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## Rubber hoses and hose assemblies for underground mining — Wire- reinforced hydraulic types for coal mining — Specification

*Tuyaux et flexibles en caoutchouc pour les mines souterraines —  
Types hydrauliques avec armature de fils métalliques pour mines de  
charbon — 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).

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 third edition cancels and replaces the second edition (ISO 6805:1994), which has been technically revised. The main changes compared to the previous edition are as follows:

- the six types of hoses previously listed and replaced by specifying wire reinforced hydraulic rubber hoses in accordance with ISO 18752 have been eliminated while maintaining the special requirements for electrical resistance and flame resistance;
- the fluids and temperature ranges in Clause 1 have been revised;
- a new subclause, [6.4](#), for abrasion resistance has been added.

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 hoses and hose assemblies for underground mining — Wire-reinforced hydraulic types for coal mining — Specification

## 1 Scope

This document specifies requirements for wire-reinforced hoses and hose assemblies for underground coal mining applications of nominal sizes 6,3 to 51 for use with:

- oil-based hydraulic fluids HH, HL, HM, HR and HV as defined in ISO 6743-4 at temperatures ranging from  $-40\text{ °C}$  to  $+120\text{ °C}$ ;
- water-based fluids HFC, HFAE, HFAS and HFB as defined in ISO 6743-4 at temperatures ranging from  $-40\text{ °C}$  to  $+70\text{ °C}$ ;
- water at temperatures ranging from  $0\text{ °C}$  to  $+70\text{ °C}$ .

There is a possibility that operation at the extremes of or outside these temperature ranges materially reduce the life of the hose. These hoses are not suitable for use with fluids that have a castor oil or ester base.

## 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 8030, *Rubber and plastics hoses — Method of test for flammability*

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

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

ISO 18752, *Rubber hoses and hose assemblies — Wire- or textile-reinforced single-pressure types for hydraulic applications — Specification*

## 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 <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

## 4 Classification

### 4.1 Classes

Hoses shall be selected from the classes of hose listed in ISO 18752, distinguished by their maximum working pressure.

## 4.2 Grades and types

Hoses shall be selected from the grades of hose and the types classified by the outside diameter as listed in ISO 18752.

## 5 Materials and construction

### 5.1 Hoses

Hoses shall consist of a hydraulic-fluid-resistant rubber lining, one or multiple layers of steel wire reinforcement, and an oil-, abrasion- and weather-resistant rubber cover. A layer of other materials on the rubber cover is allowed for improved resistance to abrasion or other properties. The hose shall be conductive and fire-resistant.

### 5.2 Hose assemblies

Hose assemblies shall only be manufactured using hose fittings which conform to the requirements of ISO 18752. Hose fittings shall be matched to the hose and assembled in accordance with the manufacturer's instructions for the proper preparation and fabrication of hose assemblies. Hose assemblies shall meet the frequency testing specified in [Clause 7](#).

## 6 Requirements

### 6.1 General

Hoses and hose assemblies shall meet all the requirements for dimensions, physical properties and performance listed in ISO 18752. In addition, hoses shall meet the electrical resistance and flame resistance requirements listed in [6.2](#) and [6.3](#).

### 6.2 Electrical resistance

When tested in accordance with ISO 8031, the electrical resistance, as measured between the electrodes in the manner described, shall not exceed 2 M $\Omega$ /m.

Tests shall be made on five lengths of hose and all the test results shall be within the specified limit.

NOTE The statutory requirement of the national authority of a particular country for electrical resistance can be different from that quoted. In such cases, the requirement of the national authority applies.

### 6.3 Flame resistance

When tested in accordance with ISO 8030, the average time of persistence of flame or glow, after withdrawal of the flame, shall not exceed 30 s. Six test pieces of hose shall be tested and the average value calculated from the individual results.

NOTE The statutory requirement of the national authority of a particular country for flame resistance can be different from that quoted. In such cases, the requirement of the national authority applies.

### 6.4 Abrasion resistance

Abrasion resistance test requirements to be added when new abrasion resistance test methods are available.

## 7 Frequency of testing

Type testing and routine testing shall be as specified in ISO 18752:2014, Annex A. In addition, electrical resistance and flame resistance tests are required for type testing, but not for routine testing.

Type tests are those tests required to confirm that a particular hose design, manufactured by a particular method, meets all the requirements of this document. The tests shall be repeated at a maximum of five-year intervals, or whenever a change in the method of manufacture or materials used occurs. They shall be performed on all sizes, and on all classes and types except those of the same size and construction.

Routine tests are those tests required to be carried out on each length of finished hose prior to dispatch.

Production acceptance tests are those tests, specified in ISO 18752:2014, Annex B, which should preferably be carried out to control the quality of manufacture. The frequencies specified in ISO 18752:2014, Annex B are given as a guidance only.

## 8 Marking

### 8.1 Hoses

Hoses complying with this document shall be marked with at least the following:

- a) manufacturer's name or mark (and part number, if applicable), i.e. XXX;
- b) the number of this document, i.e. ISO 6805;
- c) hose type, i.e. AS;
- d) the nominal size;
- e) maximum working pressure, in megapascals and in bars, or either, with units indicated, e.g. 21 MPa (210 bar);
- f) quarter and year (last two digits) of manufacture.

EXAMPLE     XXX / ISO 6805/AS/25/21 MPa (210 bar)/4Q21.

For [8.1 b\)](#), hose manufacturer shall use the latest publication of this document, otherwise the year of publication shall be included in the marking.

### 8.2 Hoses assemblies

The couplings shall be permanently marked with the following minimum information:

- a) the manufacturer's or assembler's name or identification, i.e. XXX;
- b) maximum working pressure, in megapascals and in bars, or either, with units indicated, e.g. 21 MPa (210 bar);
- c) the year (last two digits) and then the month of assembly (a slash (/) or a dash (-) can be placed between the year and month).

EXAMPLE     XXX / 21 MPa (210 bar) / 2107.

## Bibliography

ISO 6743-4, *Lubricants, industrial oils and related products (class L) — Classification — Part 4: Family H (Hydraulic systems)*

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