BRITISH STANDARD

BS 7825 : Section 3.6 : 1997

Calibration of rubber and plastics test equipment

Part 3. Calibration schedules

Section 3.6 Dimensional properties

ICS 83.200

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee PRI/20, Accuracy of rubber and plastics test equipment, upon which the following bodies were represented:

British Rubber Manufacuturers' Association Ltd.
GAMBICA (BEAMA Ltd.)
Ministry of Defence
National Physical Laboratory
RAPRA Technology Ltd.

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Foreword

This Section of BS 7825 has been prepared by Technical Committee PRI/20.

In commercial practice it is necessary for the parties concerned in the manufacture or supply of materials or products to operate or agree upon specified performance requirements. Those performance requirements are verified by standardized methods of test. Test result variability is influenced by both test variability and product variability. As it is product variability which needs to be identified, test variability has to be kept to a minimum. An important element in the achievement of this reduced variability is the calibration of test instrumentation, to traceable standards, at acceptable intervals.

The use of this British Standard will encourage proper calibration and make it possible for all users and calibration laboratories to work to common procedures.

BS 7825 will comprise the following three Parts:

Part 1	*Principles and general requirements*
Part 2	*Calibration procedures*
Part 3	*Calibration schedules*

Part 3 will comprise 13 Sections, each of which will provide calibration schedules for specific areas of rubber or plastics testing, as follows:

Section 3.1	*Thermal properties*
Section 3.2	*Electrical properties*
Section 3.3	*Mechanical properties of plastics*
Section 3.4	*Mechanical properties of rubber*
Section 3.5	*Optical and weathering properties*
Section 3.6	*Dimensional properties*
Section 3.7	*Rheological properties*
Section 3.8	*Degradation and environmental properties*
Section 3.9	*Flammability characteristics*
Section 3.10	*Conditioning, sample and test piece preparation*
Section 3.11	*Rubber polymer identification and chemical properties*
Section 3.12	*Chemical properties of plastics*
Section 3.13	*Chemical properties of resins*

Compliance with a British Standard does not of itself confer immunity from legal obligations.

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.

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1 Scope

This Section of BS 7825 provides schedules for the calibration of a range of methods of test used for the evaluation and investigation of the dimensional properties of plastics and rubber materials.

2 References

2.1 Normative references

This Section of BS 7825 incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on page 10. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the publications apply to this Section of BS 7825 only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

2.2 Informative references

This Section of BS 7825 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 Section of BS 7825 the definitions, where relevant, given in BS EN 30012-1, BS 5233, PD 6461 : Part 1, BS 4778 and ISO Guide 30 apply.

4 Inspection

Before any calibration is undertaken, the condition of the items to be calibrated shall be ascertained by inspection and recorded on any calibration report or certificate. It shall be reported whether calibration is made in the 'as-received' condition or after rectification of any abnormality or fault.

It shall be ascertained that the apparatus is generally fit for the intended purpose, including any requirements specified as approximate and hence not formally calibrated. If such parameters could change, then the need for periodic checks shall be written into the detailed calibration procedures.

5 Schedules

The calibration schedules given in this Section of BS 7825 have been compiled by listing all of the parameters specified in the relevant test method cited, together with the specified requirement. A parameter and requirement may relate to the main test apparatus, part of that apparatus or to an ancillary apparatus necessary for the test. In some cases tolerances not given in the test method standard have been added.

For each parameter a calibration procedure is indicated by reference to Part 2 of BS 7825, to another publication or to a procedure particular to that test method which is detailed.

The verification frequency for each parameter is given by a code letter. The code letters used in the schedules are:

Procedure:	P	Particular procedure
	R	Use of certified reference material
	C	Requirement to be confirmed but no measurement
Requirement:	*	Tolerance not specified in the test method standard
Verification:	N	Initial verification only
	S	Standard interval as given in Part 1 of BS 7825
	P	Particular interval given in the standard
	U	In use

In use checks additional to the schedule are listed separately.

A list is given of reference materials either required by the calibration schedule or otherwise required by the test method.

Reagents, including cleaning materials, are listed. In some cases a reagent may be considered as a particular type of reference material.

In addition to the items listed, some standards assume the use of 'normal' laboratory apparatus, e.g. timers, beakers etc. These may need calibrating in accordance with the appropriate procedure given in Part 2 of BS 7825. Also there may be items specified in the relevant cited standard which have a dimension, for example a 250 ml flask. Where the size has no particular significance, other than convenience of use, these items will not require to be calibrated.

Most standards for the testing of materials require the test piece to be conditioned. This implies the use of a thermometer and possibly a hygrometer, both of which will require calibration. Standard conditioning and test temperatures and humidities cited in the relevant standard have not been repeated.

Test piece dimensions are usually specified. This implies the use of dimensional measuring instruments which will require calibration. Test piece dimensions cited in the relevant standard have not been repeated.

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