



# SLOVENSKI STANDARD SIST EN ISO 9863-2:1999

01-marec-1999

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**Geotekstilje in geotekstilijam sorodni izdelki - Ugotavljanje debeline pri predpisanih tlakih - 2. del: Postopek ugotavljanja debeline posameznih plasti v večplastnih izdelkih (ISO 9863-2:1996)**

Geotextiles and geotextile-related products - Determination of thickness at specified pressures - Part 2: Procedure for determination of thickness of single layers of multilayer products (ISO 9863-2:1996)

Geotextilien und geotextilverwandte Produkte - Bestimmung der Dicke unter festgelegten Drücken - Teil 2: Verfahren zur Bestimmung der Dicke der Einzellagen von mehrlagigen Produkten (ISO 9863-2:1996)

Géotextiles et produits apparentés - Détermination de l'épaisseur a des pressions prescrites - Partie 2: Méthode de détermination de l'épaisseur des couches individuelles de produits multi-couches (ISO 9863-2:1996)

**Ta slovenski standard je istoveten z: EN ISO 9863-2:1996**

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**ICS:**

59.080.70      Geotekstilije      Geotextiles

**SIST EN ISO 9863-2:1999**      en

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EUROPEAN STANDARD

EN ISO 9863-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 1996

ICS 59.080.70

Descriptors: textiles, filter fabrics, tests, thickness measurements, test pressure

English version

**Geotextiles and geotextile-related products -  
Determination of thickness at specified pressures -  
Part 2: Procedure for determination of thickness  
of single layers of multilayer products  
(ISO 9863-2:1996)**

Géotextiles et produits apparentés  
Détermination de l'épaisseur à des pressions  
prescrites - Partie 2: Méthode de détermination  
de l'épaisseur des couches individuelles de  
produits multi-couches (ISO 9863-2:1996)

Geotextilien und geotextilverwandte Produkte -  
Bestimmung der Dicke unter festgelegten Drücken  
- Teil 2: Verfahren zur Bestimmung der Dicke  
der Einzellagen von mehrlagigen Produkten  
(ISO 9863-2:1996)

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This European Standard was approved by CEN on 1996-02-19. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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## CEN

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

## 1 Scope

This part of EN ISO 9863 specifies a method for determination of the thickness of single layers of multilayer products at specified pressures.

## 2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 963	Geotextiles and geotextile-related products - Sampling and preparation of test specimens
EN 964-1	Geotextiles and geotextile-related products - Determination of thickness at specified pressures - Part 1: Single layers
EN 30320	Geotextiles - Identification on site (ISO 10320:1991)
ISO 554	Standard atmospheres for conditioning and/or testing - Specifications

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## 3 Principle

The thickness of the individual layers of a specimen is measured under a specified pressure without the layers being mechanically separated. This requires prior determination of the mean value of the total thickness of the multilayer product at the desired pressure in accordance with EN 964-1.

## 4 Apparatus

4.1 The apparatus (see figure 1) shall satisfy the following conditions:

- The apparatus shall consist of a frame with a fixed, flat lower plate and a movable flat upper plate of the same size.
- The lower and upper plates shall be rectangular.
- The upper plate shall be capable of being fixed at any position of its travel.
- Lower and upper plates shall be so rigid that they do not deflect by more than 0,1 mm, measured over an area equivalent to that of the specimen, under the desired pressure.
- Four smooth intermediate identical plates are required of minimum 1,0 mm thickness. They shall be sufficiently rigid not to deflect during the tests and their area and shape shall be the same as those of the specimens.

6.4 Represent the boundaries between the individual layers of each specimen by median lines perpendicular to the gauge lines and which extend at least 10 mm on both sides of the gauge lines (see figure 2).

NOTE: This procedure can be simplified by photocopying the aligned face of the sample pile using a magnifying copier, or by optical measurement of the layer boundaries using cross hairs. The magnification accuracy should previously be checked, e.g. by copying a sheet of graph paper, calibrated in mm. For individual layer thickness of  $\leq 1$  mm optical measurement should be used.

At pressures  $\leq 20$  kPa the apparatus is rotated by  $90^\circ$  after stacking of the samples (specimens vertical) to avoid a deformation of the lower layers by the weight of the upper layers and separator plates.

6.5 The intersection of the median line and the gauge line defines the individual layer boundary.

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## 7 Calculation and expression of results

