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Specification for Interlinings

Part 2. Nonwoven fusible interlinings

Gr 5
British Standards Institution

BS 4973 : Part 2 : 1973

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Foreword

A comprehensive range of traditional fabric constructions is contained in BS 4560, 'Linings and interlinings for uniform clothing'. User trials by hospital and fire brigade staffs have encouraged the adoption of a specification for non-traditional constructions. This is the second part of a three part standard which deals with:

Part 1: Nonwoven sew-in interlinings
Part 2: Nonwoven fusible interlinings
Part 3: Woven fusible interlinings (in course of preparation)

It is intended that the fabrics in this specification should be used in conjunction with the outer cloths specified in BS 1771, 'Outdoor uniform cloths for fire service, local authority and hospital staffs'. Attention is drawn to the fact that, with certain types of fabric and finish, perfect fusing may be difficult.

British Standard Specification for

Interlinings

Part 2. Nonwoven fusible interlinings

1. Scope

This Part of this British Standard specifies requirements for nonwoven fusible interlinings for uniform clothing for large users such as Government departments, fire services, hospitals and local authorities. Technical requirements are tabulated in Table 1 and recommended uses in Table 2.

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

2. Definitions

For the purposes of this Part of this British Standard, the following definitions apply:

Strike-through. Penetration of the adhesive from the interlining to the face of the outer fabric.

Strike-back. Penetration of the adhesive to the outer surface of the interlining.

3. Fusing

Fusing instructions shall be supplied with the interlining, and these shall be followed exactly by the maker-up. In this case, there shall be no strike-through and strike-back shall not be sufficient to cause subsequent adhesion to the lining and/or pocketing.

At least 24 hours shall be allowed to elapse between fusing operations and the carrying out of tests.

4. Technical requirements

4.1 The mass per unit area of the fusible interlining most suitable for use with the outer fabric shall be agreed between the purchaser and the manufacturer, and shall be within one of the ranges given in Table 1. The mass per unit area so agreed shall be subject to a tolerance of ± 10 %.

4.2 The bursting strength shall be as shown in Table 1 when tested by the method specified in BS 3137 for the determination of bursting strength of paper.

4.3 The flex resistance and durability of the laminate (i.e. outer fabric plus interlining) shall be assessed after each specimen has been subjected three times to the treatment given in BS 4961 which gives two methods of test for dry cleaning (including steam finishing). The laboratory procedure is intended primarily for screening and control testing and in cases of dispute the machine procedure shall be used.

4.4 Peel bond strengths vary according to the construction of the outer fabric and the type of finish the cloth has received. It is not practicable to specify a minimum strength that will be adequate for all the fabrics listed in BS 1771. It is therefore recommended for quality control purposes that the peel bond strength shall be as agreed between the purchaser and the supplier, according to the specific fabric and fusing method involved. A method for determination of peel bond strength is given in Appendix A.

4.5 Dimensional change on cold water immersion shall be limited as shown in Table 1.

4.6 For purposes of general comparison in respect of handle not specified in this British Standard, agreement shall be reached between the purchaser and the manufacturer. There shall be no appreciable change in handle of the laminate after dry cleaning.

5. Marking

Each cloth in the finished state shall be identified by this British Standard reference number, (i.e. BS 4973), either by stamping or by labelling.

NOTE. Attention is drawn to the certification facilities offered by BSI. See the inside back cover of this British Standard.

Table 1. Technical requirements

Property	Test method	Performed on*	Compliance requirement FNW1	FNW2	FNW3	FNW4
Mass (g/m^2)	BS 2471	I	45 to 70	70 to 100	100 to 130	130 to 200
Bursting strength (kN/m^2 min.†)	BS 3137	I	90	110	120	135
Flexibility and durability	BS 4961	L	No delamination of the interlining from the outer fabric and no appreciable change in handle			
Dimensional change on cold water immersion (% max.)	BS 4736	I	2	2	2	2

* L = Laminate, I = Interling

† 1 kN/m^2 = 1 kPa.

Table 2. Uses

(a) Lightweight jackets of fabric up to 410 g/m^2:	
Foreparts	FNW1
Cuffs	FNW1
Stays	FNW1
(b) Jackets of fabric over 410 g/m^2:	
Foreparts	FNW2, FNW3
Chest reinforcements	FNW2, FNW3
Cuffs	FNW1, FNW2, FNW3
Stays	FNW2, FNW3
(c) Overcoats:	
Foreparts	FNW3
Chest reinforcements	FNW3, FNW4
Stays	FNW3
Collars	FNW2, FNW3, FNW4
Belts	FNW2, FNW3, FNW4
(d) Raincoats:	
Foreparts	FNW1, FNW2, FNW3
Chest reinforcements	FNW2, FNW3, FNW4
Stays	FNW1
Collars	FNW1, FNW2, FNW3
Flaps, welts, etc.	FNW1, FNW2, FNW3
Belts	FNW1, FNW2, FNW3

These recommendations are for guidance only and do not prohibit the use of the various interlinings for other purposes if so desired.

Appendix A
Determination of peel bond strength

A.1 **General.** This test is performed on specially prepared specimens of laminate (i.e. interlining fused to outer fabric). Whilst compliance with the requirements of this British Standard depends on the satisfactory appearance of the laminate after three dry cleaning treatments, this method for determination of peel bond strength is suggested for use for quality control purposes.

A.2 **Apparatus.** The apparatus consists of two grips capable of accommodating a test specimen 50 mm in width. One grip is attached to a rigid support so that when a specimen is inserted centrally and normally it hangs in a vertical plane. The other grip is so constructed that it has a mass of 200 g and weight-pieces of 200 g mass may be added to it.

A.3 **Preparation of test specimen.** Prepare four composite specimens in the following manner.

Cut a specimen 100 mm x 50 mm of outer fabric and interlining. Mark a line on the interlining 25 mm from one end and at right angles to the longer edges. Insert a 25 mm x 50 mm piece of thin metal foil between the interlining and outer fabric to prevent fusing over this area, and fuse the interlining to the outer fabric, in accordance with the manufacturer's instructions. Allow at least 24 hours to elapse before proceeding.

A.4 **Procedure.** Secure the tongue formed by the outer fabric in the fixed jaw and the tongue formed by the interlining in the loose jaw, which has been made up to the specified mass by the addition of 200 g weight-pieces. After five minutes, record the distance from the line marked on the interlining to the apex of the separation.

A.5 **Report.** Report the separation distance, if any, in millimetres and the load applied. If the interlining ruptures before peeling, this should be reported as 'interlining breakdown'.

BSI publications referred to in this standard

This standard makes reference to the following British Standards:

BS 1771 Outdoor uniform cloths for fire service, local authority and hospital staffs

BS 2471 Methods of test for the mass per unit length and per unit area of woven or knitted fabrics

BS 3137 Method for determining the bursting strength of paper

BS 4736 Method for the determination of dimensional changes of fabrics by cold water immersion

BS 4961 Methods for the determination of dimensional stability of textiles to dry cleaning in perchloroethylene

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