BRITISH STANDARD

BS 2543:2004

Upholstery fabrics for end use applications — Classification

ICS 59.080.30; 97.140

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee TCI/66, Apparel and indoor fabrics, upon which the following bodies were represented:

Association of Button Merchants
Association of Consulting Engineers
Association of Consulting Scientists
Association of Suppliers to the British Clothing Industry
British Apparel and Textile Association
British Clothing Industry Association
British Measurement and Testing Association
British Textile Technology Group
Consumer Policy Committee of BSI
Home Laundering Consultative Council
Knitting Industries' Federation Ltd.
Laboratory of the Government Chemist
Made-up Textiles Association
Mail Order Traders Association
National Childrens' Wear Association
SATRA Technology Centre
Society of Dyers and Colourists
Textile Institute
Zip Fastener Manufacturers Association

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Foreword

This British Standard has been prepared by Technical Committee TCI/66. It is a revision of BS 2543:1995, which is withdrawn.

The revision has been prompted by the publication of BS EN 14465:2003, *Textiles – Upholstery fabrics – Specification and methods of test*, which specifies a set of properties relevant to the assessment of upholstery fabric for indoor furniture and appropriate test methods to determine these properties. However, the European Standard does not provide a designated product profile grading system adapted to each specific type of upholstery end use application. This revision provides the minimum product profile for upholstery fabric found to be useful to the users of BS 2543:1995 and cross-refers to the categories provided in BS EN 14465:2003.

BS 2543:2004 only contains references to properties listed in BS EN 14465:2003 where anything other than the minimum level would be stated.

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.

In particular, attention is drawn to:

Sale of Goods Act 1979

The Supply of Goods and Services Act 1982

Statutory Instrument 1986 No. 26, Trade Descriptions The Textile Products (Indications of Fibre Content) Regulations 1986;

Statutory Instrument 1988 No. 1324 The Furniture and Furnishings (Fire) (Safety) Regulations 1988;

Statutory Instrument 1989 No. 2358 The Furniture and Furnishings (Fire) (Safety) (Amendment) Regulations 1989;

Statutory Instrument 1993 No. 207 The Furniture and Furnishings (Fire) (Safety) (Amendment) Regulations;

Sale and Supply of Goods Act 1994;

Sale and Supply of Goods to Consumers Regulations 2002.

Summary of pages
This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 7 and a back cover.

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1 Scope

This British Standard provides a classification of covering fabric for domestic and contract upholstery applications.

This standard does not include within its scope plastics coated fabrics where the coating is the wear surface, fabrics intended solely for loose covers, leather, fabrics for transport applications and fabrics with a nominal pile length of five millimetres or more.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the reference cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 4655:1986*, Method for the determination of pile loss of cut-pile and non-loop pile upholstery fabrics.*

BS EN 14465:2003*, Textiles — Upholstery fabrics — Specification and methods of test.*

BS EN ISO 12947-2*, Textiles — Determination of the abrasion resistance of fabrics by the Martindale method — Part 2: Determination of specimen breakdown.*

3 Terms and definitions

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

3.1
detachable cover
intentionally removable cover which is part of the original design

NOTE This differs from a loose cover, which is supplied after market and may be from a different manufacturer.

3.2
figured weaves
fabric in which patterns or motifs are produced by a combination of distinct weaves, requiring a dobby or jacquard mechanism

4 Product profile classifications

Fabrics shall be classified for upholstery use by a product profile comprising a twin letter grouping indicating a technical description for appropriate end-use applications.

a) **LD** — *light domestic use:* suitable only for upholstery intended for occasional or very light usage.

NOTE 1 Piping is not recommended and arms should be well padded.

NOTE 2 Buttoning is not advisable on fabrics with a tear strength of less than 20 N.

b) **GD** — *general domestic use:* suitable for most styles of upholstery for general domestic use.

c) **HD** — *heavy domestic use:* suitable for upholstery where increased durability and enhanced performance are required to counter heavy use.

d) **GC** — *general contract use:* suitable for upholstery likely to be subject to general contract, e.g. environments where the furniture is likely to be used throughout the day.

e) **SC** — *severe contract use:* suitable for all types of upholstery use.

5 Minimum performance levels for product profile classification

Fabrics shall conform to the appropriate requirements given in Table 1, Table 2 and Table 3, when tested in accordance with the relevant methods of test detailed in BS EN 14465:2003.

