BRITISH STANDARD

BS 4443-1: 1988

Incorporating Amendment Nos.1, 2, 3 and 4

Methods of test for

Flexible cellular materials —

Part 1: Method 4. Measurement of cell count

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Plastics Standards Committee (PLM/-) and the Rubber Standards Committee (RUM/-) to Technical Committee PLM/RUM/10, upon which the following bodies were represented:

British Plastics Federation
British Railways Board
British Rigid Urethane Foam Manufacturers' Association
British Rubber Manufacturers Association
Department of the Environment (Building Research Establishment)
Furniture Industry Research Association
Furniture, Timber and Allied Trades Union
Ministry of Defence
National Bedding Federation
Phenolic Foam Manufacturers Association
RAPRA Technology Ltd
Society of British Aerospace Companies Limited
Society of Motor Manufacturers and Traders Limited

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Foreword

This part of BS 4443 has been prepared under the direction of the Plastics Standards Committee and the Rubber Standards Committee as a revision of BS 4443-1:1979 which is withdrawn.

In this revision the methods of test have been realigned as far as possible with the methods agreed internationally and published by the International Organization for Standardization (ISO) (see Appendix B).

Particular attention is drawn in this revision to the minimum time permitted after manufacture before testing and to changes in the conditioning procedures. Attention is also drawn to BS 4443-2 and BS 4443-3 which include methods for measuring indentation hardness, creep and dynamic cushioning characteristics.

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Summary of pages

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1 Scope

This part of BS 4443 describes the following method of test for flexible cellular materials of polymeric origin:

Method 4. Measurement of cell count.

2 *Text deleted*

3 Methods 1A, IB and 1C. Measurement of dimensions of test specimens

Clause 3 superseded by BS EN ISO 1923:1995.

4 Method 2. Determination of apparent density

Clause 4 superseded by BS EN ISO 845:1995.

5 Methods 3A and 3B. Determination of tensile strength and elongation at break

Clause 5 superseded by BS EN ISO 1978:1998.

Figure 1. *Figure deleted*

Figure 2. *Figure deleted*

6 Method 4. Measurement of cell count

6.1 Introduction

Method 4 specifies the procedure for measuring the cell count of flexible cellular material.

Because of the variation in individual cell size, even in uniform cell structures, it is more convenient to report the number of cells per unit length rather than the actual cell size

6.2 Definition

For the purposes of this method of this Part of BS 4443, the following definition applies.

cell count
the number of cells per linear 25 mm of the flexible cellular material

6.3 Apparatus

6.3.1 *Cloth counting glass,* 25 mm.

6.4 Test specimen

The test specimen shall consist of any material that is free of skin and has a plane surface large enough to accommodate the counting glass.

Surfaces revealing a marked elongation of the cellular structure or striations shall not be measured unless specifically required.

6.5 Conditioning

Material shall not be tested less than 72 h after manufacture, unless, at either 16 h or 48 h after manufacture, it can be demonstrated that the cell count values obtained do not differ by more than ± 10 % from those obtained after 72 h. Testing is permitted at either 16 h or 48 h if, at the selected time, the above criteria have been satisfied.

Prior to the test, the test specimens shall be stored for at least 16 h under the following standard conditions:

23 ± 2 °C, 50 ± 5 % relative humidity.

NOTE This period can form the latter part of the period following manufacture.

6.6 Procedure

After conditioning as described in **6.5,** lay the test specimen on a flat, horizontal surface without strain and count the actual number of cells against the counting edge of the glass.

Where cell counts along and across the test specimen are important, make a count in each direction.

6.7 Test report

The report shall include the following:

a) a description of the cellular material;

b) the directions in which cell counts were made;

c) the cell count(s) (in number of cells per linear 25 mm);

d) the method used, i.e. method 4 of BS 4443-1:1988.

7 Methods 5A and 5B. Determination of compression stress-strain characteristics

Method 5A superseded by BS EN ISO 3386-1.
Method 5B superseded by BS EN ISO 3386-2.

8 Methods 6A and 6B. Determination of compression set

Clause 8 superseded by BS EN ISO 1856:1996.

Appendix A Text deleted

Appendix B Related ISO methods

Table 1 — Related ISO methods

BS 4443-1 Method	Method number	ISO methods which are technically related
Measurement of dimensions of test specimens	1A IB 1C	ISO 1923 ISO 1923 ISO 1923
Determination of apparent density	2	ISO 845
Determination of tensile strength and elongation at break	3A 3B	ISO 1798 No equivalent
Measurement of cell count	4	No equivalent
Determination of compression stress-strain characteristics	5A 5B	ISO 3386/1 ISO 3386/2
Determination of compression set	6A 6B	ISO 1856 (Method A) ISO 1856 (Method B)

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