

Coated fabrics for use in the manufacture of water penetration resistant clothing

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee TCI/78, Coated fabrics, upon which the following bodies were represented:

- Association of Consulting Scientists
- British Plastics Federation
- British Rubber Manufacturers' Association Ltd.
- British Textile Technology Group
- FIRA International
- Made-up Textiles Association
- Ministry of Defence
- Maritime and Coastguard Agency
- RAPRA Technology Ltd.
- SATRA Technology Centre
- Textile Institute

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Foreword

This British Standard has been prepared by Technical Committee TCI/78. It supersedes BS 3546-2:1993, BS 3546-4:1991 and BS 3546-5:1995, which are withdrawn.

Annex A, Annex B, Annex C, Annex D, Annex E, Annex F, Annex G and Annex H are normative. Annex I is informative.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 14, an inside back cover and a back cover.

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1 Scope

This British Standard specifies the requirements for water vapour permeable, and non-water vapour permeable coated fabrics, suitable for use in the construction of water penetration resistant clothing. This standard does not address the method of fabrication of the garment. However, the physical requirements attributed to water penetration resistance of the final garment should in no way be inferior to those listed for the coated fabric.

A guide to the cleaning of soiled garments is included in Annex I as it is felt that this is more of a property of the coated fabric than that of the garments.

NOTE The coding system applicable to the coating polymer(s) employed in the manufacture of these coated fabrics is given in Table 1. Table 2 gives codes to distinguish the possible application of the materials but does not indicate a performance rating.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this British Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. For undated references, the latest edition of the publication referred to applies.

BS 950-2, *Specification for artificial daylight for the assessment of colour — Part 2: Viewing conditions for the graphic arts industry.*

BS 2846-2, *Guide to statistical interpretation of data — Part 2: Estimation of the mean: confidence interval.*

BS 2846-3, *Guide to statistical interpretation of data — Part 3: Determination of a statistical tolerance interval.*

BS 3424-12:1990, *Testing coated fabrics — Part 12: Accelerated ageing tests.*

BS 3424-14, *Testing coated fabrics — Part 14: Method 16. Method for determination of colour fastness to wet and dry rubbing and determination of resistance to printwear.*

BS 3424-22, *Testing coated fabrics — Part 22: Method 25. Methods for determination of fusion of PVC coatings and the state of cure of vulcanized rubber coatings.*

BS 3424-24:1990, *Testing coated fabrics — Part 24: Methods 27A and 27B. Methods for determination of abrasion resistance.*

BS 3424-26:1990, *Testing coated fabrics — Part 26: Methods 29A, 29B, 29C and 29D. Methods for the determination of resistance to water penetration and surface wetting.*

BS 3424-34, *Testing coated fabrics — Part 34: Method 37. Method for the determination of water vapour permeability index (WVPI).*

BS 3424-38, *Testing coated fabrics — Part 38: Determination of wounded burst strength.*

BS 5214-1:1995, *Specification for testing machines for rubbers and plastics — Part 1: Tensile, flexural and compression types (constant rate of traverse).*

BS EN 471, *Specification for high-visibility warning clothing.*

BS EN 10002-2:1992, *Tensile testing of metallic materials — Part 2: Verification of the force measuring system of the tensile testing machine.*

BS EN 12332-1, *Rubber or plastics coated fabrics — Determination of bursting strength — Part 1: Steel ball method.*

BS EN 20105-C02, *Textiles — Test for colour fastness — Colour fastness to washing: Test 2.*

BS EN 25978, *Rubber- or plastics-coated fabrics — Determination of blocking resistance.*

BS EN 26330:1994, *Textiles — Domestic washing and drying procedures for textile testing.*

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

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

BS EN ISO 105-D02, *Textiles — Tests for colour fastness — Colour fastness to rubbing: Organic solvents.*

BS EN ISO 2231, *Rubber- or plastics-coated fabrics — Standard atmospheres for conditioning and testing.*

BS EN ISO 7854:1997, *Rubber- or plastics-coated fabrics — Determination of resistance to damage by flexing.*

3 Terms and definitions

For the purposes of this British Standard, the following terms and definitions apply.

3.1

coated fabric

material composed of two or more layers, at least one of which is a textile material (woven, knitted or non-woven) and at least one of which is a substantially continuous polymeric film, bonded closely together by means of an added adhesive or by the adhesive properties of one or more of the component layers

3.2

water penetration resistance

WPR

ability of a coated fabric to withstand a hydrostatic head pressure when tested in accordance with method 29A of BS 3424-26:1990

NOTE It is recommended that the term “penetration resistant” to water should not be applied to any coated fabric that does not exhibit a WPR greater than 10 kPa when tested in the “as received” condition. The term “water proof” is a deprecated term which implies that the water penetration resistance of a coated fabric is equivalent to its hydraulic bursting strength.

3.3

water vapour permeability

ability of a coated fabric to transmit water vapour above a specified level whilst maintaining a high degree of water penetration resistance

3.4

water vapour permeability index

WVPI

water vapour permeability of a material expressed as a percentage of a known reference standard

3.5

delamination

partial or whole separation of two, or more, of the component layers of a coated fabric, either a fabric to polymer separation or a separation within the actual polymeric layer

NOTE See 6.3 of BS EN ISO 7854:1997.

3.6

double textured coated fabric

coated fabric in which both faces of the coated fabric are of a textile nature

4 Marking and information

Each roll of coated fabric shall have a label attached bearing the following information:

- a) the name and/or distinctive mark of the manufacturer, and a means of identifying the manufacturing batch number;
- b) the number of this British Standard, i.e. BS 3546:2001¹⁾ and the supplier’s quality code relating to the material.

¹⁾ Marking BS 3546:2001 on or in relation to a product represents a manufacturer’s declaration of conformity, i.e. a claim by or on requirements of the standard. The accuracy of the claim is solely the claimant’s responsibility. Such a declaration is not to be confused with third-party certification of conformity.