

Specification for

Water vapour permeable apparel fabrics

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Textiles and Clothing Standards Policy Committee (TCM/-) to Technical Committee TCM/18, upon which the following bodies were represented:

- Assistant Masters and Mistresses Association
- British Clothing Industry Association
- British Railways Board
- British Textile Employers' Association
- Confederation of British Wool Textiles Limited
- Department of Health
- Home Office
- International Wool Secretariat
- Local Authority Organizations
- Mail Order Traders' Association
- Man-made Fibres Producers' Committee
- Ministry of Defence
- National Association of Head Teachers
- National Children's Wear Association
- Textile and Clothing Contractors' Association
- Textile Research Council (FCRA)

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- British Marine Industries Federation
- British Plastics Federation

This British Standard, having been prepared under the direction of the Textiles and Clothing Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 31 May 1990

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

This British Standard has been prepared under the direction of the Textiles and Clothing Standards Policy Committee and specifies requirements for fabrics, suitable for the manufacture of water resistant clothing, which allow the permeation of water vapour. The fabrics were initially considered by the British Mountaineering Council as suitable for outdoor pursuits but it is now considered that their use can be extended to other areas.

The standard covers only the basic description of the fabrics and their construction and performance requirements. Purchasing authorities therefore may need to include additional information.

Many properties cannot be specified objectively and cannot therefore be included in the specification, examples of such properties include colour, handle, appearance and details of additional design features. Public sector purchasing authorities may be able to supply standard patterns which cover these properties and serve to resolve any ambiguities of description.

Appendix A gives a scheme for the selection of test specimens and Appendix B gives the method for the determination of water vapour permeability index.

Appendix C, Appendix D and Appendix E give methods for the determination of the resistance to water penetration after cleaning, abrasion and flexing respectively, and Appendix F gives a method for the determination of surface wetting after cleaning.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations. In particular, attention is drawn to Statutory Instrument 1986 No. 26 Trade Descriptions, the Textile Products (Indications of Fibre Content) Regulations 1986.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies requirements for two grades of fabric, which are suitable for the manufacture of water resistant clothing, and which allow the permeation of water vapour.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this standard the definitions given in BS 3546-1 and BS 6189 apply together with the following.

2.1 batch

a definite quantity of some commodity manufactured or produced under conditions which are presumed uniform

2.2 bulk

the total number of rolls of fabric included in any part delivery

3 Performance

3.1 Physical requirements

The fabrics shall comply with Table 1.

3.2 Colour fastness requirements

3.2.1 General. Except in the case of garments where fluorescent colours are specified, the fabrics shall comply with the requirements of Table 2.

Colour fastness shall be tested on that surface of the fabric intended to be worn outermost, except that for colour fastness to rubbing, both surfaces of the fabric shall be tested.

NOTE Colour selection may be made by reference to the colours in BS 381C.

3.2.2 Fluorescent colours. Where fluorescent colours are specified within the limits outlined in BS 6629, the colour fastness requirements shall be in accordance with that British Standard.

4 Sampling, selection of test specimens and compliance

4.1 Sampling

Sampling shall be carried out in such a manner that samples taken are representative of the manufacturing, processing, dyeing or finishing batch from which they are drawn and at a frequency of not less than one sample per kilometre of fabric.

4.2 Selection of test specimens

NOTE Unless otherwise specified by the purchaser, samples should be taken not nearer than 20 m from the beginning or end of a batch.

The size of samples taken from each manufacturing batch shall be such that the aggregate size of the samples is sufficient to enable test specimens to be selected for the purposes of fulfilling the requirements in Table 1 and Table 2.

Test specimens shall be selected from the sample in accordance with Appendix A.

In the case of multi-colour samples, all colours shall be represented by the specimens selected for colour fastness testing in accordance with Table 2.

Table 1 — Physical properties

Fabric reference		LA	HA	Method of test
Water vapour permeability index (%)	min.	50	80	Appendix B
Resistance to water penetration (kPa) ^a				
a) as received	min.	15	50	BS 3424-26: method 29A ^b
b) after cleaning	min.	10	35	Appendix C ^b
c) after abrasion	min.	10	35	Appendix D ^b
d) after flexing	min.	10	35	Appendix E ^b
Cold crack temperature (°C)	max.	– 20	– 40	BS 3424-8: method 10A
Surface wetting (spray rating)				
a) as received	min.	4	4	BS 3702 ^{bc}
b) after cleaning	min.	3	3	Appendix F ^{bc}

^a 1 kPa = 102 mm H₂O.
^b Applying the water to that surface of the fabric intended to be used outermost.
^c Using water conforming to grade 3 of BS 3978 at a temperature of 20 ± 2 °C.