
**Plastics hose — General-purpose
collapsible water hose, textile-
reinforced — Specification**

*Tuyaux plastiques — Tuyaux d'eau écrasables d'usage général
renforcés textiles — Spécifications*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO 8029:2014](https://standards.iteh.ai/catalog/standards/sist/9b40258e-a313-415d-b00f-38b037560c99/iso-8029-2014)

<https://standards.iteh.ai/catalog/standards/sist/9b40258e-a313-415d-b00f-38b037560c99/iso-8029-2014>



iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 8029:2014

<https://standards.iteh.ai/catalog/standards/sist/9b40258e-a313-415d-b00f-38b037560c99/iso-8029-2014>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

	Page
Foreword.....	iv
Introduction.....	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Classification	2
5 Couplings and end fittings	2
6 Materials and construction	2
7 Dimensions and tolerances	2
7.1 Inside diameter and tolerance.....	2
7.2 Tolerance on length.....	3
8 Physical properties	4
8.1 Plastic compounds.....	4
8.2 Performance requirements for finished hose.....	4
9 Frequency of testing	9
10 Test certificate/report	9
11 Marking	9
12 Recommendations for packaging and storage	10
Annex A (normative) Abrasion test	11
Annex B (normative) Type and routine testing	13
Annex C (informative) Production tests	14
Annex D (informative) Couplings and end fittings	15
Bibliography	16

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).

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).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

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 third edition cancels and replaces the second edition (ISO 8029:2007), which has been technically revised. Fifteen sizes of inside diameter were added in order to conform to the couplings and end fittings available in the market (see [Table 1](#)).

Introduction

This International Standard has been prepared to provide minimum requirements for the satisfactory performance of textile-reinforced thermoplastic collapsible water hose, for discharge applications, conveying water, aqueous sludge or slurries.

In view of such applications, requirements and the corresponding tests have been specified for exposure to laboratory light sources (see [8.2.5](#)) and for abrasion resistance (see [8.2.6](#)).

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO 8029:2014](#)

<https://standards.iteh.ai/catalog/standards/sist/9b40258e-a313-415d-b00f-38b037560c99/iso-8029-2014>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO 8029:2014](#)

<https://standards.iteh.ai/catalog/standards/sist/9b40258e-a313-415d-b00f-38b037560c99/iso-8029-2014>

Plastics hose — General-purpose collapsible water hose, textile-reinforced — Specification

1 Scope

This International Standard specifies the requirements for four types of textile-reinforced thermoplastics collapsible water hoses for general applications for use in the temperature range of $-10\text{ }^{\circ}\text{C}$ to $55\text{ }^{\circ}\text{C}$. Such hoses are classified into four types, as follows:

- low pressure, designed for a maximum working pressure of up to 0,4 MPa (4,0 bar) at $23\text{ }^{\circ}\text{C}$ and up to 0,2 MPa (2,0 bar) at $55\text{ }^{\circ}\text{C}$;
- medium pressure, for a maximum working pressure of up to 0,7 MPa (7,0 bar) at $23\text{ }^{\circ}\text{C}$ and up to 0,36 MPa (3,6 bar) at $55\text{ }^{\circ}\text{C}$;
- high pressure, for a maximum working pressure of up to 1,0 MPa (10,0 bar) at $23\text{ }^{\circ}\text{C}$ and up to 0,51 MPa (5,1 bar) at $55\text{ }^{\circ}\text{C}$;
- extra-high pressure, for a maximum working pressure of up to 1,55 MPa (15,5 bar) at $23\text{ }^{\circ}\text{C}$ and up to 0,79 MPa (7,9 bar) at $55\text{ }^{\circ}\text{C}$.

This International Standard does not apply to products used for fire-fighting or the conveyance of drinking water.

2 Normative references

ISO 8029:2014

<https://standards.iteh.ai/catalog/standards/sist/9b40258e-a313-415d-b00f-38803758839/iso-8029-2014>

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 37, *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties*

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

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

ISO 9352, *Plastics — Determination of resistance to wear by abrasive wheels*

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

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

ISO 23529, *Rubber — General procedures for preparing and conditioning test pieces for physical test methods*

ISO 30013, *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 four types depending on their pressure rating at the specified temperatures:

- Type A: Low working pressure hose, designed for a maximum working pressure of up to 0,4 MPa (4,0 bar) at 23 °C and up to 0,2 MPa (2,0 bar) at 55 °C;
- Type B: Medium working pressure hose, designed for a maximum working pressure of up to 0,7 MPa (7,0 bar) at 23 °C and up to 0,36 MPa (3,6 bar) at 55 °C;
- Type C: High working pressure hose, designed for a maximum working pressure of up to 1,0 MPa (10,0 bar) at 23 °C and up to 0,51 MPa (5,1 bar) at 55 °C;
- Type D: Extra high working pressure hose, designed for a maximum working pressure of up to 1,55 MPa (15,5 bar) at 23 °C and up to 0,79 MPa (7,9 bar) at 55 °C.

5 Couplings and end fittings

Hoses may be fitted with the appropriate coupling type and the end fitting to form hose assemblies. Guidance on coupling type is given in Annex D and ISO/TR 17784:2003, Clause 7: Couplings.

6 Materials and construction

The hose shall consist of: [ISO 8029:2014
https://standards.iteh.ai/catalog/standards/sist/9b40258e-a313-415d-b00f-38b037560c99/iso-8029-2014](https://standards.iteh.ai/catalog/standards/sist/9b40258e-a313-415d-b00f-38b037560c99/iso-8029-2014)

- a) a flexible thermoplastic lining;
- b) a reinforcement made of natural or synthetic textile material, applied by any suitable technique; and
- c) a flexible thermoplastic cover.

