



NSAI
Standards

Irish Standard
I.S. EN ISO 10960:2018

Rubber and plastics hoses - Assessment of ozone resistance under dynamic conditions (ISO 10960:2017)

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I.S. EN ISO 10960:2018

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National Foreword

I.S. EN ISO 10960:2018 is the adopted Irish version of the European Document EN ISO 10960:2018, Rubber and plastics hoses - Assessment of ozone resistance under dynamic conditions (ISO 10960:2017)

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EUROPEAN STANDARD

EN ISO 10960

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2018

ICS 23.040.70

Supersedes EN ISO 10960:1996

English Version

Rubber and plastics hoses - Assessment of ozone resistance under dynamic conditions (ISO 10960:2017)

Tuyaux en caoutchouc et en plastique - Évaluation de la résistance à l'ozone dans des conditions dynamiques (ISO 10960:2017)

Gummi- und Kunststoffschläuche - Gummi- und Kunststoffschläuche - Beurteilung der Ozonbeständigkeit unter dynamischen Bedingungen (ISO 10960:2017)

This European Standard was approved by CEN on 5 December 2017.

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European foreword

This document (EN ISO 10960:2018) has been prepared by Technical Committee ISO/TC 45 “Rubber and plastics hoses and hose assemblies” in collaboration with Technical Committee CEN/TC 218 “Rubber and plastics hoses and hose assemblies” the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2018, and conflicting national standards shall be withdrawn at the latest by August 2018.

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

This document supersedes EN ISO 10960:1996.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 10960:2017 has been approved by CEN as EN ISO 10960:2018 without any modification.

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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*



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ISO 10960:2017(E)

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).

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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.

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.

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