

Specification for

Compression, stiffness and labelling of anti-embolism hosiery

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Committees responsible for this British Standard

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- British Medical Association
- British Retail Consortium
- Consumer Policy Committee of BSI
- Department of Health
- Knitting Industries Federation Ltd.
- Malaysian Rubber Producers' Research Association
- National Association of Medical and Surgical Appliance Officers
- Surgical Appliance Manufacturers' Association
- Surgical Dressings Manufacturers' Association
- Textile Research Council (HATRA)
- Vascular Surgical Society of GB
- Coopted experts

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Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 References	1
3 Definitions	1
4 Compression	1
5 Durability of compression after repeated washing	1
6 Stiffness	1
7 Marking and labelling	2
Annex A (normative) Method of test for compression value and stiffness of anti-embolism hosiery	3
Figure A.1 — Compression testing machine	4
Figure A.2 — Back face of measurement head	5
Figure A.3 — Side view of jig mounted on the measurement head	6
Figure A.4 — Apparatus for calibrating the measurement head	7
Table A.1 — Girths of the adjustable former	5
Table A.2 — Positions for setting up garments for testing	7
List of references	Inside back cover

Foreword

This British Standard has been prepared under the direction of the Health Care Standards Policy Committee.

Anti-embolism hosiery is intended for use during surgical operations and on patients confined to bed, as a prophylaxis to prevent the formation of deep venous thrombosis. Anti-embolism hosiery may be less effective for non-ambulant patients not in bed. The garments are based on synthetic elastomeric yarns. Relief of the symptoms of some medical conditions may require the higher levels of compression supplied by medical compression hosiery specified in BS 6612.

The test method described in this British Standard for determining compressive capabilities of hosiery is based on the Mark II hose pressure tester which incorporates an adjustable flat-bed former. This method was selected after a series of laboratory tests, including a comparison with other methods and an extended interlaboratory trial of several testing machines. The advantages of this method were considered to be that calibration was straightforward, that the dimensions at which tests may be conducted could, within limits, be varied and that the test was rapid and convenient for manufacturers. Sufficient precision/reproducibility and repeatability were evident during the comparative tests to warrant adopting the method in this British Standard.

The standard is expected to provide a basis for further clinical and physiological evaluation of anti-embolism hosiery so that in the future the clinical efficacy of garments may be related more reliably to the compression which they exert in wear. The standard is not intended to imply that only garments with these particular qualities are those which are effective in a clinical disorder. It is expected that as a result of publication of this standard the clinical relevance of the features which have been identified will be defined more clearly.

Attention is drawn also to the method of test for non-prescriptive graduated support hosiery given in BS 7563.

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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, and describes Methods of test for, the compression and stiffness of anti-embolism hosiery. It also specifies labelling requirements.

2 References

2.1 Normative references

This British Standard incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on the inside back cover. Subsequent amendments to, or revisions of, any of these publications apply to this British Standard only when incorporated in it by updating or revision.

2.2 Informative references

This British Standard refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Definitions

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

3.1

anti-embolism hosiery

hosiery which, when worn on the leg, exerts graduated compression on the leg surface and is intended to reduce the incidence of deep venous thrombosis in non-ambulant patients

3.2

nominal compression value

a single nominal compression figure characterizing the compression performance of a garment at the ankle

NOTE The compression value is assigned by the manufacturer on the basis of measurements on similar garments and is equal to the compression which the garment is intended to exert at the ankle when worn on a leg of a designated size.

3.3

compression profile

the pressure exerted by the hosiery along the leg it is intended to fit

3.4

stiffness

a measure of the change in the compression exerted by a garment when the girth is increased or decreased from that designated by the manufacturer by an amount equivalent to a change in the size of the adjustable former of the compression testing machine by one position

NOTE See A.2.1.

3.5

normal measuring positions

the positions at the ankle, calf and thigh of a garment at which compression is to be measured

NOTE Testing of designated sizes is achieved by use of test equipment which simulates human leg dimensions. Details of the set-up procedure and the corresponding girths are given in Annex A.

4 Compression

When tested by the method described in Annex A:

- a) the compression value at the ankle shall be not less than 1.34 kPa¹⁾ (10 mmHg) and not more than 2.4 kPa (18 mmHg);
- b) the compression value at the calf shall be not more than 80 % of that at the ankle, and shall be not less than 1.07 kPa (8 mmHg) and not more than 1.87 kPa (14 mmHg);
- c) the compression value at the thigh, if present, shall be not more than 80 % of that at the calf;
- d) the actual compression at the ankle shall not differ by more than ± 20 % from the nominal compression value stated by the manufacturer [see 7.1 d)].

5 Durability of compression after repeated washing

After completing 30 washes in accordance with the wash procedure of BS 4923:1991 stated in the manufacturer's instructions [see 7.1 k)], and after drying flat as defined in BS 4923:1991, each measuring position of the garment shall retain at least 85 % of the compression which it exerted before this series of washes.

6 Stiffness

When tested by the method described in Annex A, the stiffness at any measuring position shall be not greater than 25 %.

¹⁾ 1 kPa = 7.5 mmHg.