
**Footwear — Performance requirements
for components for footwear — Stiffeners
and toepuffs**

*Chaussures — Exigences de performance pour les composants des
chaussures — Contreforts et renforts*

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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 of all such patent rights.

ISO/TR 22648 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 309, *Footwear*, in collaboration with Technical Committee ISO/TC 216, *Footwear*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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Footwear — Performance requirements for components for footwear — Stiffeners and toepuffs

1 Scope

This Technical Report establishes the performance requirements for stiffener and toepuff components for footwear (not for finished footwear), irrespective of the material, in order to assess the suitability for the end use and/or fitness for purpose. It also establishes the test methods to be used to evaluate the compliance with the requirements.

This Technical Report applies to stiffeners and toepuffs for all kind of footwear as defined in Clause 3.

This Technical Report is intended to be used as a reference between the manufacturer and the supplier. It is not intended for third party certification of finished shoes destined for the consumer.

This Technical Report does not establish the degrees of hardness that have to be chosen by the manufacturer.

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2 Normative references (standards.iteh.ai)

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 31-0, *Quantities and units — Part 0: General principles*

ISO 17709, *Footwear — Sampling location, preparation and duration of conditioning of samples and test pieces*

EN ISO 19952, *Footwear — Vocabulary*

EN ISO 20863, *Footwear — Test methods for stiffeners and toepuffs — Bondability*

EN ISO 20864, *Footwear — Test methods for stiffeners and toepuffs. Mechanical characteristics*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 19952 apply.

4 Requirements

4.1 General

This Technical Report establishes performance (essential) requirements, all of which shall be taken into account.

The results of each single analytical determination, as well as the average values, shall be rounded off in accordance with ISO 31-0.

When taken from finished footwear, samples shall be prepared in accordance with ISO 17709.

4.2 Performance requirements for stiffeners and toepuffs for general purpose sports and leisure footwear, children's school footwear, casual footwear, men's and women's town footwear, specialist cold weather footwear, fashion footwear, infants' footwear and indoor footwear

See Table 1.

Table 1 — Test methods and properties for various types of footwear

Test method	Property		Requirement
EN ISO 20863	Bondability		With lining Dry \geq 5 N/mm Wet \geq 3 N/mm Without lining Dry \geq 10 N/mm Wet \geq 6 N/mm
EN ISO 20864	Mechanical characteristics	Shape retention	> 70 % after 1 deformation > 50 % after 10 deformations
		Collapsing load	> 50 % after 10 deformations

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5 Marking and labelling

Marking and labelling is optional.

If reference to this Technical Report is made, only stiffeners and toepuffs complying with all the essential requirements can be marked. In this case, this shall be clearly marked by the manufacturer either directly on the product or by a label with the following additional information:

- a) the manufacturer's name, trade mark or identification mark;
- b) the type of footwear for which the stiffener or toepuff shall be used as indicated in Table 2;
- c) reference to this Technical Report.

Any reference to compliance with this Technical Report shall not be put in a part of the stiffener or toepuff which could be visible when the footwear is finished.

Table 2 — Codes for various types of footwear

Type of footwear	Code
General sports footwear	SP
School footwear	SC
Casual footwear	CS
Men's town footwear	MT
Cold weather footwear	CW
Women's town footwear	WT
Fashion footwear	FS
Infants' footwear	IF
Indoor footwear	IN

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