
Tekstilije - Ugotavljanje vodoneprepustnosti - Hidrostatsko tlačni preskus

Textiles - Determination of resistance to water penetration - Hydrostatic pressure test

Textilien - Bestimmung des Widerstandes gegen das Durchdringen von Wasser -
Hydrostatischer Druckversuch

Etoffes - Détermination de la résistance à la pénétration de l'eau - Essai sous pression
hydrostatique

Ta slovenski standard je istoveten z: EN 20811:1992

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ICS:

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Textile fabrics

SIST EN 20811:1996**en**

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EUROPEAN STANDARD

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Descriptors: Textiles, fabrics, tests, water resistance tests, fluid-tightness tests, hydrostatic pressure, pressure measurement

English version

**Textiles - Determination of resistance to water
penetration - Hydrostatic pressure test**

Etoffes - Détermination de la résistance à la
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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.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

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

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

Foreword

This European Standard has been taken over by CEN/TC 248 "Textiles and textile products" from the work of ISO/TC 38 "Textiles" of the International Organization for Standardization (ISO).

The document was submitted to the CEN members to the Unique Acceptance Procedure and was approved without any modification.

National standards identical to this European Standard shall be published at the latest by 1992-12-31 and conflicting national standards shall be withdrawn at the latest by 1992-12-31.

Following the CEN/CENELEC Common Rules, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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Endorsement notice

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The content of this European Standard is identical with that of the International Standard ISO 811 "Textile fabrics - Determination of resistance to water penetration - Hydrostatic pressure test" published in 1981.

SIST EN 20811:1996
https://standards.iteh.ai/catalog/standards/sist/en-811-1981/4ee5-aed1-d333a2494b5e/sist-en-20811-1996

International Standard



811

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Textile fabrics — Determination of resistance to water penetration — Hydrostatic pressure test*Étoffes — Détermination de la résistance à la pénétration de l'eau — Essai sous pression hydrostatique*

First edition — 1981-10-01

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UDC 677.064 : 677.017.63

Ref. No. ISO 811-1981 (E)

Descriptors : textiles, tests, water resistance tests.

Price based on 3 pages

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 811 was developed by Technical Committee ISO/TC 38, *Textiles*, and was circulated to the member bodies in October 1979.

It has been approved by the member bodies of the following countries :

Australia	Hungary	Portugal
Belgium	India	Romania
Brazil	Indonesia	South Africa, Rep. of
Canada	Italy	Spain
China	Japan	Sweden
Cyprus	Korea, Rep. of	Switzerland
Czechoslovakia	Libyan Arab Jamahiriya	Thailand
Denmark	Mexico	Turkey
Egypt, Arab Rep. of	Netherlands	United Kingdom
Finland	New Zealand	USA
Germany, F.R.	Norway	USSR
Ghana	Poland	

The member body of the following country expressed disapproval of the document on technical grounds :

France

This International Standard cancels and replaces ISO Recommendation R 811-1968, of which it constitutes a technical revision.

Textile fabrics — Determination of resistance to water penetration — Hydrostatic pressure test

1 Scope and field of application

This International Standard specifies a hydrostatic pressure method for determining the resistance of fabrics to penetration by water. The method is primarily intended for dense fabrics, e.g. ducks, tarpaulins and tentings.

2 Reference

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*.

3 Principle

The hydrostatic head supported by a fabric is a measure of the opposition to the passage of water through the fabric. A specimen is subjected to a steadily increasing pressure of water on one face, under standard conditions, until penetration occurs in three places. The pressure at which the water penetrates the fabric at the third place is noted. The water pressure may be applied from below or from above the test specimen. The chosen alternative should be stated in the test report.

The result is immediately relevant to the behaviour of fabric articles which are subjected to water pressure for short or moderate periods of time.

