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NSAI Standards

Irish Standard
I.S. EN ISO 8031:2020

# Rubber and plastics hoses and hose assemblies - Determination of electrical resistance and conductivity (ISO 8031:2020)

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**I.S. EN ISO 8031:2020**

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NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN ISO 8031

July 2020

ICS 23.040.70

Supersedes EN ISO 8031:2009

English Version

# Rubber and plastics hoses and hose assemblies - Determination of electrical resistance and conductivity (ISO 8031:2020)

Tuyaux et flexibles en caoutchouc et en plastique - Détermination de la résistance et de la conductivité électriques (ISO 8031:2020)

Gummi- und Kunststoffschläuche und Schlauchleitungen - Bestimmung des elektrischen Widerstands und der elektrischen Leitfähigkeit (ISO 8031:2020)

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Ref. No. EN ISO 8031:2020 E

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# Contents

Page

**European foreword** ..... **3**

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# European foreword

This document (EN ISO 8031:2020) has been prepared by Technical Committee ISO/TC 45 "Rubber and rubber products" 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of an identical text or by endorsement, at the latest by January 2021, and conflicting national standards shall be withdrawn at the latest by January 2021.

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INTERNATIONAL STANDARD

# ISO 8031

Fourth edition
2020-06

# Rubber and plastics hoses and hose assemblies — Determination of electrical resistance and conductivity

*Tuyaux et flexibles en caoutchouc et en plastique — Détermination de la résistance et de la conductivité électriques*

Reference number
ISO 8031:2020(E)

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# Contents

Page

**Foreword** ... **iv**

**Introduction** ... **v**

**1 Scope** ... **1**

**2 Normative references** ... **1**

**3 Terms and definitions** ... **1**

**4 Measurement of resistance of conductive, antistatic and non-conductive hoses** ... **1**
- 4.1 General ... 1
- 4.2 Apparatus ... 1
  - 4.2.1 Test instruments ... 1
  - 4.2.2 Electrodes and contacts ... 2
- 4.3 Preparation and cleaning for the test ... 3
- 4.4 Conditioning ... 4
- 4.5 Procedure for hoses with conducting lining (on full hose length) ... 4
- 4.6 Procedure for hoses with conducting cover ... 4
  - 4.6.1 Method for full hose lengths ... 4
  - 4.6.2 Method for test pieces as tested in the laboratory ... 5
- 4.7 Procedure for hoses with conducting compounds throughout ... 6
  - 4.7.1 Method for hoses up to 6 m in length ... 6
  - 4.7.2 Method for hoses over 6 m in length ... 6
- 4.8 Hose assemblies fitted with metal end fittings ... 6
- 4.9 Test procedure to determine the electrical resistance through the wall of hoses and hose assemblies ... 7
  - 4.9.1 General ... 7
  - 4.9.2 Test procedure for hoses (without end fittings) ... 7
  - 4.9.3 Test procedure for hose assemblies with metallic end fittings but without an internal wire helix in contact with the end fittings ... 8

**5 Measurement of electrical continuity between metal end fittings of hose assemblies** ... **10**

**6 Measurement of electrical discontinuity of hose assemblies** ... **10**

**7 Measurement of electrical resistance of a hose assembly lining (conductive or static dissipating) or hose assembly cover (conductive or static dissipating) in contact with the metal end fitting** ... **11**
- 7.1 General ... 11
- 7.2 Apparatus ... 11
- 7.3 Preparation and cleaning for the test ... 11
- 7.4 Conditioning ... 11
- 7.5 Test procedure ... 11

**8 Test report** ... **13**

**Annex A** (informative) **Recommended terminology and limits for electrical conductivity and resistance** ... **15**

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# Foreword

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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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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 fourth edition cancels and replaces the third edition (ISO 8031:2009), of which it constitutes a minor revision.

The main change compared to the previous edition is that the normative references have been updated.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.


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# Introduction

This edition of ISO 8031 addresses the problems encountered in field testing and during product acceptance tests in a production facility in following the test procedures specified in ISO 8031:1993 and a more practical approach is suggested. Also, a test procedure for determining electrical continuity between the end fittings of a hose assembly without actually measuring the resistance has been introduced. This test is frequently carried out in the field and in the factory when the product standard does not require the exact electrical resistance to be measured, but only requires verification of electric conductivity between both metal end fittings.

Special test methods to determine the electrical resistance through the hose wall (now required in some product standards for hoses used in explosive atmospheres) have been added.

Some test methods which have been a standard practice in the hose industry for some time have now been included, as have several new methods to determine the ability of a hose assembly (with metal end fittings) to dissipate static electric charges when the metal end fitting is connected to earth. A total of four new explanatory sketches are included. The hose and hose assembly product standard applicable will have to specify which method is most suitable for the purpose of verification of the required property.

Annex A, an amended version of ISO 8330:2007, Annex A, has been included.

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# Rubber and plastics hoses and hose assemblies — Determination of electrical resistance and conductivity

## 1 Scope

This document specifies electrical test methods for rubber and plastics hoses, tubing and hose assemblies to determine the resistance of conductive, antistatic and non-conductive hoses and the electrical continuity or discontinuity between metal end fittings.

All the test methods described for rubber hoses in this document can also be applied to plastics hoses.

## 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 2878, *Rubber, vulcanized or thermoplastic — Antistatic and conductive products — Determination of electrical resistance*

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

## 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 Measurement of resistance of conductive, antistatic and non-conductive hoses

### 4.1 General

Rubber hoses may have a conducting lining only or a conducting cover only, or may be manufactured from conducting rubber compounds throughout. A method of test is specified for each of the three possible types of construction.

### 4.2 Apparatus

The following apparatus is required and shall be basically as described in ISO 2878.

#### 4.2.1 Test instruments

**4.2.1.1** To determine the resistance of conductive, antistatic and non-conductive hose[1)], the test should preferably be made with an instrument specifically designed for measuring insulation resistance, having a nominal open-circuit voltage of 500 V d.c., or with any other instrument known to give comparable results. The instrument shall be sufficiently accurate to determine the resistance to within ±10 % unless

1) See ISO 8330 and Annex A for details of construction.

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