Table 1 — Performance levels for product profile classification of flat woven, chenille and pile[a] fabric (BS EN 14465:2003, Table 1 and, for colour-fastness to water, Table 2)

Production profile classification		LD	GD	HD	GC	SC
Physical strength properties	tensile	C	C	B	B	B
	tear	E	D	C	C	C
	seam slippage	C	B	A	A	A
Abrasion resistance properties	All flat woven fabrics, excluding figured weaves	B 15 000 [c]	B 20 000 [c]	B 25 000 [c]	B 30 000 [c]	A 40 000 [c]
	Figured weaves [b]	B 12 000 [c]	B 15 000 [c]	B 20 000 [c]	B 30 000 [c]	A 40 000 [c]
	cut and uncut woven pile, flocked and non-woven pile fabric	C 15 000 [c]	C 20 000 [c]	B 25 000 [c]	B 25 000 [c]	B 30 000 [c]
Pilling resistance properties		C	C	B	B	B
Colour related properties	light	B	B	B	B	A
	rubbing wet	B	B	B	B	B
	rubbing dry	B	B	B	B	B
	water	A	A	A	A	A

[a] Pile fabrics include flocked and non-woven fabrics.
[b] Different levels of revolutions for abrasion resistance are applied to figured weaves because of the raised surface.
[c] Minimum level.

Table 2 — Performance levels for product profile classification of knitted fabric (BS EN 14465:2003, Table 1 and, for colour-fastness to water, Table 2)

Product profile classification		LD	GD	HD	GC	SC
Physical strength properties	Burst strength	B	B	B	B	B
Abrasion resistance properties		B 15 000 [a]	B 20 000 [a]	B 25 000 [a]	B 25 000 [a]	B 30 000 [a]
Pilling resistance properties		C	C	B	B	B
Colour related properties	light	B	B	B	B	A
	rubbing wet	B	B	B	B	B
	rubbing dry	B	B	B	B	B
	water	A	A	A	A	A

[a] Minimum level.

Table 3 — Performance levels for additional properties for product profile classification of cut pile woven and flocked fabrics not included in BS EN 14465:2003

Product profile classification		LD	GD	HD	GC	SC
Pile retention properties	Test procedure					
Pile loss reverse	Annex A, **A.1**	A	A	A	A	A
Surface pile loss	Annex A, **A.2**	B	B	B	B	B
Surface pile loss for flocked fabrics	Annex A, **A.2**	–	B Wet and dry	–	–	–

6 Marking

Fabrics shall be supplied with the following information, e.g. on a label or swing ticket:

a) the number and date of this British Standard, i.e. BS 2543:2004;

b) the designated product profile classification of the fabric as given in Clause **4**.

Annex A (normative)
Test methods for cut pile woven fabric and flocked fabrics not included in BS EN 14465:2003

NOTE See Table 3.

A.1 Method of test for pile tuft and/or fibre loss by reverse abrasion

Carry out the test in accordance with the test detailed in BS EN ISO 12947-2 with a pressure of 12 kPa ± 3 kPa, with the following modifications.

a) Interchange the positions of the fabric test specimens and the reference abradant. Mount the test specimens 150 mm square or 150 mm in diameter over the backing felt on the abrading table, with the face of each specimen in contact with the felt, and mount the 38 mm diameter pieces of reference abradant in the specimen holders over the disc of polyetherurethane foam in all cases.

b) Carry out the test for 5 000 cycles then remove the test specimens. Place them face downwards on a laboratory light-box or over a similar source of illumination. Assess the pile loss against the scale given in Table A.1

NOTE Removal of pile tufts is manifested by transmission of light through any holes produced.

c) Reverse the test specimens and assess the effect of the test on the face of the fabric against the scale given in Table A.1.

A.2 Method of test for scuffing (surface pile loss)

A.2.1 *General*

Carry out the test in accordance with BS 4655:1986 with the modifications shown in **A.2.2** to **A.2.5**.

A.2.2 *Principle*

The face side of a fabric, which is supported over a piece of reference abradant fabric is rubbed, under controlled conditions, by the edge of a metal disc. The test is intended to assess the tendency of all types of cut or non-loop pile upholstery to lose substantially complete lengths of pile from the surface of the fabric. To the extent that this tendency generally requires a harsh abrasive force from a relatively keen edged object, it often relates to minor unspecified abuse of the upholstery.

A.2.3 *Apparatus*

The finger of the testing device is replaced by a similar attachment containing a slot that is capable of accommodating a metal disc having the material properties and dimensions of an unused 2 pence coin (7), allowing the disc to project forward from the face of the attachment and to subtend an angle of 45° to the plane of the platform (see Figure A.1). The disc is rotated through 90° immediately on completion of a test on one specimen to present an unused quadrant. When four such tests have been carried out the disc may be reversed to enable four more tests to be performed. After eight tests have been completed, the disc is replaced by a new one.

A.2.4 *Preparation of test specimens*

Select warpwise and weftwise specimens such that in the case of the following types of fabric representative areas of pattern or pile are tested:

a) multi-patterned fabrics;

b) figured velvets;

c) fabrics containing mixtures of “V” and “W” tufts;

d) other varying types of pile.

In the case of figured velvets, representative areas include maximum available areas of uninterrupted pile and, in the case of velvets containing patterned and plain areas, parts of the pattern containing the largest areas of plain pile available are sampled, as well as patterned areas. Where more than one area needs to be tested, the test is carried out on three test specimens from each area.

