
Rubber, vulcanized — Determination of stress in tension upon heating

*Caoutchouc vulcanisé — Détermination de la contrainte en traction
lors du chauffage*

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 12493:2017

<https://standards.iteh.ai/catalog/standards/iso/3724b74b-d565-4583-be18-2712861aecc0/iso-12493-2017>



iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

ISO 12493:2017

<https://standards.iteh.ai/catalog/standards/iso/3724b74b-d565-4583-be18-2712861aecc0/iso-12493-2017>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Apparatus	2
5.1 Thermal-stress testing machine.....	2
5.2 Temperature-controlled chamber.....	3
5.3 Thickness- and width-measuring devices.....	3
6 Calibration	3
7 Test piece	4
7.1 Dimensions.....	4
7.2 Number of test pieces.....	4
7.3 Time lapse between moulding and testing.....	4
7.4 Conditioning.....	4
8 Test conditions	4
8.1 Temperature.....	4
8.2 Pre-strain.....	5
9 Procedure	5
10 Expression of results	5
11 Precision	7
12 Test report	7
Annex A (normative) Calibration schedule	9
Bibliography	11

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 2, *Testing and analysis*.

This second edition cancels and replaces the first edition (ISO 12493:2011), of which it constitutes a minor revision to update the normative references in [Clause 2.7](#).

<https://standards.iteh.ai/catalog/standards/iso/3724b74b-d565-4583-be18-2712861aecc0/iso-12493-2017>

Introduction

Vulcanized rubber held under a constant stress will contract as the test temperature is raised, while a test piece held under a constant strain will develop an increased stress. These are features of the Gough-Joule effect in rubber and, unless they are taken into account at the design stage, any resulting changes in forces and dimensions can affect the performance of some products, such as rotary seals, used at high temperatures and high strains (see Reference [1]).

This document describes a test method for the determination of the change in tensile stress that results from an increase in test temperature.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 12493:2017](https://standards.iteh.ai/catalog/standards/iso/3724b74b-d565-4583-be18-2712861aecc0/iso-12493-2017)

<https://standards.iteh.ai/catalog/standards/iso/3724b74b-d565-4583-be18-2712861aecc0/iso-12493-2017>

