



SLOVENSKI STANDARD
SIST EN 12132-2:2000

01-december-2000

Feather and down - Methods of testing the down proof properties of fabrics - Part 2: Impact test

Feather and down - Methods of testing the down proof properties of fabrics - Part 2:
Impact test

Federn und Daunen - Verfahren für die Prüfung der Daunendichtigkeit von Geweben -
Teil 2: Stoßprüfung

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Plumes et duvets - Méthodes d'essai des tissus pour l'étanchéité aux plumes et duvets -
Partie 2: Essai par impact

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Ta slovenski standard je istoveten z: EN 12132-2:1998

ICS:

59.040 Pomožni materiali za tekstilije Textile auxiliary materials

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en

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EUROPEAN STANDARD

EN 12132-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 1998

ICS 59.040

Descriptors: stuffings, feathers, woven fabrics, tests, leak tests, impact tests, test conditions, procedure

English version

Feather and down - Methods of testing the down proof properties of fabrics - Part 2: Impact test

Plumes et duvets - Méthodes d'essai des tissus pour l'étanchéité aux plumes et duvets - Partie 2: Essai par impact

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This European Standard was approved by CEN on 24 July 1998.

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.

This European Standard exists 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.

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

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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 prepared by Technical Committee CEN/TC 222 " Feather and down as filling material for any article, as well as finished articles filled with feather and down", the secretariat of which is held by UNI.

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 February 1999, and conflicting national standards shall be withdrawn at the latest by February 1999.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.



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1 Scope

This standard describes a method for the determination of down and feather penetration through the primary tick fabric of a specimen containing feather and/or down filling using an impact apparatus.

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 20139 Textiles - Standard atmospheres for conditioning and testing (ISO 139 : 1973)

EN 20187 Paper, board and pulps - Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples (ISO 187 : 1990)

3 Principle

A cylindrical cushion is made from the fabric to be tested for its downproof properties and filled with a given amount of feather and down material or its mixtures. Sliding on an inclined plane, this cushion is moved by means of a pinned bar against a pinned plate and thus compressed. After the impact, the cushion is rolled back following the back moving pinned impact rake and recovers its shape. This procedure is continuously repeated until a certain number of impacts is reached.

As the stroke of the pinned plate is larger or smaller than the circumference of the cushion, the cushion will be compressed in different places.

The number of down and/or feather particles which have passed or protruded from the primary tick fabric is counted.

4 Apparatus

4.1 Impact apparatus

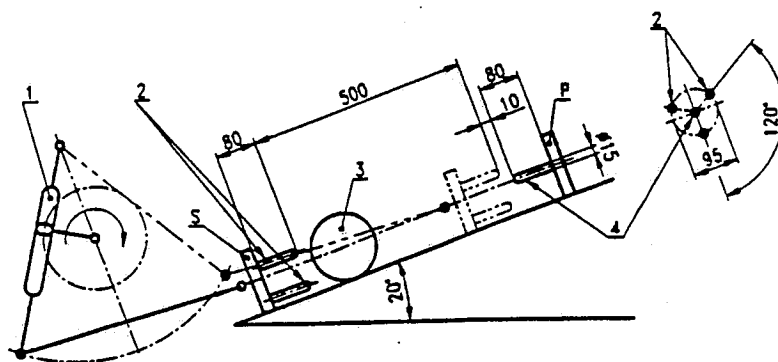
The testing apparatus (see figure 1) consists of an inclined plane with an angle of inclination of 20° , used as a sliding face for the cushion and two perpendicular positioned pinned plates. The lower plate, the impact rake S, is arranged movable and can be moved back and forth by means of an eccentric drive. On this movable plate 3 pins are firmly mounted with a distance of 95 mm and offset to each other with an angle of 120° . The pins have the following dimensions: 80 mm long, 15 mm in diameter with rounded front edges.

The upper perpendicular pinned plate is firmly mounted and is used as the impact plate P. This plate has only one pin with the same dimensions as above, which is aiming at the centre between the three pins of the movable plate.

The drive of the impact rake shall be designed so, that the impact movement is twice the speed of that of the back movement (crank-rocker-mechanism). The impact frequency shall be 35 impacts/min.

The stroke of the pinned impact rake S shall be designed so, that the distance between the pins of S and P is equal to or larger than 10 mm. The stroke shall be (500 ± 5) mm.

Dimensions in mm



- 1 Crank-rocker-mechanism
- 2 Three movable pins
- 3 Cushion
- 4 Firmly mounted pin

Figure 1: Impact test apparatus

4.2 Balance

The balance shall be accurate to within 0,1 g.

5 Atmospheres for conditioning and testing

Conditioning of test specimen and testing is carried out in an atmosphere according to EN 20139 and the temperature and relative humidity are measured according to EN 20187.

