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Geosynthetics — Wide-width tensile test

Géosynthétiques — Essai de traction des bandes larges

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Contents

Page

Foreword

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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 document 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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This document was prepared by Technical Committee ISO/TC 221, *Geosynthetics*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 189, *Geosynthetics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 10319:2015), which has been technically revised.

The main changes are as follows:

— the term “load” changed to “force” in all instances;

— difference between strain and elongation clarified in Clause 3 and Figure 1 modified accordingly;

— difference between tensile strength at first and second peak clarified in Clause 3 and 9.2;

— illustration of suitable jaws and grips introduced in Figure 3;

— testing of metallic products limited to woven steel wire meshes in 6.4.6;

— testing products narrower than 200 mm introduced in 6.4.7;

— testing at lower or higher temperatures introduced, with the related conditioning in 7.3 and the related procedure added in Annex A;

— formulae for strain calculation introduced in 9.1;

— formulae for tensile strength of products narrower than 200 mm introduced in 9.2;

— test report requirements updated in Clause 10.

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.

Geosynthetics — Wide-width tensile test

1 Scope

This document specifies an index test method for the determination of the tensile properties of geosynthetics (polymeric, glass and metallic), using a wide-width strip. This document is applicable to most geosynthetics, including woven geotextiles, nonwoven geotextiles, geocomposites, knitted geotextiles, geonets, geomats and metallic products. It is also applicable to geogrids and similar open-structure geotextiles, but specimen dimensions will possibly need to be altered. It is not applicable to polymeric or bituminous geosynthetic barriers, but it is applicable to clay geosynthetic barriers.

This document specifies a tensile test method that covers the measurement of tensile force, elongation characteristics and includes procedures for the calculation of secant stiffness, maximum load per unit width and strain at maximum force. Singular points on the tensile force-extension curve are also indicated.

Procedures for measuring the tensile properties of both conditioned and wet specimens are included in this document.

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 554, *Standard atmospheres for conditioning and/or testing — Specifications*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

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

ISO 9863-1, *Geosynthetics — Determination of thickness at specified pressures — Part 1: Single layers*

ISO 10318-1, *Geosynthetics — Part 1: Terms and definitions*

ISO 10321, *Geosynthetics — Tensile test for joints/seams by wide-width strip method*

EN 10223-3, *Steel wire and wire products for fencing and netting — Part 3: Hexagonal steel wire mesh products for civil engineering purposes*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10318-1and the following apply.

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

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

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