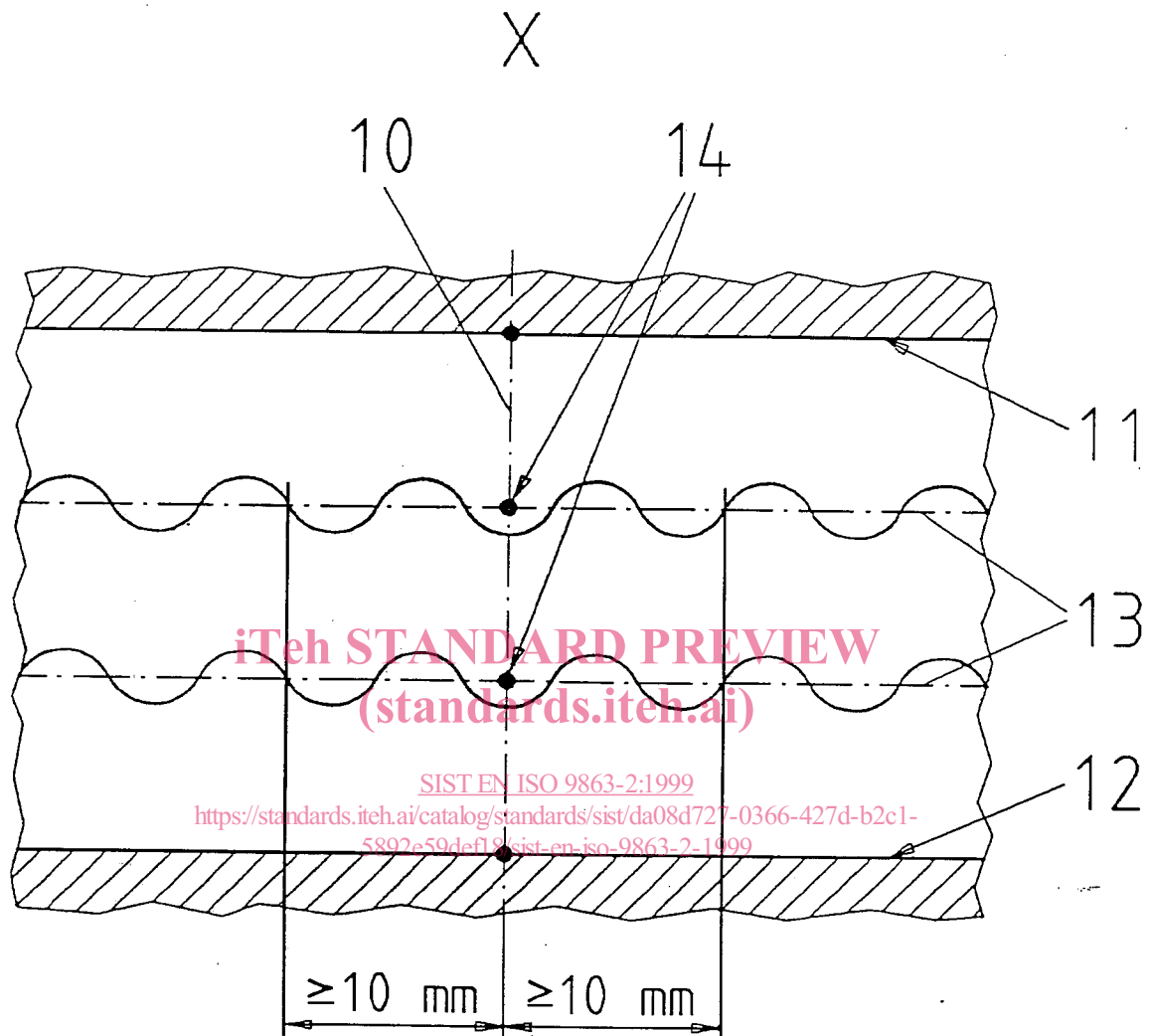
The individual layer thickness is the difference between two measuring points on a gauge line. Using the layer thicknesses thus determined for the five specimens, calculate the mean and standard deviation for each individual layer.

NOTE: The sum of the mean values of the individual layers is equal to the mean total thickness.

## 8 Test report

The test report shall include the following information:

- a) the number and date of this European Standard;
- b) the standard atmosphere used;
- c) a description of the geotextile tested in accordance with the standard of identification (see EN 30320);
- d) thickness of the specimens and their individual layers;
- e) details of apparatus used including specimen dimensions;
- f) the pressure used;
- g) any deviation from the standard.



**Figure 2: Example showing a gauge line, median lines, and measuring points (detail X from figure 1)**

- 10 gauge line
- 11 lower face of separator plate
- 12 upper face of separator plate
- 13 median lines
- 14 measuring points

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# INTERNATIONAL STANDARD

**ISO**  
**9863-2**

First edition  
1996-08-15

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## **Geotextiles and geotextile-related products — Determination of thickness at specified pressures —**

### **Part 2:**

**Procedure for determination of thickness of  
single layers of multilayer products**

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*Géotextiles et produits apparentés — Détermination de l'épaisseur à des  
pressions prescrites —*

*Partie 2: Méthode de détermination de l'épaisseur des couches individuelles  
de produits multi-couches*



Reference number  
ISO 9863-2:1996(E)



## ISO 9863-2:1996(E)

## 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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International Standard ISO 9863-2 was prepared by the European Committee for Standardization (CEN) in collaboration with ISO Technical Committee TC 38, *Textiles*, Subcommittee SC 21, *Geotextiles*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement). <https://standards.iteh.ai/catalog/standards/sist/da08d727-0366-427d-b2c1-5892e59def18/sist-en-iso-9863-2-1999>

Together with the other parts of ISO 9863, ISO 9863-2 cancels and replaces ISO 9863:1990, which has been technically revised.

ISO 9863 consists of the following parts, under the general title *Geotextiles and geotextile-related products — Determination of thickness at specified pressures*:

- *Part 2: Procedure for determination of thickness of single layers of multilayer products*

Annexes A and ZZ of this part of ISO 9863 are for information only.

Annex ZZ provides a list of corresponding International and European Standards for which equivalents are not given in the text.

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International Organization for Standardization  
Case postale 56 • CH-1211 Genève 20 • Switzerland  
Internet central@isocs.iso.ch  
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

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