

---

---

**Geosynthetics — Installing and  
retrieving samples in the field for  
durability assessment**

*Géosynthétiques — Installation et prélèvement d'échantillons sur le  
terrain pour l'évaluation de la durabilité*

iTeh Standards  
(<https://standards.iteh.ai>)  
Document Preview

[ISO 13437:2019](https://standards.iteh.ai/catalog/standards/iso/62cf1aec-158c-48ed-8a07-e9ca5ed3a52b/iso-13437-2019)

<https://standards.iteh.ai/catalog/standards/iso/62cf1aec-158c-48ed-8a07-e9ca5ed3a52b/iso-13437-2019>



iTeh Standards  
(<https://standards.iteh.ai>)  
Document Preview

[ISO 13437:2019](https://standards.iteh.ai/catalog/standards/iso/62cf1aec-158c-48ed-8a07-e9ca5ed3a52b/iso-13437-2019)

<https://standards.iteh.ai/catalog/standards/iso/62cf1aec-158c-48ed-8a07-e9ca5ed3a52b/iso-13437-2019>



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Fax: +41 22 749 09 47  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

	Page
<b>Foreword</b> .....	<b>iv</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms and definitions</b> .....	<b>1</b>
<b>4 Principle</b> .....	<b>1</b>
<b>5 Test method</b> .....	<b>2</b>
5.1 Identification of the initial conditions.....	2
5.2 Durability testing samples.....	2
5.3 Preparation of control specimens.....	2
5.4 Retrieval of samples.....	3
5.5 Testing and analysis.....	4
5.5.1 Testing on retrieval samples.....	4
5.5.2 Testing on retrieval samples and control specimens.....	4
<b>6 General report</b> .....	<b>4</b>
<b>Annex A (informative) Identification forms for structure, environment and geosynthetic</b> .....	<b>5</b>
<b>Bibliography</b> .....	<b>8</b>

iTeh Standards  
(<https://standards.itih.ai>)  
Document Preview

[ISO 13437:2019](https://standards.itih.ai/catalog/standards/iso/62cf1aec-158c-48ed-8a07-e9ca5ed3a52b/iso-13437-2019)

<https://standards.itih.ai/catalog/standards/iso/62cf1aec-158c-48ed-8a07-e9ca5ed3a52b/iso-13437-2019>

## 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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](http://www.iso.org/iso/foreword.html).

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

This second edition cancels and replaces the first edition (ISO 13437:1998), which has been technically revised.

The main changes compared to the previous edition are as follows:

- The standard has been modified to cover all geosynthetics, rather than only geotextiles. The specific references to individual polymer types have been removed to make the standard cover all geosynthetic products.

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](http://www.iso.org/members.html).

# Geosynthetics — Installing and retrieving samples in the field for durability assessment

## 1 Scope

This document specifies a method for the on-site installation and retrieval of geosynthetic samples, irrespective of the particular degradation mechanisms to which they are exposed.

The method is also appropriate to test for mechanical damage, much of which occurs during installation, and to provide an owner with information about the state of the geosynthetic product in their structure.

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

## 3 Terms and definitions

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

#### **control specimen**

test specimen taken from the material delivered on site before its installation in the structure

### 3.2

#### **testing sample**

sample installed during construction for the purpose of installation damage or degradation assessment

### 3.3

#### **retrieval sample**

either *testing sample* (3.2) or sample of in-service materials retrieved after a predetermined time

## 4 Principle

The properties of the geosynthetic after a certain period in service (used material) are compared to the same properties determined on control specimens (control material). For determining installation damage, the sample can be retrieved immediately after installation.

## 5 Test method

### 5.1 Identification of the initial conditions

The following information shall be indicated:

- identification and description of the structure;
- description of the geosynthetic environment;
- identification and characteristics of the geosynthetics with testing standard references and number of samples and their dimensions.

NOTE For each of the above, examples of suitable form are given in [Annex A](#) where possible variation about the mean value can be given.

### 5.2 Durability testing samples

**5.2.1** The number of samples is determined by the dimensions of the structure, the physical and chemical variations in the environment in which the geosynthetic is installed and the repercussions that a failure of the geosynthetic function would cause.

**5.2.2** A certain number of samples can be retrieved at different stages. The number of retrievals depends on the expected service life of the geosynthetic. The following schedule shall be observed unless otherwise agreed:

- prepare durability testing samples and take control samples on delivery of material;
- make a first retrieval directly following construction;
- make a second retrieval after 10 years;
- then make a retrieval every 20 years or less if the results obtained command an earlier retrieval, or if major environmental factors are known to have changed;
- make a final retrieval on completion of service life.

Thus three retrievals are needed for a 30-year expected service life, and eight retrievals for a 120-year expected service life.

**5.2.3** The samples shall be subjected to the same physical and chemical environments as the ones to which the geosynthetic is exposed in the structure. As far as possible, this also includes mechanical stresses and hydraulic features.

**5.2.4** The dimensions of the durability testing samples shall be in accordance with the tests which will be conducted on the samples.

**5.2.5** Report the following:

- description, origin and numbering of the samples;
- date of installation and exact location in the structure (drawing);
- retrieval schedule.

### 5.3 Preparation of control specimens

Take control specimens of the geosynthetic from the material before installation. The control specimens shall be taken as close as possible to the material used for the durability testing samples.