

BRITISH STANDARD

Protective clothing and equipment for use in violent situations and in training –

Part 11: Foot and ankle protectors and foot protectors – Requirements and test methods

ICS 13.340.10



NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

Publishing and copyright information

The BSI copyright notice displayed in this document indicates when the document was last issued.

© BSI 2006

ISBN 0 580 48937 X

The following BSI references relate to the work on this standard:

Committee reference PH/3/12

Draft for comment 06/30122877 DC

Publication history

First published August 2006

Amendments issued since publication

Amd. no.	Date	Text affected
-----------------	-------------	----------------------

Contents

Foreword *iii*

Introduction *1*

1 Scope *2*

2 Normative references *2*

3 Terms and definitions *2*

4 Performance levels *2*

5 Construction and performance requirements *3*

6 Test methods *7*

Annexes

Annex A (informative) Information and guidance on use of foot and ankle protectors and foot protectors *15*

Bibliography *16*

List of figures

Figure 1 – Zones of protection *5*

Figure 2 – Attachment points on protectors, and directions of force application, for restraint testing *10*

Figure 3 – Dimensions of cylindrical anvils *12*

List of tables

Table 1 – Test conditions for blunt impact and blade impact testing *6*

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 16, an inside back cover and a back cover.

Foreword

Publishing information

This part of BS 7971 was published by BSI and came into effect on 31 August 2006. It was prepared by Subcommittee PH/3/12, *Protective clothing and equipment for use in violent situations*, under the authority of Technical Committee PH/3, *Protective clothing*. A list of organizations represented on this committee can be obtained on request to its secretary.

Information about this document

The following parts of BS 7971 are currently published or in preparation:

- *Part 1: General requirements;*
- *Part 2: Guidance on risk assessment and on the selection, use, cleaning and maintenance of protective clothing and equipment;*
- *Part 3: Personal defence shields – Requirements and test methods;*
- *Part 4: Limb protectors – Requirements and test methods;*
- *Part 5: Footwear – Requirements and test methods;*
- *Part 6: Gloves for protection against mechanical, thermal and chemical hazards – Requirements and test methods;*
- *Part 7: Slash-resistant gloves – Requirements and test methods;*
- *Part 8: Blunt trauma torso, shoulder, abdomen and genital protectors – Requirements and test methods;*
- *Part 9: Training suits and equipment – Requirements and test methods;*
- *Part 10: Coveralls – Requirements and test methods;*
- *Part 11: Foot and ankle protectors and foot protectors – Requirements and test methods.*

Product certification/inspection/testing. Users of this British Standard are advised to consider the desirability of third-party certification/inspection/testing of product conformity with the relevant parts of BS 7971. Appropriate conformity attestation arrangements are described in BS EN ISO/IEC 17025. Users seeking assistance in identifying appropriate conformity assessment bodies or schemes may ask BSI to forward their enquiries to the relevant association.

Hazard warnings

WARNING. This British Standard calls for the use of procedures that can be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Use of this document

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

Introduction

Foot and ankle protectors and foot protectors are items of protective clothing which are generally, but not exclusively, worn by serving police officers and prison officers whilst they are engaged in operational duties and in training. They are also used by civilians engaged in activities where the risks of attack and assault are similar e.g. private security personnel, bullion handlers, escorts and couriers.

Foot and ankle protectors and foot protectors are intended to reduce the severity of, or prevent, soft tissue injuries resulting from blunt trauma to specific areas of the feet, or the feet and ankles, of the wearer. Such blunt trauma can arise as the result of impact from airborne missiles (house bricks, assorted types of bottle, metal bars, pieces of timber, fragments of wood, broken glass and slates, etc.).

Foot and ankle protectors and foot protectors are not intended to provide ballistic protection or protection against sharp or pointed instruments (e.g. axes, spikes and knives).

Foot and ankle protectors and foot protectors can be separate items, or can be an additional component of the knee and shin protectors specified in BS 7971-4. They can be manufactured from, or encapsulated within, flame retardant materials.

For certain user groups including police and prison officers, foot and ankle protectors or foot protectors might constitute a second line of defence, where a personal defence shield, particularly a full-length shield, provides a degree of primary protection (see BS 7971-3). Whilst shields do not always prevent impacts with the wearer's feet and ankles by missiles or weapons, they can reduce the energy of impacts to levels at which foot and ankle protectors or foot protectors can have a significant effect in the reduction of soft tissue or skeletal injuries. Foot and ankle protectors and foot protectors of one performance level are specified.

The test methods specified in this part of BS 7971 have been selected to measure the performance of foot and ankle protectors and foot protectors with respect to the protection they can be expected to provide against the commonly faced hazards listed above. The severity of these tests cannot compare directly with the conditions to which police officers, prison officers and others can be exposed in real life situations, where different hazards can be encountered. However, experience has shown that foot and ankle protectors and foot protectors which pass such tests can significantly reduce the incidence and/or severity of injuries.

1 Scope

This part of BS 7971 specifies performance requirements and test methods for foot and ankle protectors and foot protectors to provide protection against blunt trauma, for use by police and prison officers and others who might be exposed to attack and assault in the course of their duties, for use in operational situations and in training.

NOTE 1 Information and guidance on the use of foot and ankle protectors and foot protectors is given in Annex A.

NOTE 2 Guidance on risk assessment and the selection, care and maintenance of protective clothing and equipment for use in violent situations and in training is given in BS 7971-2.

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 amendments) applies.

BS 7971-1, *Protective clothing and equipment for use in violent situations and in training – Part 1: General requirements*

BS 7971-4:2002, *Protective clothing and equipment for use in violent situations and in training – Part 4: Limb protectors – Requirements and test methods*

BS 7971-8:2003, *Protective clothing and equipment for use in violent situations and in training – Part 8: Blunt trauma torso, shoulder, abdomen and genital protectors – Requirements and test methods*

BS EN ISO 15025:2002, *Protective clothing – Protection against heat and flame – Method of test for limited flame spread*

3 Terms and definitions

For the purposes of this part of BS 7971 the terms and definitions given in BS 7971-1 apply.

4 Performance levels

Foot and ankle protectors and foot protectors shall each be of a single type which shall be performance level 3 as specified in BS 7971-1.