
**Rubber and plastics hoses,
non-collapsible, for fire-fighting
service —**

Part 2:
**Semi-rigid hoses (and hose assemblies)
for pumps and vehicles**

*Tuyaux en caoutchouc et en plastique, non aplatissables, pour la lutte
contre l'incendie —*

Partie 2: Tuyaux (et flexibles) semi-rigides pour pompes et véhicules



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 4642-2 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 1, *Hoses (rubber and plastics)*.

This first edition, together with ISO 4642-1, cancels and replaces ISO 4642:1978 which has been technically revised.

ISO 4642 consists of the following parts, under the general title *Rubber and plastics hoses, non-collapsible, for fire-fighting service*:

- *Part 1: Semi-rigid hoses for fixed systems*
- *Part 2: Semi-rigid hoses (and hose assemblies) for pumps and vehicles*

Introduction

This document is mainly concerned with fire service semi-rigid delivery hoses and incorporates those hoses used manually to control and extinguish fires.

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Rubber and plastics hoses, non-collapsible, for fire-fighting service —

Part 2: Semi-rigid hoses (and hose assemblies) for pumps and vehicles

1 Scope

This part of ISO 4642 specifies the requirements and test methods for semi-rigid reel hoses for use on fire-fighting vehicles and trailer pumps. The hoses are intended for use at a maximum working pressure of 1,5 MPa for normal pressure hoses (category I) and 4,0 MPa for high pressure hoses (category II). The hoses are further subdivided into types and classes (see Clause 4).

This part of ISO 4642 applies to delivery hoses for fire-fighting purposes intended for use at a minimum ambient temperature of $-20\text{ }^{\circ}\text{C}$.

Hoses conforming to this part of ISO 4642 should be used with fire hose couplings conforming to the relevant national standards couplings.

Requirements are also given for hose assemblies (see 6.12) where these are fitted by the hose manufacturer.

NOTE 1 Hoses for use at temperatures lower than $-20\text{ }^{\circ}\text{C}$, can be supplied by agreement between the manufacturer and purchaser.

NOTE 2 All pressures are expressed in megapascals where 1 MPa = 10 bar.

2 Normative references

The following referenced documents are indispensable for the application 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 176:2005, *Plastics — Determination of loss of plasticizers — Activated carbon method*

ISO 188, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

ISO 1307, *Rubber and plastics hoses — Hose sizes, minimum and maximum inside diameters, and tolerances on cut-to-length hoses*

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

ISO 4671:2007, *Rubber and plastics hoses and hose assemblies — Methods of measurement of the dimensions of hoses and the lengths of hose assemblies*

ISO 4672:1997, *Rubber and plastics hoses — Sub-ambient temperature flexibility tests*

ISO 7326:2006, *Rubber and plastics hoses — Assessment of ozone resistance under static conditions*

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

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 and the following apply.

3.1

semi-rigid hose

hose that maintains its round cross-section even when unpressurized

4 Classification

4.1 General

All types and classes of hose shall be so flexible that they can be rolled and kept on a drum of minimum diameter 200 mm for 12 mm inside diameter, 19 mm inside diameter and 25 mm inside diameter hose and of minimum diameter 280 mm for 33 mm inside diameter hose.

Hoses shall be one of two categories distinguished by the maximum working pressure. Each hose shall be further divided into one of three types distinguished by its construction, and then into six classes distinguished by the materials used for lining and cover.

NOTE The hose can be coloured by agreement between the purchaser and the manufacturer.

4.2 Classification by types (hose construction)

4.2.1 Type A hoses shall consist of:

- a) a seamless rubber or plastics lining;
- b) a textile spiral or braided reinforcement;
- c) a rubber or plastics cover.

4.2.2 Type B hoses shall consist of:

- a) a seamless rubber or plastics lining;
- b) a circular woven textile reinforcement with a rigid spiral helix;
- c) an uncovered or rubber or plastics cover.

4.2.3 Type C hoses shall consist of:

- a) a seamless rubber or plastics lining;
- b) any suitable reinforcement;
- c) a rubber or plastics cover.

NOTE Whilst the construction of type A and type C hoses can be similar or even identical, the performance requirements differ for the following: burst and proof pressure, adhesion, hot surface resistance, crush resistance.