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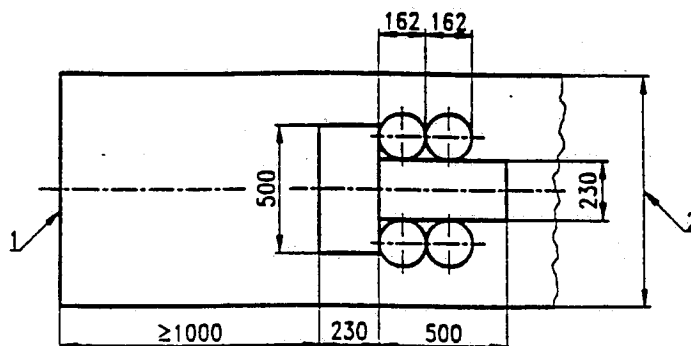
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6 Preparation of test cushions

At least two test specimens are taken from the fabric each measuring 750 mm × the whole width of fabric. One specimen is taken with its larger side in the warp direction and one in weft direction. From these specimens two test cylindrical cushions shall be prepared.

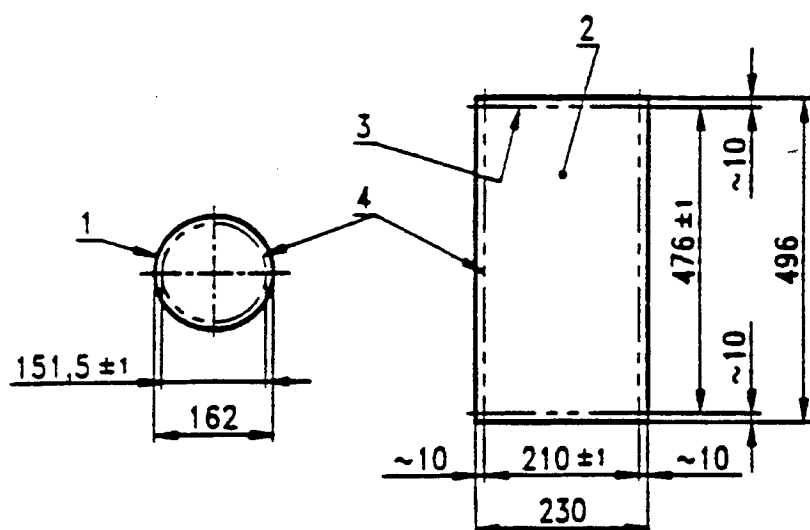
The surface area is $(210 \times 476) \text{ mm}^2$. The cushion shall have a diameter of appr. $(151,5 \pm 1) \text{ mm}$. The resulting effective cylindrical surface of the test cushion is $1\,000 \text{ cm}^2$ (see figures 2, 3 and 4).

Dimensions in mm



- 1 Beginning or end of fabric
- 2 Fabric width

Figure 2: Fabric sampling



- 1 Two round pieces
- 2 Surface area
- 3 Length seam
- 4 Bottom seam

Figure 3: Fabric size and cut

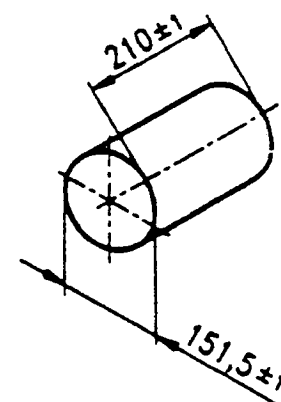


Figure 4: Cushion size

Fill the test specimen with the required mass of filling based on composition according to table 1.

Table 1: Filling of the test cushion
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Down content %	Feather content %	Mass of filling g
above 70	below 30	80 ± 1
30 to 70	70 to 30	110 ± 1
below 30	above 70	130 ± 1

7 Procedure

A different impact wear is applied for testing the downproof properties:

for plain 1/1 fabrics	2 000 impacts
for twill fabrics	4 000 impacts
for satin 4/1 fabrics	1 500 impacts (for quilts).

After each 500 impacts the number of feathers and downs passed or protruded to the surface of the cushion cover are visually counted. Filling material which passed or protruded from the circular ends or the seams is not taken into account. For the assessment of fabrics for their downproof properties the total number of passed or protruded and fallen feathers and down at the end of the test is taken as a basis.

8 Test report

The test report shall indicate the following particulars:

- Reference to this European Standard;
- Type of apparatus;
- Description and designation of the tested fabric;
- Description of the filling material and mass;
- Impact wear;

- Number of particles passed or protruded from the fabric:
 - a) Cushion prepared with the surface area in warp direction;
 - b) Cushion prepared with the surface area in weft direction;

- Any deviation from this European Standard and any incident likely to have affected the results.

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