SRI LANKA STANDARD 1330 : 2008
ISO 13362 : 2000

METHOD FOR THE DETERMINATION OF COMPRESSION SET UNDER HUMID CONDITIONS FOR FLEXIBLE CELLULAR POLYMERIC MATERIALS

SRI LANKA STANDARDS INSTITUTION

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SLS 1330 : 2008
ISO 13362 : 2000

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Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This standard does not purport to include all the necessary provisions of a contract.

SRI LANKA STANDARD
METHOD FOR THE DETERMINATION OF COMPRESSION SET UNDER HUMID CONDITIONS FOR FLEXIBLE CELLULAR POLYMERIC MATERIALS

FOREWORD

This Sri Lanka Standard was approved by the Sectoral Committee on Chemical and Polymer Technology and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2008-02-27.

This Standard is identical with ISO 13362 : 2000 Flexible cellular polymeric materials – Determination of compression set under humid conditions, published by the International Organization for Standardization.

The text of the International Standard has been accepted as suitable for publication, without deviation, as a Sri Lanka Standard. However, certain terminology and conventions are not identical with those used in Sri Lanka Standards. Attention is therefore drawn to the following :

Terminology and Conventions :

a) Wherever the words 'International Standard' appear referring to a particular standard. They should be interpreted as "Sri Lanka Standard".

b) The comma has been used throughout as a decimal marker. In Sri Lanka Standards it is the current practice to use the full point at the base as the decimal marker.

c) Wherever page numbers are quoted, they are ISO/IEC page numbers.

Cross References

International Standard	**Corresponding Sri Lanka Standard**
ISO 1923 Cellular plastics and rubbers – Determination of linear dimensions	No Corresponding Sri Lanka Standard

INTERNATIONAL STANDARD

ISO 13362

First edition
2000-11-01

Flexible cellular polymeric materials — Determination of compression set under humid conditions

Matériaux polymères alvéolaires souples — Détermination de la déformation rémanente après compression dans des conditions humides

Reference number
ISO 13362:2000(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 13362 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 4, *Products (other than hoses)*.

INTERNATIONAL STANDARD **ISO 13362:2000(E)**

Flexible cellular polymeric materials — Determination of compression set under humid conditions

WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory conditions.

1 Scope

This International Standard specifies a method for determining the compression set of flexible cellular materials under humid conditions.

This method consists of maintaining the test piece under specified conditions of time, temperature, humidity and constant compressive strain and determining the effect on the thickness of the test piece after a specified recovery period.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 1923:1981, *Cellular plastics and rubbers — Determination of linear dimensions*.

3 Term and definition

For the purposes of this International Standard, the following term and definition applies.

3.1
compression set
difference between the initial thickness and the final thickness of a test piece of the cellular material after compression for a given time at a given temperature and after a given recovery time, this difference being referred to the initial thickness

4 Principle

A test piece is maintained for a specified time at a specified temperature and relative humidity under constant deflection and the effect on the thickness of the test piece noted after release.

5 Apparatus

5.1 Stainless-steel compression device, consisting of two flat plates having dimensions larger than those of the test pieces, with spacers and a clamping mechanism such that the plates are held parallel to each other and the distance between the plates is adjustable to the required compression of the test pieces.

5.2 Dial gauge, as specified in subclause 3.1 of ISO 1923:1981.

5.3 Air-circulating oven/humidity cabinet, hermetically sealed and capable of maintaining a temperature of (40 ± 1) °C and a relative humidity of 95 % to 100 %.

6 Test pieces

The test pieces shall be parallelepipeds, with or without skin, with square load-bearing surfaces of side (100 ± 2) mm and with a thickness of (50 ± 1) mm. Three test pieces shall be tested. These shall not be taken close to the edges or ends of the sample.

7 Conditioning

Material shall not be tested for at least 72 h after manufacture, unless, at either 16 h or 48 h after manufacture, it can be demonstrated that the compression set 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 pieces shall be conditioned for at least 16 h in one of the following atmospheres:

(23 ± 2) °C and (50 ± 5) % relative humidity;

(27 ± 2) °C and (65 ± 5) % relative humidity.

NOTE This storage period can form the final part of the period following manufacture.

8 Procedure

After conditioning in accordance with clause 7, measure the initial thickness of each test piece to the nearest 0,1 mm as described in subclause 4.3 of ISO 1923:1981.

Place a test piece in the compression device and compress it by (70 ± 0,5) % of its original thickness. Within 5 min of compression, place the compressed test piece in the oven/humidity cabinet at (40 ± 1) °C and 95 % to 100 % RH for 22^{+2}_{0} h.

Remove the compression device from the oven/humidity cabinet and, within 1 min, remove the test piece from the device and place it on a wooden surface. Allow the test piece to recover for 15 min in the same atmosphere as was used for conditioning and then remeasure the thickness as described above.

9 Calculation

Calculate the percentage compression set under humid conditions, CSH, from the following equation:

$$\mathrm{CSH} = \frac{d_0 - d_\mathrm{r}}{d_0} \times 100$$

where

d_0 is the original thickness, in millimetres, of the test piece;

d_r is the thickness, in millimetres, of the test piece after recovery.

Report the median value of the results obtained.

10 Precision

No precision data are available.

11 Test report

The test report shall include the following information:

a) a reference to this International Standard;

b) a description of the material;

c) the temperature and humidity at which the test pieces were conditioned;

d) the location of the test pieces in the product, and the predominant direction of the cellular structure, if any;

e) the location and number of surfaces with skin, if any;

f) the median value of the compression set under humid conditions, in percent;

g) any deviations from this International Standard;

h) the date of the test.

ISO 13362:2000(E)

ICS 83.100

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SRI LANKA STANDARDS INSTITUTION

The Sri Lanka Standards Institution (SLSI) is the National Standards Organization of Sri Lanka established under the Sri Lanka Standards Institution Act No. 6 of 1984 which repealed and replaced the Bureau of Ceylon Standards Act No. 38 of 1964. The Institution functions under the Ministry of Science & Technology.

The principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote standardization and quality control by educational, consultancy and research activity.

The Institution is financed by Government grants, and by the income from the sale of its publications and other services offered for Industry and Business Sector. Financial and administrative control is vested in a Council appointed in accordance with the provisions of the Act.

The development and formulation of National Standards is carried out by Technical Experts and representatives of other interest groups, assisted by the permanent officers of the Institution. These Technical Committees are appointed under the purview of the Sectoral Committees which in turn are appointed by the Council. The Sectoral Committees give the final Technical approval for the Draft National Standards prior to the approval by the Council of the SLSI.

All members of the Technical and Sectoral Committees render their services in an honorary capacity. In this process the Institution endeavours to ensure adequate representation of all view points.

In the International field the Institution represents Sri Lanka in the International Organization for Standardization (ISO), and participates in such fields of standardization as are of special interest to Sri Lanka.

Printed at the Sri Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.

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The Sri Lanka Standards Institution is the owner of the registered certification mark shown below. Beneath the mark, the number of the Sri Lanka Standard relevant to the product is indicated. This mark may be used only by those who have obtained permits under the SLS certification marks scheme. The presence of this mark on or in relation to a product conveys the assurance that they have been produced to comply with the requirements of the relevant Sri Lanka Standard under a well designed system of quality control inspection and testing operated by the manufacturer and supervised by the SLSI *which includes surveillance inspection of the factory, testing of both factory and market samples.*

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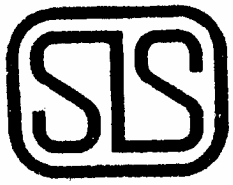

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