
**Thermoplastics hoses, textile-reinforced,
for general-purpose water applications —
Specification**

*Tuyaux en matières thermoplastiques à armature textile d'usage
général pour l'eau — 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.

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 6224 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 1, *Hoses (rubber and plastics)*.

This fourth edition cancels and replaces the third edition (ISO 6224:2005), which has been technically revised. The main changes are as follows:

- Table 1 includes four additional inside diameters (4 mm, 6 mm, 8 mm and 9 mm) for each type of hose;
- in Table 3, the requirement for the minimum adhesion between components has been raised from 1,5 kN/m to 2,0 kN/m;
- annexes giving schedules for type, routine and production testing have been added.

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

1 Scope

This International Standard specifies the requirements for general-purpose textile-reinforced thermoplastics water-discharge hoses.

Three types of hose are specified according to their operating duty requirements, i.e. their ambient and water temperature ranges:

- ambient temperatures: $-10\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$;
- water temperature during operation: $0\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$.

NOTE At water temperatures above $23\text{ }^{\circ}\text{C}$ and particularly above $40\text{ }^{\circ}\text{C}$, the maximum working pressure will be reduced.

These hoses are not intended to be used for conveyance of potable (drinking) water, for washing-machine inlets, as fire-fighting hoses, for special agricultural machines or as gardening hoses for the consumer market.

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 3, *Preferred numbers — Series of preferred numbers*

ISO 176:2005, *Plastics — Determination of loss of plasticizers — Activated carbon method*

ISO 188:2011, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

ISO 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics*

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

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

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

ISO 8331, *Rubber and plastics hoses and hose assemblies — Guidelines for selection, storage, use and maintenance*

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

1) To be published. (Revision of ISO 1746:1998)

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

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.

4 Classification

Hoses are designated as one of the following types, depending on their pressure rating:

- Type 1: Low pressure — Designed for a maximum working pressure of 0,6 MPa (6 bar) at 23 °C and 0,36 MPa (3,6 bar) at 60 °C.
- Type 2: Medium pressure — Designed for a maximum working pressure of 1,0 MPa (10 bar) at 23 °C and 0,65 MPa (6,5 bar) at 60 °C.
- Type 3: High pressure — Designed for a maximum working pressure of 2,5 MPa (25 bar) at 23 °C and 1,6 MPa (16 bar) at 60 °C.

5 Materials and construction

The hose shall consist of:

- a flexible thermoplastic lining;
- a reinforcement of natural or synthetic textile, applied by any suitable technique;
- a flexible thermoplastic cover.

The lining and the cover shall be of uniform thickness, concentric, fully gelled and free from visible cracks, porosity, foreign inclusions and other defects. The cover may have a smooth or fluted finish.

6 Dimensions

6.1 Inside diameters and tolerances on inside diameter

When measured in accordance with ISO 4671, the inside diameter and its tolerances shall conform to the values specified in Table 1.

2) To be published. (Revision of ISO 4672:1997)