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Rubber, vulcanized or thermoplastic — Determination of density

AMENDMENT 1: Precision data

*Caoutchouc vulcanisé ou thermoplastique — Détermination de la
masse volumique*

AMENDEMENT 1: *Données de fidélité*



Reference number
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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
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Foreword

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The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to ISO 2781:2008 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 2, *Testing and analysis*.

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Rubber, vulcanized or thermoplastic — Determination of density —

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At the end of Clause 11, add the following new Clause 12:

“12 Precision

See Annex A.”

Renumber the old Clause 12 as Clause 13.

At the end of the text

Add the following annex:

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Annex A (informative)

Precision

A.1 Background

An interlaboratory test programme (ITP) for the determination of the precision of the density measurement method specified in this International Standard was conducted in 2008 using the precision procedures and guidelines described in ISO/TR 9272:2005, *Rubber and rubber products — Determination of precision for test method standards*.

A.2 Details of ITP

A.2.1 A total of 15 laboratories participated in the ITP. However, test results were reported by only 13 of the laboratories. A total of four materials or compounds were used, designated compounds A, B, C and D in increasing magnitude of density from 0,97 to 1,86. The ITP was conducted over a period of four sequential weeks. On a specified day in each of these four weeks, five individual density measurements were made by each laboratory on each of the four materials. A test result was taken as the mean of the five individual measurements. The analysis of the data was conducted on the basis of these test results.

A.2.2 Two separate determinations of repeatability and reproducibility were conducted. The results from weeks 1 and 2 were used for repeatability and reproducibility evaluation No. 1 (i.e. these results were obtained by the typical day 1 vs day 2 test protocol specified in ISO/TR 9272). The results of weeks 3 and 4 were used in the same way for repeatability and reproducibility evaluation No. 2. The ISO/TR 9272:2005 option 1 outlier deletion procedure was used.

A.2.3 The precision results as determined by this ITP may not be applied to acceptance or rejection testing of any group of materials or products without documentation stating that the results of this precision evaluation actually apply to the products or materials tested.

A.3 Precision results

A.3.1 The precision results are given in Table A.1. General statements for the use of the precision results are also given. The results listed in Table A.1 are the mean results for evaluations 1 and 2 as indicated above (i.e. for all four weeks). These are given in terms of both the absolute precision, r and R , and the relative precision, (r) and (R) .

A.3.2 Repeatability: The repeatability, or local domain precision, of the test method has been established for each material as the values given in Table A.1. Two individual test results (obtained by the proper use of this International Standard) that differ by more than the tabulated values of r , in measurement units, or (r) , in percent, should be considered suspect, i.e. to have come from different populations. Such a decision suggests that appropriate investigative action be taken.

A.3.3 Reproducibility: The reproducibility, or global domain precision, for the test method has been established for each material as the values given in Table A.1. Two individual test results obtained in different laboratories (by the proper use of this International Standard) that differ by more than the tabulated values of R , in measurement units, or (R) , in percent, should be considered suspect, i.e. to have come from different populations. Such a decision suggests that appropriate investigative action be taken.