SINGAPORE STANDARD

SS 513 : Part 2 : 2005

ISO 20344 : 2004

(ICS 13.340.50)

SPECIFICATION FOR

Personal protective equipment – Footwear

Part 2 : Test methods for footwear

(ISO title : Personal protective equipment – Test methods for footwear)

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Contents

National Foreword

This Singapore Standard was prepared by the Technical Committee on Personal Safety and Ergonomics under the purview of the General Engineering and Safety Standards Committee.

This standard, which comes in two parts, supersedes SS 105 : 1997 – 'Safety footwear'. Part 1 specifies basic and additional (optional) requirements for safety footwear and Part 2 specifies methods for testing footwear designed as personal protective equipment.

This part of SS 513 is identical with ISO 20344 : 2004 – 'Personal protective equipment – Test methods for footwear'. ISO 20344 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 94, *Personal safety – Protective clothing and equipment,* Subcommittee SC 3, *Foot protection,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

For the purpose of this Singapore Standard, the CEN annex regarding fulfillment of European Council Directives has been removed.

Attention is also drawn to the following:

1. Where the references "EN ISO 20345" and "EN ISO 20344" appear, they should be interpreted as "SS 513 : Part 1" and "SS 513 : Part 2" respectively.

2. The reference to International/European Standards shall be replaced by the following Singapore Standards:

International/European Standard	Corresponding Singapore Standard
EN ISO 20344 : 2004	SS 513 : Part 2 : 2005 – Personal protective equipment – Footwear – Test methods for footwear
EN ISO 20345 : 2004	SS 513 : Part 1 : 2005 – Personal protective equipment – Footwear – Safety footwear

3. The comma has been used throughout as a decimal marker in ISO 20344, whereas in Singapore Standards it is a practice to use a full-point on the baseline as the decimal marker.

It is the professional view of the Representative of the Ergonomics Society of Singapore that to ensure a valid wear/fitting trial (ergonomic assessment), at least 15 users drawn from the representative population percentiles should be tested.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. SPRING Singapore shall not be held responsible for identifying any or all of such patent rights.

NOTE

1. Singapore Standards are subject to periodic review to keep abreast of technological changes and new technical developments. The revisions of Singapore Standards are announced through the issue of either amendment slips or revised editions.

2. Compliance with a Singapore Standard does not exempt users from legal obligations.

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.

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.

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.

ISO 20344 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 94, *Personal safety – Protective clothing and equipment,* Subcommittee SC 3, *Foot protection,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read "…this European Standard…" to mean "…this International Standard…".

This first edition of ISO 20344 cancels and replaces ISO 8782-1:1998, which has been technically revised.

For the purpose of this International Standard the CEN annex regarding fulfillment of European Council Directives has been removed.

Foreword

This document (EN ISO 20344:2004) has been prepared by CEN /TC 161, "Foot and leg protectors", the secretariat of which is held by BSI in collaboration with ISO/TC 94 "Personal safety - Protective clothing and equipment".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2005, and conflicting national standards shall be withdrawn at the latest by August 2005.

This document supersedes EN 344:1992 and EN 344-2: 1996.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom

Specification for personal protective equipment – Footwear : Part 2 : Test methods for footwear

1 Scope

This Standard specifies methods for testing footwear designed as personal protective equipment.

2 Normative references

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.

EN 388:1994, Protective gloves against mechanical risks

EN 12568:1998, Foot and leg protectors — Requirements and test methods for toecaps and metal penetration resistant inserts

EN 50321:1999, Electrically insulating footwear for working on low voltage installations

EN ISO 868, Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868:2003)

EN ISO 3696, Water for analytical laboratory use – Specification and test methods (ISO 3696:1987)

EN ISO 3376:2002, Leather — Physical and mechanical tests - Determination of tensile strength and percentage extension (ISO 3376:2002)

EN ISO 3377-2, Leather - Physical and mechanical tests - Determination of tear load (ISO 3377-2: 2002)

EN ISO 4044, Leather — Preparation of chemical test samples (ISO 4044:1977)

EN ISO 4045, Leather — determination of pH (ISO 4045:1977)

EN ISO 4674-1:2003, Rubber- or plastics-coated fabrics - Determination of tear resistance - Part 1: Constant rate of tear methods (ISO 4674-1:2003)

EN ISO 17249:2004, Safety footwear with resistance to chain saw cutting (ISO 17249: 2004)

EN ISO 20345, Personal protective equipment - Safety footwear (ISO 20345:2004)

EN ISO 20346, Personal protective equipment - Protective footwear (ISO 20346:2004)

EN ISO 20347, Personal protective equimpent - Occupational footwear (ISO 20347:2004)

ISO 34-1:1994, Rubber, vulcanised or thermoplastic — Determination of tear strength — Part 1 : Trouser, angle and crescent test pieces

ISO 1817:1999, Rubber, vulcanised — Determination of the effect of liquids

ISO 2023:1994, Rubber footwear - Lined industrial vulcanized rubber boots - Specification

ISO 3290, Rolling bearings — Balls — Dimensions and tolerances

ISO 4643:1992, Moulded plastic footwear — Lined or unlined poly(vinyl chloride) boots for general industrial use — Specification