

# Protective clothing and equipment for use in violent situations and in training —

## Part 10: Coveralls — Requirements and test methods

ICS 13.340.10

|                           |
|---------------------------|
| Confirmed<br>January 2010 |
|---------------------------|

# Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee PH/3, Protective clothing, to Subcommittee PH/3/12, Protective clothing and equipment for use in violent situations, upon which the following bodies were represented:

- APSS — Association of Police and Public Security Suppliers
- Association of Chief Police Officers in Scotland
- BSIF Test and Certification Association
- British Association for Chemical Specialities
- British Association of Women Police
- British Clothing Industry
- British Glove Association
- British Textile Technology Group
- Defence Industries Association
- Home Office
- Medicines and Healthcare products Regulatory Agency
- Ministry of Defence — UK Defence Standardization
- National Association of Healthcare Safety and Risk Practitioners
- National Health Service
- Personal Safety Manufacturers' Association
- Police Federation of England and Wales
- Police Purchasing Manager Association
- Police Uniform Project Group
- SATRA Technology Centre
- Co-opted members

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 27 September 2004

© BSI 27 September 2004

The following BSI references relate to the work on this British Standard:  
Committee reference PH/3/12  
Draft for comment 03/109143 DC

ISBN 0 580 44481 3

## Amendments issued since publication

| Amd. No. | Date | Comments |
|----------|------|----------|
|          |      |          |
|          |      |          |
|          |      |          |
|          |      |          |
|          |      |          |

# Contents

|                                                                    | Page               |
|--------------------------------------------------------------------|--------------------|
| Committees responsible                                             | Inside front cover |
| Foreword                                                           | ii                 |
| Introduction                                                       | 1                  |
| 1 Scope                                                            | 1                  |
| 2 Normative references                                             | 1                  |
| 3 Terms and definitions                                            | 2                  |
| 4 Coverall types and performance levels                            | 3                  |
| 5 Construction and performance requirements                        | 3                  |
| 6 Test specimens, and pre-treatment and testing conditions         | 6                  |
| Annex A (informative) Information and guidance on use of coveralls | 7                  |
| Bibliography                                                       | 9                  |
| Table 1 — Types and performance levels of coveralls                | 3                  |
| Table 2 — Maximum test scores                                      | 3                  |

## Foreword

This part of BS 7971 has been prepared by Subcommittee PH/3/12.

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.*

Mannequin testing of coveralls for the purpose of burn injury prediction is not specified in this standard because there is currently no agreed test method available. A European standard giving a method for mannequin testing of coveralls is under development.

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

**WARNING.** This British Standard calls for the use of substances and/or procedures that may 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.

*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.

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 does not of itself confer immunity from legal obligations.**

### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 9 and a back cover.

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

## Introduction

Coveralls 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.

Coveralls are intended to protect the body of the wearer, excluding the head, hands and feet, from the effects of heat and flame and some liquids. Coveralls can be single or multi-layered. A coverall is intended to be worn as an outermost garment, over any other protective clothing that might be needed. Additional thermal protection can be provided by the use of undergarments. These undergarments are not specified in the present standard.

The test methods specified in this part of BS 7971 have been selected to measure the performance of coveralls with respect to the protection they can be expected to provide against heat and flame and certain liquids. 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 heat and chemical hazards can be encountered. However, experience has shown that coveralls which pass such tests can reduce the incidence and/or severity of injuries.

## 1 Scope

This part of BS 7971 specifies requirements and test methods for coveralls, including single and two-piece garments, to provide protection against heat and flame and specific liquids, 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 coveralls 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 EN 367, *Protective clothing — Protection against heat and flames — Test method: Determination of the heat transmission on exposure to flame.*

BS EN 368, *Protective clothing — Protection against liquid chemicals — Test method: Resistance of materials to penetration by liquids.*

BS EN 530:1995, *Abrasion resistance of protective clothing material — Test methods.*

BS EN 702, *Protective clothing — Protection against heat and flame — Test method: Determination of the contact heat transmission through protective clothing or its materials.*

BS EN 25077, *Textiles — Determination of dimensional change in washing and drying.*

BS EN 31092, *Textiles — Determination of physiological properties — Measurement of thermal and water-vapour resistance under steady-state conditions (sweating guarded-hotplate test).*

BS EN ISO 105-B02, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test.*

BS EN ISO 105-D01, *Textiles — Tests for colour fastness — Part D01: Colour fastness to dry cleaning.*

BS EN ISO 105-E04, *Textiles — Tests for colour fastness — Part E04: Colour fastness to perspiration.*

BS EN ISO 105-X12, *Textiles — Tests for colour fastness — Part X12: Colour fastness to rubbing.*

BS EN ISO 3175-1, *Textiles — Dry cleaning and finishing — Part 1: Method for assessing the cleanability of textiles and garments.*