
**Footwear — Test methods for hollow
and compact heels with top pieces —
Top piece attachment strength**

*Chaussures — Méthodes d'essai pour les talons creux et pleins avec
bonbouts — Résistance de fixation des bonbouts*

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Footwear — Test methods for hollow and compact heels with top pieces — Top piece attachment strength

1 Scope

This document specifies a method for determining the attachment pull-out strength of heel top pieces.

This method is applicable to all kind of heels with top pieces.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 7500-1, *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 18454, *Footwear — Standard atmospheres for conditioning and testing of footwear and components for footwear*

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3 Terms and definitions (standards.iteh.ai)

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

4 Apparatus

4.1 A tensile testing machine with the following:

- A jaw separation rate of (100 ± 10) mm/min.
- A suitable force range for the sample to be tested, with 2 % accuracy, as specified for Class 2 in ISO 7500-1. For most cases, the adequate force range is 0 N to 1 000 N.
- A means of recording the force, as specified in ISO 7500-1, Class 2.
- A clamping device comprising (see [Figure 1](#)):
 - jaws, whose central shafts are aligned in the direction of the load applied, that is perpendicular to the external edges of the jaws. The upper and lower jaws lie on the same plane;
 - jaws manufactured in such a way that they are able to hold the test-piece and prevent it from slipping, and their edges do not cut or damage the test-piece.

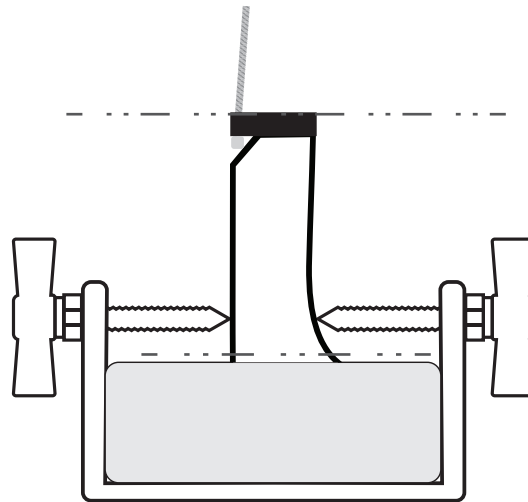


Figure 1 — Clamping device

4.2 A drill.

4.3 A knife or a similar cutting tool.

4.4 **Steel cord**, of approximately 1 mm in diameter and a stop in one of its ends of more than 2 mm in diameter.

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5 Sampling and conditioning

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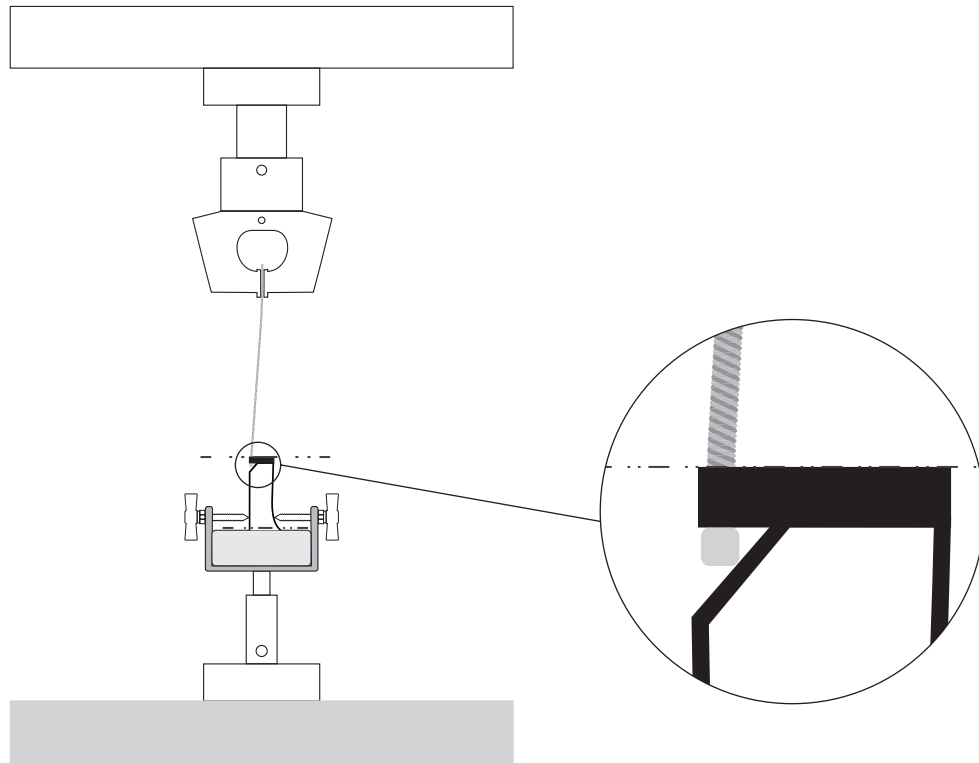
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At least three heels or shoes shall be tested.

Condition the samples 24 h before testing, according to ISO 18454, at $(23 \pm 2) ^\circ\text{C}$ and $(50 \pm 5) \%$ relative humidity.

6 Preparation of test-pieces

Using a knife or a similar cutting tool, cut out a part of the heel edge underneath the rear part of the top-piece. Then, use the 2 mm bit to drill a hole through the overhanging part of the top piece, maintaining a distance of at least 2 mm to the edge of the top piece. Clamp firmly the heel or the shoe in such a way that the top piece lies on top horizontally and it is prevented from moving during the test. Pass the steel cord through the hole, leaving the cord stop between the top piece and the heel (see [Figure 2](#)) and clamping the free end of the cord in the middle of the upper jaws.



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Figure 2 — Test piece placed in the tensile testing machine
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7 Procedure

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Run the tensile test machine until the top piece is completely separated and note the maximum force recorded.

In the case of top pieces with several pivots, several increases in forces will be recorded (one for each pivot); in that case, note the first maximum force recorded. In case of tearing of the top piece, repeat the test changing the distance of the hole from the edge of the overhanging part of the top piece.

8 Expression of results

The results are expressed in N, recording the average force value obtained.

9 Test report

The test report shall contain the following information:

- identification or description of the footwear tested (photograph is recommended);
- reference to this document, i.e. ISO 24264:2020;
- the result obtained expressed in N;
- date of test;
- any deviation from the method given in this document.

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