INTERNATIONAL STANDARD

ISO 10960

Second edition
2017-11

Rubber and plastics hoses — Assessment of ozone resistance under dynamic conditions

Tuyaux en caoutchouc et en plastique — Évaluation de la résistance à l'ozone dans des conditions dynamiques

Reference number
ISO 10960:2017(E)

© ISO 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**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Principle **1**
5 Apparatus **1**
6 Test pieces **2**
6.1 Type of test piece 2
6.2 Number of test pieces 2
7 Conditioning of test pieces **2**
8 Test conditions **2**
9 Procedure **2**
10 Test report **3**

© ISO 2017 – All rights reserved

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 1, *Rubber and plastics hoses and hose assemblies*.

This second edition cancels and replaces the first edition (ISO 10960:1994), of which it constitutes a minor revision. The changes compared to the previous edition are as follows:

— Clause 2 has been updated: ISO 471 has been deleted and replaced by ISO 23529, and the latest edition of ISO 1431-1 has been cited;

— 5.2 and Clause 7 have been amended to cite the most recent pertinent standards.

© ISO 2017 – All rights reserved

Rubber and plastics hoses — Assessment of ozone resistance under dynamic conditions

1 Scope

This document specifies a method of assessing the resistance of hoses to the deleterious effects of atmospheric ozone under dynamic conditions. It is applicable to hoses with bore diameters up to and including 25 mm.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1431-1:2012, *Rubber, vulcanized or thermoplastic — Resistance to ozone cracking — Part 1: Static and dynamic strain testing*

ISO 8330, *Rubber and plastics hoses and hose assemblies — Vocabulary*

ISO 23529, *Rubber — General procedures for preparing and conditioning test pieces for physical test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8330 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

4 Principle

The cover of a hose in a crescent position during reverse bending is exposed to ozone and examined periodically for cracking.

5 Apparatus

All apparatus placed in the test cabinet shall be made from materials which do not absorb or decompose ozone.

5.1 Ozone cabinet, with apparatus for generating ozone and monitoring and controlling the ozone concentration as described in ISO 1431-1.

5.2 Test piece holder, as shown in Figure 1, with means of carrying out flexing at the required frequency.

Details given in ISO 1431-1:2012, 5.6, shall be followed.

© ISO 2017 – All rights reserved