



**International
Standard**

ISO 20681

**Footwear and footwear
components — Test method to
assess antimicrobial activity — Agar
diffusion test**

*Chaussures et composants de chaussures — Méthode d'essai pour
évaluer l'activité antimicrobienne — Essai de diffusion sur gélose*

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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).

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This document was prepared by Technical Committee ISO/TC 216, *Footwear*.

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 and footwear components — Test method to assess antimicrobial activity — Agar diffusion test

CAUTION — Test methods specified in this document require the use of microbes. These tests shall only be carried out in facilities with containment techniques for handling microorganisms and by persons with training and experience in the use of microbiological techniques.

1 Scope

This document specifies a test method for evaluating the antimicrobial (either antibacterial or antifungal, or both) activity of footwear and footwear components.

This document is applicable to all types of footwear and footwear components employing diffusing antimicrobial treatments.

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 7218, *Microbiology of the food chain — General requirements and guidance for microbiological examinations*

ISO 19952, *Footwear — Vocabulary*

3 Terms and definitions

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

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

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

3.1 antimicrobial activity

efficacy of a material or finish used to prevent or mitigate the growth of microbes, to reduce the number of microbes or to kill microbes

3.2 control specimen

specimen with material identical to the test specimen but without antimicrobial treatment

3.3 zone of inhibition

region of no microbial growth near the boundary between the specimen and the agar medium surface

4 Principle

The test specimens and control specimens are placed on agar plates which have been inoculated with a microbial suspension of a selected test strain specified or claimed in independent tests with one Gram-positive and one Gram-negative bacterial test organism, and one microfungus (yeast) test organism.