undated references, the valid version applies to this standard.

quasi.

HJ 168 Technical Guidelines for Standardization and Revision of Environmental Monitoring and Analysis Methods HJ/T 166 Technical Specifications for Soil Environmental Monitoring ISO 11465 Soil quality-Determination of dry Matter and water content on a mass basis-Gravimetric method)

3 Terms and definitions

The following terms and definitions apply to this standard.

Dry matter content on a mass basis(wdm) Refers to the mass fraction of dry residue in the soil under the conditions specified in this standard.

Water content on a dry mass basis(wH₂O) Refers to the mass of water evaporating from the soil at 105 ° C as a percentage of the mass of dry matter.

Constant mass constant mass After the sample is dried, the cooled sample is continuously weighed twice at a drying interval of 4 h, and the difference between the front and the back does not exceed the final measurement.

The constant mass is 0.1%, and the weight at this time is constant weight.

Note 1: In general, most soils have a drying time of 16 to 24 hours, and a few special soil samples and large particle soil samples take longer.

4 Principle of the method

The soil sample is baked to constant weight at $(105 \pm 5) ^\circ\text{C}$, and the dry matter and moisture content are calculated by the difference of soil sample mass before and after drying.

The score is expressed.

5 Instruments and equipment

5.1

Air drying oven. $(105 \pm 5) ^\circ\text{C}$.

5.2

Dryer. Contains anhydrous color-changing silica gel.

5.3

Analytical balance. Accuracy is 0.01 g.

5.4

Covered container. waterproof material and does not absorb moisture. For drying air-dried soil, the volume should be 25 ~ 100 ml, used for drying fresh water the volume of wet soil should be at least 100 ml.

5.5

Sample spoon.

5.6

Sample sieve. 2 mm.

5.7

Common instruments and equipment used in general laboratories.

6.1 Sample collection and preservation

Soil samples were collected and stored in accordance with the relevant regulations of HJ/T 166.

6.2.1 Air dried soil sample

Take a proper amount of fresh soil sample on a clean enamel plate or glass plate to avoid direct sunlight and the ambient temperature does not exceed 40 °C.

It is naturally air-dried to remove impurities such as stones and branches and pass through a 2 mm sample sieve. Crush the >2 mm clods and pass through a 2 mm sample sieve and mix.

To be tested.

6.2.2 Fresh soil sample

Take a proper amount of fresh soil sample and sprinkle it on a clean, non-absorbent glass plate and mix thoroughly to remove stones larger than 2 mm in diameter.

Impurities such as branches, to be tested.

Note 2: Determination of trace organic contaminants in samples can not remove impurities such as stones and branches. Therefore, the determination of the dry matter content does not eliminate stones, branches, etc.

Impurities.

7.1 Determination of air-dried soil samples

The covered container and lid were dried at (105 ± 5) °C for 1 h, slightly cold, covered, and then placed in a desiccator for at least 45 min.

The mass m_0 of the container with lid was measured to the nearest 0.01 g. Transfer 10 to 15 g of air-dried soil sample (6.2.1) to the weighed sample with a sample spoon in a covered container, cover the container lid and measure the total mass m_1 to the nearest 0.01 g. Remove the container lid and combine the container with the air-dried soil sample.

Place in an oven and dry to constant weight at (105 ± 5) °C while drying the lid. Cover the container lid and place in a desiccator for at least 45 minutes.

Immediately after removal, the total mass m_2 of the covered container and the dried soil was determined to the nearest 0.01 g.

7.2 Determination of fresh soil samples

The covered container and lid were dried at (105 ± 5) °C for 1 h, slightly cold, covered, and then placed in a desiccator for at least 45 min.

The mass m_0 of the container with lid was measured to the nearest 0.01 g. Transfer 30 to 40 g of fresh soil sample (6.2.2) to the weighed sample with a sample spoon in a covered container, cover the container lid and measure the total mass m_1 to the nearest 0.01 g.