



SLOVENSKI STANDARD
kSIST FprEN ISO 17698:2016
01-marec-2016

**Obutev - Preskusne metode za zgornje dele - Odpornost proti razslojevanju
(ISO/FDIS 17698:2016)**

Footwear - Test methods for uppers - Delamination resistance (ISO/FDIS 17698:2016)

Schuhe - Prüfverfahren für Obermaterialien - Beständigkeit gegen Schichtentrennung
(ISO/FDIS 17698:2016)

Chaussures - Méthodes d'essai des tiges - Résistance au délaminage (ISO/FDIS
17698:2016)

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Footwear — Test methods for uppers — Delamination resistance

Chaussures — Méthodes d'essai des tiges — Résistance au délaminage

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Please see the administrative notes on page iii



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ISO/CEN PARALLEL PROCESSING

This final draft has been developed within the European Committee for Standardization (CEN), and processed under the **CEN-lead** mode of collaboration as defined in the Vienna Agreement. The final draft was established on the basis of comments received during a parallel enquiry on the draft.

This final draft is hereby submitted to the ISO member bodies and to the CEN member bodies for a parallel two-month approval vote in ISO and two month formal vote in CEN.

Positive votes shall not be accompanied by comments.

Negative votes shall be accompanied by the relevant technical reasons.



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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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ISO/FDIS 17698:2015(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.

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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

ISO 17698 was prepared by the European Committee Standardization (CEN) Technical Committee CEN/TC 309, *Footwear*, in collaboration with ISO Technical Committee TC 216, *Footwear*, in accordance with the agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 17698:2003), which has been technically revised.

This International Standard is based on the IULTCS/IUF 470 Method.

Footwear — Test methods for uppers — Delamination resistance

1 Scope

This International Standard specifies a test method for determining the delamination resistance of uppers made from coated material, in order to assess the suitability for the end use.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 7500-1¹⁾, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

ISO 17709²⁾, *Footwear — Sampling location, preparation and duration of conditioning of samples and test pieces*

ISO 18454³⁾, *Footwear — Standard atmospheres for conditioning and testing of footwear and components for footwear*

ISO 20870⁴⁾, *Footwear — Ageing conditioning*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

delamination resistance

strength of adhesion between a coating and its base material

4 Apparatus and material

The following apparatus and material shall be used.

4.1 Tensile testing machine, with a jaw separation rate of (100 ± 10) mm/min, a force range appropriate to the specimen under test (normally a range of 0 N to 200 N is suitable for test specimens of polyurethane coated fabric) and the capability of measuring the force to an accuracy greater than 2 % as specified by ISO 7500-1, class 2.

4.2 Autographic recorder, or similar means of continuously recording the force.

1) To be published.

2) ISO 17709 is equivalent to EN 13400.

3) ISO 18454 is equivalent to EN 12222.

4) ISO 20870 is equivalent to EN 12749.

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4.3 Rapid acting platen press, capable of applying a pressure of (550 ± 50) kPa on an area of $50 \text{ mm} \times 70 \text{ mm}$.

4.4 Rubber pad, of thickness at least 10 mm and hardness (40 ± 10) IRHD.

4.5 Radiant heater, capable of heating a dry adhesive film on resin rubber to $80 \text{ }^\circ\text{C}$ to $90 \text{ }^\circ\text{C}$ within 15 s, normally mounting the adhesive film from 100 mm to 150 mm from a heater element of power approximately 3 kW and area of approximately $0,06 \text{ m}^2$ is satisfactory. Commercial equipment used for reactivating soles and uppers in footwear production is suitable.

4.6 Means of checking that the temperature of the adhesive film is within the range $80 \text{ }^\circ\text{C}$ to $90 \text{ }^\circ\text{C}$. Heat sensitive crayons are suitable, preferably with a melting temperature of $83 \text{ }^\circ\text{C}$. Also suitable are infra-red temperature measuring guns.

4.7 Resin rubber, thickness $(3,5 \pm 0,2)$ mm and hardness (95 ± 2) IRHD with a surface peel tear strength greater than that of the test specimen.

NOTE Hardness (95 ± 2) IRHD is equal to Shore A.

4.8 Solvent-borne polyurethane adhesive, which will bond well to resin rubber and the coated surface of the test specimen.

4.9 Adhesion primer, such as a halogenating solution used in footwear manufacture, for rubber can be helpful in producing satisfactory bonds.

4.10 Cutting device, such as a press knife or scissors capable of cutting rectangular test specimens of dimensions $(50 \pm 1) \text{ mm} \times (70 \pm 1) \text{ mm}$. In addition, if carrying out the test on hydrolysed test specimens, a second cutting device is required to cut square test specimens $(70 \pm 1) \text{ mm} \times (70 \pm 1) \text{ mm}$.

4.11 Cutting device, such as a sharp knife or rotary disc cutter for cutting test specimens from bonded test assemblies. This device shall neither unduly compress nor force apart the layers of the test assembly at the edges during cutting, and therefore a press knife is unsuitable.

4.12 Distilled or deionized water, if testing the wet adhesion strength, complying with grade 3 of ISO 3696.

4.13 Timer, capable of recording times up to 30 s to the nearest 0,5 s.

5 Sampling

5.1 For the dry tests, mark six rectangular boxes $(70 \pm 1) \text{ mm} \times (50 \pm 1) \text{ mm}$: two with their longer edges parallel to the along direction of sheet material (machine or backbone direction) or X-axis (as defined in ISO 17709) of the upper, and four with their longer edges perpendicular to this, on the reverse of the sheet material or uppers.

5.2 For the wet tests, mark either a further two rectangular boxes $(70 \pm 1) \text{ mm} \times (50 \pm 1) \text{ mm}$, putting the 50 mm edge in the direction with the lowest dry peel strength (if already known), or a further six boxes as described in [5.1](#) on the reverse of the material or uppers.

5.3 Make further marks on the material to divide each of the rectangles marked in [5.1](#) and [5.2](#) into two equal halves $(35 \pm 0,5) \text{ mm} \times (50 \pm 1) \text{ mm}$. Mark the along direction or X-axis in each of the smaller rectangles. Use an arrow and ensure that the arrow heads point in the same direction. For uppers, the arrow head shall point towards the toe.