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Geotechnical investigation and testing - Laboratory testing of soil - Part 2: Determination of bulk density (ISO 17892-2:2014)

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ICS 13.080.20, 93.020

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 17892-2

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English Version

Geotechnical investigation and testing - Laboratory testing of soil - Part 2: Determination of bulk density (ISO 17892-2:2014)

Reconnaissance et essais géotechniques - Essais de laboratoire sur les sols - Partie 2: Détermination de la masse volumique (ISO 17892-2:2014)

Geotechnische Erkundung und Untersuchung - Prüfen von Bodenproben im Labor - Teil 2: Bestimmung der Dichte von feinkörnigem Boden (ISO 17892-2:2014)

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Foreword

This document (EN ISO 17892-2:2014) has been prepared by Technical Committee ISO/TC 182 "Geotechnics" in collaboration Technical Committee CEN/TC 341 “Geotechnical Investigation and Testing” the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2015, and conflicting national standards shall be withdrawn at the latest by June 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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Endorsement notice

The text of ISO 17892-2:2014 has been approved by CEN as EN ISO 17892-2:2014 without any modification.

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Introduction

This document covers areas in the international field of geotechnical engineering never previously standardised internationally. It is intended that this document presents broad good practice throughout the world and significant differences with national documents is not anticipated. It is based on international practice (see Reference [1]).

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Geotechnical investigation and testing — Laboratory testing of soil —

Part 2: Determination of bulk density

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1 Scope

This International Standard specifies three methods for the determination of the bulk density of soils, comprising:

a) linear measurement method;

b) immersion in fluid method;

c) fluid displacement method.

This International Standard is applicable to the laboratory determination of the bulk density of soil within the scope of geotechnical investigations.

The linear measurement method is suitable for the determination of the bulk density of a specimen of soil of regular shape, including specimens prepared for other tests. The specimens used are either rectangular prisms or cylinders with circular cross sections.

The immersion in fluid method covers the determination of the bulk density of a specimen of natural or compacted soil by measuring its mass in air and its apparent mass when suspended in fluid. The method may be used when lumps of material of suitable size can be obtained.

The fluid displacement method covers the determination of the bulk density of a specimen of soil by measuring its mass in air and the mass of fluid displaced by immersion. The method may be used when lumps of material of suitable size can be obtained.

If the immersion in fluid method or fluid displacement method is used, and if the fluid is likely to penetrate into the specimen (eg water) the specimen should be coated before testing to prevent fluid penetration.

The bulk density of a soil is useful in the determination of the *in situ* overburden stress as a function of depth.

If required, the dry density of a specimen may be calculated from the bulk density and the water content, if known.

NOTE This International Standard fulfils the requirements of the determination of the bulk density of soils for geotechnical investigation and testing in accordance with EN 1997–1 and EN 1997–2.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 17892-1, *Geotechnical investigation and testing — Laboratory testing of soil — Part 1: Determination of water content*

ISO 14688-1, *Geotechnical investigation and testing — Identification and classification of soil — Part 1: Identification and description*

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