A.2.5 *Procedure*

Mount the test specimen face side uppermost over a similar sized piece of reference abradant fabric as described in **3.3** of BS 4655:1986. Position the abradant fabric with its expanded PVC face uppermost, i.e. in contact with the test specimen. Position both the specimen and the abradant fabric with their longest edges parallel to the longitudinal axis of the platform of the testing device such that the direction of the lay of the pile is away from the tension wheel. Secure both fabrics at the mounting pins and tension wheel ends of the testing device. For fabrics other than flocked pile fabrics, after 30 rub cycles have been applied (i.e. 30 movements in each direction), raise the movable arm of the testing device to assess the effect on the pile.

For flocked pile fabrics, test both dry and wet specimens. Test dry specimens for 60 rub cycles.

Prepare wet specimens by immersing fresh dry specimens in water and allowing each to drain until it contains its own mass of water. Transfer the specimen immediately to the testing device and subject to 15 rub cycles. After testing, assess the specimens as indicated in Table A.1.

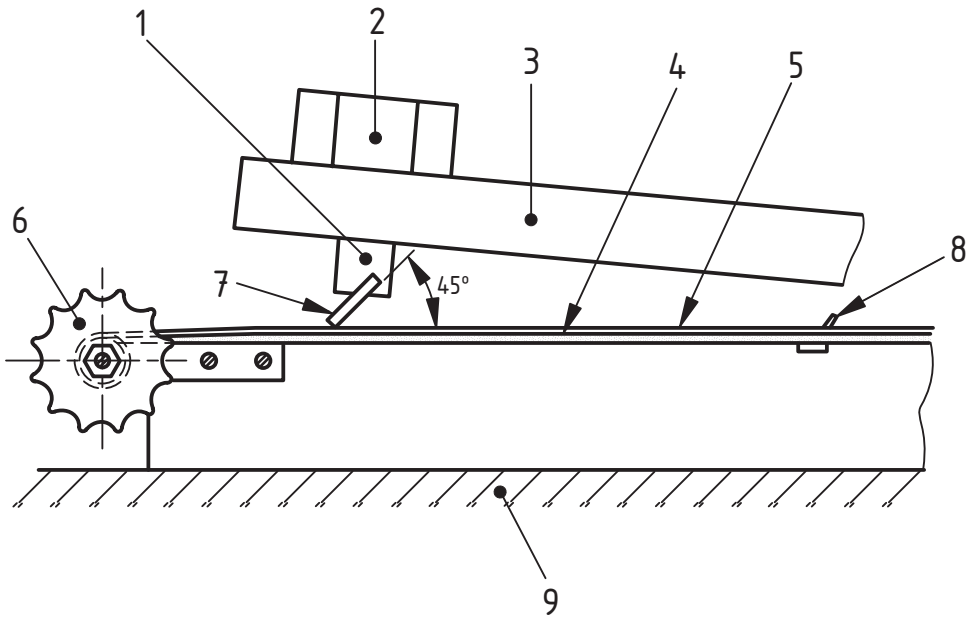
Table A.1 — Ratings for pile loss and for scuffing

Pile loss rating or scuffing rating	Description
A	No visible effect other than distortion of the surface and slight loss of fibre
B	Isolated single tufts of pile missing, giving rise to a pinholed type of appearance
C	Small discrete areas devoid of several adjacent tufts of pile and/or devoid of fibre, the latter revealing the base structure of the fabric
D	When tested for pile loss in accordance with **A.1**, a substantial area of pile and/or fibre removed in the tested area. When tested for scuffing in accordance with **A.2**, a substantial continuous band of pile and/or fibre removed along the line of test

A.3 Test report

Record the pile or fibre loss rating, with an indication of the test specimen direction (e.g. warpwise or weftwise) appropriate to each result. If a test result in one specific area of the sample is rated significantly higher than that in the remaining areas, mention it in the report. Additionally, in the case of patterned velvets, indicate in the report whether the loss of pile is restricted to, or is more noticeable on, specific areas of pattern.

NOTE In assessing the significance of the results, it should be noted that pile loss will occur more easily on test specimens which have lost pile fibre generally due to abrasive wear. Thus, a velvet with a relatively low abrasion test result (**A.1**) can lose pile tufts rather more quickly in use than one which is more resistant to attritive forms of abrasive wear.



Key

1 Finger
2 Weight piece
3 Movable arm
4 Reference abradant fabric
5 Test specimen
6 Tension wheel
7 Metal disc
8 Row of mounting pins
9 Platform

Figure A.1 — Arrangement of testing device for scuffing with test specimen in position

Bibliography

BS 3870-1:1991 (ISO 4915:1991), *Stitches and seams — Part 1: Classification and terminology of stitch types.*

BS 4723:2002, *Stretch covers for upholstered furniture — Specification.*

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