4 Apparatus

4.1 The apparatus used for the test should be designed to comply with the following conditions.

4.1.1 It should be possible to clamp the specimen of fabric in such a way that

- a) it is horizontal and is not bulging;
- b) an area of the fabric of 100 cm² * is subjected to steadily increasing water pressure from below or from above the fabric;
- c) no leakage of water takes place at the clamps during the test period (see annex, clause A.1);
- d) the specimen does not slip in the clamps;
- e) any tendency for penetration to occur at the clamped edge of the specimen is minimised (see annex, clause A.1).

4.1.2 The water in contact with the test specimen should be distilled or fully deionized water maintained at either 20 ± 2 °C or 27 ± 2 °C. The chosen alternative shall be stated in the test report. (The use of water at the higher temperature will yield lower values of hydrostatic head; the magnitude of this effect may vary from fabric to fabric.)

4.1.3 The rate of increase of water pressure shall be $10 \pm 0,5$ cm or 60 ± 3 cmH₂O/min**. Results obtained by the two different rates may not be the same. The chosen alternative shall be stated in the test report.

4.1.4 A manometer connected to the testing head(s) should allow pressures to be read to an accuracy of 0,5 cmH₂O (see annex, clause A.2).

* Equipment which necessitates the use of smaller specimens, such as a circular area of 20 cm², or of square specimens is still in use in some countries. Although these are not strictly in compliance with this International Standard, they may be used for the time being and any variation from a circular specimen of area 100 cm² should be stated in the test report. This is an interim measure and it is intended that this provision be deleted when the standard is reviewed 5 years after publication.

** This relates to pressure in millibars.

1 cmH₂O \approx 1 mbar

and 1 cmH₂O = 98,066 5 Pa (exactly) (1 mbar = 100 Pa).

However, the actual measurement made is in conventional centimetres head of water per minute.

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5 Conditioning

Conditioning and testing shall be carried out according to ISO 139. If so agreed, conditioning and testing may be carried out in the ambient temperature.

6 Test specimens

After receipt, handle the fabric as little as possible, avoid folding it sharply and do not treat it in any way (e.g. by ironing it) other than by conditioning. Take at least five test specimens from different places in the fabric so that they represent the material as fully as possible. The fabric may be tested without cutting specimens.

Areas with deep creases or fold marks shall not be tested.

7 Test procedure

Provide freshly distilled water for each specimen tested (see annex, clause A.3).

Wipe all water from the clamping surfaces. Clamp the conditioned specimen in the test head so that the face of the fabric will be in contact with the water. The clamping shall be carried out in such a way that water will not be forced through the specimen prior to the start of the test. Subject the specimen immediately to increasing water pressure. Watch continuously for evidence of penetration by water.

Record the pressure, as conventional centimetres of water, at which water first appears at the third place in the specimen. The accuracy for recording the pressure shall be the following :

- until 1 mH₂O : 0,5 cm
- more than 1 mH₂O and until 2 mH₂O : 1 cm
- more than 2 mH₂O : 2 cm

Do not take into account very fine droplets which do not grow after being formed. Do not count subsequent drops which penetrate through the same place in the fabric. Note whether the penetration of water at the third place occurs at the edge of the clamp and reject as unsatisfactory any test in which such penetration occurs at a pressure less than the lowest pressure recorded for the other specimens from the same sample. Test further specimens until the requisite number of satisfactory results is obtained.

8 Calculation and expression of results

Calculate the mean of the pressures recorded for the specimens tested according to clause 7. Report the individual results and the mean result in conventional centimetres of water.

9 Test report

The test report shall include the following information :

- a) reference to this International Standard;
- b) the atmosphere used (standard temperate or standard tropical or other atmosphere);
- c) the temperature of the water (20 or 27 °C or other temperature);
- d) whether the water pressure was applied from below or from above the test specimen;
- e) the rate of increase of water pressure, (10 or 60 cmH₂O/min);
- f) which side of the fabric was tested;
- g) any variation in size or shape of the test specimen;
- h) the individual results and their mean.