

**Leather - Determination of water resistance of flexible leather - Part 1: Repeated linear compression (penetrometer) (ISO 5403-1:2011)**

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## NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 5403-1:2011 sisaldab Euroopa standardi EN ISO 5403-1:2011 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 5403-1:2011 consists of the English text of the European standard EN ISO 5403-1:2011.
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ICS 59.140.30, 61.060

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EUROPEAN STANDARD

**EN ISO 5403-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 61.060; 59.140.30

Supersedes EN ISO 5403:2002

English Version

**Leather - Determination of water resistance of flexible leather -  
Part 1: Repeated linear compression (penetrometer) (ISO 5403-  
1:2011)**

Cuir - Détermination de l'imperméabilité à l'eau des cuirs  
souples - Partie 1: Compression linéaire répétée  
(pénétrömètre) (ISO 5403-1:2011)

Leder - Bestimmung der Wasserbeständigkeit von  
flexiblem Leder - Teil 1: Penetrometerverfahren (ISO 5403-  
1:2011)

This European Standard was approved by CEN on 14 December 2011.

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COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This document (EN ISO 5403-1:2011) has been prepared by Technical Committee CEN/TC 289 "Leather", the secretariat of which is held by UNI, in collaboration with the International Union of Leather Technologists and Chemists Societies.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2012, and conflicting national standards shall be withdrawn at the latest by June 2012.

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# Leather — Determination of water resistance of flexible leather —

## Part 1: Repeated linear compression (penetrometer)

### 1 Scope

This part of ISO 5403 specifies a method for determining the dynamic water resistance of leather by means of repeated linear compression. It is applicable to all flexible leathers but is particularly suitable for leathers intended for footwear applications.

### 2 Normative references

The following referenced documents are indispensable for the application 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 2418, *Leather — Chemical, physical and mechanical and fastness tests — Sampling location*

ISO 2419, *Leather — Physical and mechanical tests — Sample preparation and conditioning*

ISO 3696:1987, *Water for analytical laboratory use — Specification and test methods*

### 3 Principle

A test piece is formed into the shape of a trough and flexed while partially immersed in water. The time taken for water to penetrate through the test piece is measured. The method also allows for the percentage mass of the water absorbed and the mass of the water transmitted through the test piece to be determined.

NOTE This test method uses compression-type flexing, whereas the test method of ISO 5403-2 for water resistance imparts folding-type flexing on the leather specimens. Given the two completely different flexing actions, it is not possible to compare the results obtained from the two test methods.

### 4 Apparatus, reagents and materials

Usual laboratory apparatus is required and, in particular, the following.

**4.1 Test machine**, including the parts described in 4.1.1 to 4.1.3. (See also Annex A.)

**4.1.1 One or more pairs of cylinders**, 30,0 mm ± 0,5 mm in diameter, made of inert rigid material, mounted with their axes horizontal and co-axial. One cylinder shall be fixed and the other moveable along the direction of its axis such that the maximum separation of the cylinders is 40,0 mm ± 0,5 mm.