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Design using geosynthetics

Part 6: Protection

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National foreword

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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 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*, Working group WG 6, *Design using 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 characterisation of the materials to be used and other factors affecting the design and performance of the systems which are particular to each part, with ISO/TR 18228-1 providing general guidance relevant to the subsequent parts of the series.

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.

This document includes information relating to the use of geosynthetics in a protective function.

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TECHNICAL REPORT **ISO/TR 18228-6:2023(E)**

Design using geosynthetics —

Part 6: Protection

1 Scope

This document provides general considerations to support design guidance for the evaluation of geosynthetics to fulfil a protective function to any surface or material placed in contact with the protective element.

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*

ISO 10318-2, *Geosynthetics — Part 2: Symbols and pictograms*

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 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/

3.2 Symbols

For the purposes of this document, the symbols in ISO 10318-2 apply.

4 Concepts and fundamental principles

Geosynthetics for protection (protectors) are frequently incorporated with other geosynthetics and soil components in barrier systems. The objective of any barrier protector is to ensure that the stresses and strains encountered during the construction phase and operational life of a site pose no significant risk of damage to the barrier. The aim of the geosynthetic protection layer is to limit damage to the barrier caused by the drainage aggregate placed above the barrier (see Figure 1 and Figure 2). Designers would normally assess the potential for stresses and strains in the protector. This document covers the use of geosynthetics as a protection layer for barriers.

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