

TECHNICAL REPORT

ISO
TR 11220

First edition
1993-11-01

Footwear for professional use — Determination of slip resistance

Chaussures à usage professionnel — Détermination de la résistance au glissement



Reference number
ISO/TR 11220:1993(E)

AVA Documents
Document Sharing Hub

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 main task of technical committees is to prepare International Standards, but in exceptional circumstances a technical committee may propose the publication of a Technical Report of one of the following types:

- type 1, when the required support cannot be obtained for the publication of an International Standard, despite repeated efforts;
- type 2, when the subject is still under technical development or where for any other reason there is the future but not immediate possibility of an agreement on an International Standard;
- type 3, 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).

Technical Reports of types 1 and 2 are subject to review within three years of publication, to decide whether they can be transformed into International Standards. Technical Reports of type 3 do not necessarily have to be reviewed until the data they provide are considered to be no longer valid or useful.

ISO/TR 11220, which is a Technical Report of type 2, was prepared by Technical Committee ISO/TC 94, *Personal safety – Protective clothing and equipment*, Sub-Committee SC 3, *Foot protection*.

For an explanation of the relationship of this Technical Report to the expected future International Standard, see the introduction.

This document is being issued in the type 2 Technical Report series of publications (according to subclause G.4.2.2. of part 1 of the ISO/IEC Directives, 1992) as a "prospective standard for provisional application" in the field of slip resistance of professional footwear because there is an

© ISO 1993

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

urgent need for guidance on how standards in this field should be used to meet an identified need.

This document is not to be regarded as an "International Standard". It is proposed for provisional application so that information and experience of its use in practice may be gathered. Comments on the content of this document should be sent to the ISO Central Secretariat.

A review of this type 2 Technical Report will be carried out not later than three years after its publication with the options of: extension for another three years; conversion into an International Standard; or withdrawal.

Annexes A and B of this Technical Report are for information only.

Introduction

Resistance to slipping is a very important safety feature of footwear for professional use, or indeed of any footwear, but it is extremely difficult to measure objectively since there are so many variables which must be taken into account. WG 1 of ISO/TC 94/SC 3 was established in 1984 to investigate the problems and develop a method which could be standardized internationally. In the succeeding years, many meetings were held and much work undertaken, including two major international collaborative tests, resulting in the method described in this Technical Report. However, the Working Group was aware that this method is not completely satisfactory. An assessment of precision and validity based on the results obtained during the second collaborative test had shown that there was no correlation between coefficients of friction for different floor/lubricant combinations and that the interlaboratory reproducibility was extremely poor. Further details of both collaborative tests are given in annex A.

Although further amendments were made to the method as a result of the second test work, ISO/TC 94/SC 3 felt that it would not be appropriate to publish it as an International Standard until all the outstanding technical points had been resolved and acceptable reproducibility between test laboratories had been established. It was therefore agreed that the method should be issued as a Technical Report, thus making it available for further study and application over a wider forum, in the hope that in due course the experience thus gained would enable a revised draft to be put forward as an International Standard.

Attention is drawn especially to the following points which need further clarification.

a) **Artificial foot**

The artificial foot specified in this Technical Report is essentially identical to that specified in the French standard NF S 73-010, chosen primarily because it was easy to define. It does not, however, provide a close fit for the footwear, nor does it allow the measurement of the coefficient of friction of the heel alone. Some experts consider the dynamics of heel strike to be an important factor in the occurrence of slipping accidents and that it is therefore necessary to develop a method which takes this into account. Artificial feet used as prostheses, consisting of a wooden core and a rubber shell in the shape of a human foot, are available commercially in many different sizes and heel heights and if chosen correctly would provide a close fit for the footwear and thus could be used for measurements at different foot pitch angles. The Working Group hesitated to specify a commercial product but considered that such an artificial foot might prove to be the best choice for obtaining relevant measurements.