



**International
Standard**

ISO 8028

**Rubber and/or plastics hoses and
hose assemblies for airless paint
spraying — Specification**

*Tuyaux et flexibles en caoutchouc et/ou en plastique pour
pulvérisation (AIRLESS) des peintures — Spécifications*

**Fourth edition
2024-07**

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Contents

	Page
Foreword.....	iv
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 Types of hose and hose assemblies.....	1
5 Construction and materials.....	2
6 Dimensions and tolerances.....	2
7 Performance requirements for finished hose.....	2
7.1 Adhesion requirements.....	2
7.2 Ultraviolet resistance (plastics cover only).....	3
7.3 Resistance to ozone (rubber cover only).....	3
8 Performance requirements for finished hose and hose assemblies.....	3
8.1 Hydrostatic requirements.....	3
8.2 Impulse test requirements.....	3
8.3 Electrical-continuity requirements.....	3
9 Physical requirements of lining for hose only.....	3
10 Frequency of testing.....	4
11 Test report.....	4
12 Marking.....	4
13 Recommendations for packaging and storage.....	5
Annex A (normative) Test frequency for type tests and routine tests.....	6
Bibliography.....	7

[ISO 8028:2024](https://standards.iteh.ai/catalog/standards/iso/dded2bd8-b52c-49ee-a76f-4f6a7130f0ee/iso-8028-2024)

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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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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For an explanation of 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 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*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 218, *Rubber and plastics hoses and hose assemblies*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 8028:2017), which has been technically revised.

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The main changes are as follows:

- [subclause 8.1](#) and Table A.2 (merged with [Table A.1](#)) have been re-written to clarify the conditions for the number of test samples;
- [subclause 8.2](#) has been re-written to make appropriate minimum bend radius and to confirm the Electrical-continuity requirements after the impulse test;
- [subclause 8.3](#) has been re-written to cite appropriate subclauses in ISO 8031;
- in [Clause 12](#), year of publication has been deleted, and the unit of working pressure to MPa as a main unit has been changed;
- Annex B has been deleted;
- 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.

Rubber and/or plastics hoses and hose assemblies for airless paint spraying — Specification

WARNING — Persons using this document should be familiar with normal laboratory practice. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices.

1 Scope

This document specifies the requirements for four types of hose and hose assemblies for use in airless paint spraying. The four types are differentiated by burst pressure and operating temperature, and can be constructed from rubber or plastic materials, or a combination of rubber and plastic material.

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 1402, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing*

ISO 1817:2024, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 6803, *Rubber or plastics hoses and hose assemblies — Hydraulic-pressure impulse test without flexing*

ISO 7326:2016, *Rubber and plastics hoses — Assessment of ozone resistance under static conditions*

ISO 8031:2020, *Rubber and plastics hoses and hose assemblies — Determination of electrical resistance and conductivity*

ISO 8033, *Rubber and plastics hoses — Determination of adhesion between components*

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

ISO 30013:2011, *Rubber and plastics hoses — Methods of exposure to laboratory light sources — Determination of changes in colour, appearance and other physical properties*

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 <https://www.electropedia.org/>

4 Types of hose and hose assemblies

Four types of hose and hose assemblies are specified, as follows:

- Type A: Assemblies designed for a maximum working pressure of 20 MPa (200 bar), intended for spraying paints containing solvents at temperatures from -20 °C to $+50\text{ °C}$;

- Type B: Assemblies designed for a maximum working pressure of 36 MPa (360 bar), intended for spraying paints containing solvents at temperatures from -20 °C to +50 °C;
- Type C: Assemblies designed for a maximum working pressure of 20 MPa (200 bar), intended for spraying paints containing solvents at temperatures from -20 °C to +80 °C;
- Type D: Assemblies designed for a maximum working pressure of 36 MPa (360 bar), intended for spraying paints containing solvents at temperatures from -20 °C to +80 °C.

5 Construction and materials

The hose for use in assemblies shall consist of a smooth seamless lining of rubber or plastics material, a reinforcement of either wire or textile and a cover of rubber or plastics material. A hose with a plastic tube and a rubber cover can also be used.

The hose construction shall contain an electrically conductive element (which can have a conductive lining or cover or bonding wires) capable of being connected to the end fittings to ensure compliance with the electrical requirements as specified in 8.3 throughout the expected life of the hose assembly. The hoses shall be marked either Ω (when conductive compounds are used) or M when bonding wires are used.

The hose assembly shall have permanent couplings. The couplings shall be electrically conducting and connected to the conductive element constructed in the hose. Only couplings that have been used on assemblies that have successfully met the requirements of 8.1, 8.2 and 8.3 shall be used.

6 Dimensions and tolerances

The inside diameters and tolerances shall be in accordance with the values given in Table 1.

Table 1 — Diameters and tolerances

Dimensions in millimetres

Inside diameter	Tolerance
3,2	±0,5
4	
5	
6,3	±0,75
8	
9,5	
12,5	

7 Performance requirements for finished hose

7.1 Adhesion requirements

The test shall be carried out in accordance with ISO 8033. The adhesion between the lining and inner lamination and the cover and the outer lamination shall be not less than 0,8 kN/m for hoses with an inner diameter of ≤ 20 mm, and 0,9 kN/m for hoses with an inner diameter of > 20 mm.

With hoses that use a plastic lining, the adhesion should be measured between the plastic lining and the rubber tie gum and the reinforcement. The rubber layer shall adhere continuously to the plastics lining and should have a value not less than 0,8 kN/m to the reinforcement.

Three samples of hose should be tested per production run.