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DIN ISO 4649

ICS 83.060

Supersedes
DIN ISO 4649:2014-03

Rubber, vulcanized or thermoplastic – Determination of abrasion resistance using a rotating cylindrical drum device (ISO 4649:2017), English translation of DIN ISO 4649:2021-06

Elastomere oder thermoplastische Elastomere –
Bestimmung des Abriebwiderstandes mit einem Gerät mit rotierender Zylindertrommel (ISO 4649:2017),
Englische Übersetzung von DIN ISO 4649:2021-06

Caoutchouc vulcanisé ou thermoplastique –
Détermination de la résistance à l'abrasion à l'aide d'un dispositif à tambour tournant (ISO 4649:2017),
Traduction anglaise de DIN ISO 4649:2021-06

Document comprises 28 pages

Translation by DIN-Sprachendienst.

In case of doubt, the German-language original shall be considered authoritative.

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A comma is used as the decimal marker.

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National foreword

This document (ISO 4649:2017) has been prepared by Technical Committee ISO/TC 45 “Rubber and rubber products”, Subcommittee SC 2 “Testing and analysis” (Secretariat: JISC, Japan).

The responsible German body involved in its preparation was *DIN-Normenausschuss Materialprüfung* (DIN Standards Committee Materials Testing), Working Committee NA 062-04-34 AA “Test procedures for physical properties of rubber”.

The trade names given in this document represent examples of suitable commercially available products. This is solely intended as information for users of this standard and no way represents DIN's endorsement of the products named.

Users of this standard should take note of the following:

This standard contains the technical content of DIN 53516:1987-06, which had been replaced by DIN ISO 4649:2006-11. The method specified in DIN 53516 corresponds to Method A specified here, where standard reference compound No. 1 is used and the abrasion is expressed as the relative volume loss.

In addition to the determination of the mass loss of a non-rotating test piece, now designated as Method A, a Method B involving rotating test pieces has now been specified.

What was termed the “standard elastomer” is now called the standard reference compound No. 1. A second standard elastomer is now used which is called the standard reference compound No. 2. As a third alternative, users may use their own reference compound.

Results may now be expressed in two ways. What was previously termed “wear” is now called “relative volume loss”. The “abrasion resistance index” can also be used to express results. A low relative volume loss corresponds to a high abrasion resistance index.

The method used (A or B), the reference elastomer used and the indication of the results (ΔV_{rel} oder ARI) are agreed and stated in the test report.

Re 9.2: It has been shown that it is not sufficient to perform three test runs with the reference compound before the test series and three after the test series. Five test runs before and after the test series have proven adequate, particularly in cases of dispute.

Re 10.1: Subclause 10.1 and subclause 10.2 contradict each other. It is not possible to determine the average value of the mass loss of the tested elastomer, Δm_{t} and the average value of the relative volume loss. The loss of mass of the tested elastomer of a sample results in a loss of volume for each sample. This results in the average value of the relative volume loss. The same applies to the abrasion resistance index.

Re B.2.4.4: The hardness measurement method described in ISO 4649:2017 is included in ISO 48-4.

The DIN documents corresponding to the documents referred to in this document are as follows:

ISO 5725-2	DIN ISO 5725-2
ISO 7619-1*	DIN ISO 7619-1
ISO 23529	DIN ISO 23529

For current information on this document, please go to DIN's website (www.din.de) and search for the document number in question.

Amendments

This standard differs from DIN ISO 4649:2014-03 as follows:

a) normative references have been updated;

b) details regarding the relative volume loss (3.2) have been added;

c) the text has been updated for a better understanding.

Previous editions

DIN 53516: 1943x-03, 1964-06, 1977-01, 1987-06
DIN ISO 4649: 2006-11, 2014-03

* ISO 7619-1 has been replaced by ISO 48-4. DIN ISO 7619-1 has been replaced by DIN ISO 48-4 correspondingly.