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Geosynthetics — Index test procedure for the evaluation of mechanical damage under repeated loading — Damage caused by granular material (laboratory test method)

Géosynthétiques — Mode opératoire d'essai pour évaluer l'endommagement mécanique sous charge répétée — Endommagement causé par des matériaux granulaires (méthode d'essai en laboratoire)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 221, *Geosynthetics*.

This second edition cancels and replaces the first edition (ISO 10722:2007), which has been technically revised. The main changes compared to the previous edition are as follows:

— the document has been technically revised in 5.2 (size of test specimens), 7.1 (applied pressures), 7.4 (standard granular material, now allowing the use of other granular materials for the test), 8.1 (standard granular material), 8.2 (visual assessment of the damage), Clause 9 (results referred to the property in the reference test agreed upon by parties), Clause 10 (results referred to the property in the reference test agreed upon by parties);

— Annex A has been added;

— the normative references have been updated.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Geosynthetics — Index test procedure for the evaluation of mechanical damage under repeated loading — Damage caused by granular material (laboratory test method)

1 Scope

This document describes an index test procedure for simulating mechanical damage to geosynthetics, caused by granular material, under repeated loading. The damage is assessed visually and by the loss of tensile strength.

Other reference tests can be used to assess the damage caused by this test. The test method described is an index test procedure, using a standard granular material, and is not intended to be used for the derivation of a reduction factor for geosynthetic reinforcement.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9862, *Geosynthetics — Sampling and preparation of test specimens*

ISO 10319, *Geosynthetics — Wide-width tensile test*

EN 933-1, *Tests for geometrical properties of aggregates — Part 1: Determination of particle size distribution — Sieving method*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
reference test
test used to determine a particular property of the geosynthetic being damaged in this procedure

4 Principle

A geosynthetic specimen is placed between two layers of a standard granular material according to 7.4 and subjected to a period of dynamic loading. The geosynthetic specimen is then removed from the test apparatus, examined for any visual damage and subjected to a mechanical test, to measure the change in mechanical properties. The result is expressed as the change (in percent) of the reference property. The visual damage is also reported.

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