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**Rubber and plastics hoses and hose assemblies, wire or textile reinforced types with working pressure equal or above 70 MPa (700 bar) — Specification**

*Tuyaux et flexibles en caoutchouc et en plastique, types à armature métallique ou textile pour pression de service supérieure ou égale à 70 MPa (700 bar) — Spécifications*



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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 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](http://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](http://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 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](http://www.iso.org/iso/foreword.html).

The committee responsible for this document is ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 1, *Rubber and plastics hoses and hose assemblies*.

This first edition of ISO 23384 cancels and replaces ISO 19385:2017, which has been technically revised. It also incorporates the Amendment ISO 19385:2017/Amd.1:2019.

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](http://www.iso.org/members.html).



# Rubber and plastics hoses and hose assemblies, wire or textile reinforced types with working pressure equal or above 70 MPa (700 bar) — Specification

## 1 Scope

This document specifies requirements for two types of reinforced hoses and hose assemblies of nominal size from 3,2 to 25, dependent on relation of minimum burst pressure to maximum working pressure. Each type is divided into classes dependent on maximum working pressure.

They are suitable for use with:

- oil-based hydraulic fluids HH, HL, HM, HR and HV as defined in ISO 6743-4 at temperatures ranging from  $-40\text{ }^{\circ}\text{C}$  to  $+100\text{ }^{\circ}\text{C}$ ;
- water-based fluids HFC, HFAE, HFAS and HFB as defined in ISO 6743-4 at temperatures ranging from  $0\text{ }^{\circ}\text{C}$  to  $+70\text{ }^{\circ}\text{C}$ ;
- water at temperatures ranging from  $0\text{ }^{\circ}\text{C}$  to  $+70\text{ }^{\circ}\text{C}$ .

Such hoses and hose assemblies are intended to be used for:

- water jetting and water blasting applications;
- hydraulic applications.

This document does not include requirements for end fittings. It is limited to the performance of hoses and hose assemblies.

NOTE 1 It is the responsibility of the user, in consultation with the hose manufacturer, to establish the compatibility of the hose with the fluid to be used.

NOTE 2 For hydraulic jacks with manually driven pumps, hoses and hose assemblies per ISO 16301 can be used.

## 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, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 4671, *Rubber and plastics hoses and hose assemblies — Methods of measurement of the dimensions of hoses and the lengths of hose assemblies*

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, *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 10619-1:2017, *Rubber and plastics hoses and tubing — Measurement of flexibility and stiffness — Part 1: Bending tests at ambient temperature*

ISO 10619-2:2017, *Rubber and plastics hoses and tubing — Measurement of flexibility and stiffness — Part 2: Bending tests at sub-ambient temperatures*

### 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:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

### 4 List of significant hazards

#### 4.1 General

This clause contains some of the significant hazards, hazardous situations and events, as far as they are dealt with in this document, identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce the risk.

#### 4.2 Hazards due to bursting or leaking of hoses

Hazards can occur when a hose bursts or leaks. The escaping stream of liquid can cause physical damage and a sudden repositioning of the hose line in a dangerous manner (whip).

#### 4.3 Hazards due to failure of connectors

Hazards can occur when a connector fails. The escaping stream of liquid can cause physical damage and a sudden repositioning of the hose line in a dangerous manner (whip).

#### 4.4 Hazards due to errors by the operator

Hazards can occur if the operator uses incompatible substances or incompatible components. Hazards can also occur if the operator exceeds the limits of use specified by the manufacturer (e.g. too high pressure, too high tensile stress), also pinhole caused by kink may result in a significant injury.

#### 4.5 Hazards due to change in length of hose assembly

Hazardous situations occur when there is a sudden change of pressure in the hose line causing a change in length resulting in the operators losing their firm hold.

### 5 Classification

#### 5.1 Hose types

Two types of hose are specified, distinguished by the relation of minimum burst pressure to maximum working pressure:

- a) Type A: hoses with the relation of minimum burst pressure to maximum working pressure of 4:1