TECHNICAL REPORT

ISO/TR 18228-1

First edition
2020-04

Design using geosynthetics —

Part 1: General

Conception utilisant des géosynthétiques —

Partie 1: Généralités

Reference number
ISO/TR 18228-1:2020(E)

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Published in Switzerland

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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 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*.

A list of all parts in the ISO/TR 18228 series can be found on the ISO website.

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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Introduction

The ISO/TR 18228 series provides guidance for designs using geosynthetics for soils and below ground structures in contact with natural soils, fills and asphalt. The series contains 10 parts which cover designs using geosynthetics, including guidance for characterization of the materials to be used and other factors affecting the design and performance of the systems which are particular to each part.

The series is generally written in a limit state format and guidelines are provided in terms of partial material factors and load factors for various applications and design lives, where appropriate.

For each of the design considerations, the characteristics of the geosynthetics and the test methods normally used to quantify the properties of the geosynthetics are described. Some regional specific rules and regulations that normally apply to designs using geosynthetics in these regions are also provided.

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Design using geosynthetics —

Part 1:
General

1 Scope

This document provides general considerations to support the guidance to geotechnical and civil engineers for design using geosynthetics provided in the subsequent parts of the ISO/TR 18228 series.

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

3 Terms, definitions and symbols

3.1 Terms and definitions

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

3.2 Symbols

For the purposes of this document, the symbols are taken from ISO 10318-2. Table 1, Table 2 and Table 3 provide lists of the lowercase, uppercase and Greek symbols that are typically used throughout the ISO/TR 18228 series. Additional useful symbols may be found in the relevant parts of the series.

Table 1 — Lowercase symbols

Symbol	Meaning
f	Partial factor (with subscripts as noted)
h	Hydraulic head
i	Hydraulic gradient
pH	Value of acidity of an aqueous solution
m	Mass of an element
q	Flow quantity (with subscripts as noted)
r_u	Pore pressure ratio
t	Thickness of a geosynthetic
t_d	Design life
t_t	Test duration

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