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

7 Dimensions and tolerances

7.1 Inside diameter and tolerance

The inside diameter of the hose and the tolerance on the inside diameter shall meet the requirements of [Table 1](#).

Table 1 — Inside diameter and tolerance

Inside diameter (mm)	Tolerance on I.D. (mm)
19	±1,5
25	±1,5
26,5	±1,5
31,5	±1,5
33	±1,5
40	±2,0
41	±2,0
50	±2,0
52,5	±2,0
63	±2,0
65	±2,0
66	±2,0
75	±2,0
78	±2,0
80	±2,25
100	±2,25
104	±2,25
125	±3,0
128	±3,0
150	±3,0
155	±3,0
160	±3,0
200	±3,0
207	±3,0
250	±3,0
258	±3,0
300	±3,0
309	±3,0
350	±4,0
359	±4,0
400	±4,0
410	±4,0
<p>If special cases call for extra sizes:</p> <ul style="list-style-type: none"> — for smaller or larger dimensions, further numbers shall be chosen from the R10 series of preferred numbers (see ISO 3), with tolerances as given in ISO 1307; — for intermediate dimensions, numbers shall be chosen from the R20 series of preferred numbers (see ISO 3), with the tolerances as given for the next-larger size in the table above. 	

7.2 Tolerance on length

If the cut length of the hose is less than or equal to 1 800 mm, the tolerance on length shall be as specified in ISO 1307.

If the cut length of the hose is over 1 800 mm, the tolerance shall be $\pm 2\%$ of the length specified.

8 Physical properties

8.1 Plastic compounds

The physical properties of compounds used for the lining and the cover shall conform to the values in [Table 2](#), when determined by the methods listed in [Table 2](#).

Tests shall be carried out either on test pieces taken from the hose or on test pieces taken from sheet made, using a laboratory press, under the same conditions as used in the manufacture of the hose.

Table 2 — Physical properties of compounds

Property	Requirements		Test method
	Lining	Cover	
Tensile strength (min.), MPa	10,0	10,0	ISO 37 (dumb-bell test piece)
Elongation at break (min.), %	160	160	ISO 37 (dumb-bell test piece)
Ageing Max. change in tensile strength from original value, %	± 20	± 20	ISO 188 (48 h at +70 °C, air-oven method) ISO 37 (dumb-bell test piece)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

8.2 Performance requirements for finished hose

8.2.1 Hydrostatic requirements at standard laboratory temperature

When tested at standard laboratory temperature as specified in ISO 23529, by the method described in ISO 1402, hoses shall withstand the appropriate proof and minimum burst pressures specified in [Tables 3](#) and [4](#).

At the maximum working pressure appropriate to the type and size of hose as specified, the change in length of the hose shall not exceed $\pm 7\%$ and the change in diameter of the hose shall be no greater than $\pm 20\%$ when measured by the method described in ISO 1402.

During and after the proof pressure hold test described in ISO 1402, the hose shall be examined for evidence of leakage, cracking, abrupt distortion or other signs of failure indicating irregularities in material or manufacture. No such defects shall be observed.

Table 3 — Hydrostatic-pressure requirements for Type A and B hoses at 23 °C

I.D. mm	Type A						Type B					
	Maximum working pressure		Proof pressure		Minimum burst pressure		Maximum working pressure		Proof pressure		Minimum burst pressure	
	MPa	bar	MPa	bar	MPa	bar	MPa	bar	MPa	bar	MPa	bar
19	—	—	—	—	—	—	0,7	7,0	1,05	10,5	2,1	21,0
25	—	—	—	—	—	—	0,7	7,0	1,05	10,5	2,1	21,0
26,5	—	—	—	—	—	—	0,7	7,0	1,05	10,5	2,1	21,0
31,5	—	—	—	—	—	—	0,7	7,0	1,05	10,5	2,1	21,0
33	—	—	—	—	—	—	0,7	7,0	1,05	10,5	2,1	21,0
40	0,4	4,0	0,6	6,0	1,2	12,0	0,7	7,0	1,05	10,5	2,1	21,0
41	0,4	4,0	0,6	6,0	1,2	12,0	0,7	7,0	1,05	10,5	2,1	21,0
50	0,4	4,0	0,6	6,0	1,2	12,0	0,7	7,0	1,05	10,5	2,1	21,0
52,5	0,4	4,0	0,6	6,0	1,2	12,0	0,7	7,0	1,05	10,5	2,1	21,0
63	0,4	4,0	0,6	6,0	1,2	12,0	0,7	7,0	1,05	10,5	2,1	21,0
65	0,4	4,0	0,6	6,0	1,2	12,0	0,7	7,0	1,05	10,5	2,1	21,0
66	0,4	4,0	0,6	6,0	1,2	12,0	0,7	7,0	1,05	10,5	2,1	21,0
75	0,3	3,0	0,45	4,5	0,9	9,0	0,7	7,0	1,05	10,5	2,1	21,0
78	0,3	3,0	0,45	4,5	0,9	9,0	0,7	7,0	1,05	10,5	2,1	21,0
80	0,3	3,0	0,45	4,5	0,9	9,0	0,7	7,0	1,05	10,5	2,1	21,0
100	0,3	3,0	0,45	4,5	0,9	9,0	0,7	7,0	1,05	10,5	2,1	21,0
104	0,3	3,0	0,45	4,5	0,9	9,0	0,7	7,0	1,05	10,5	2,1	21,0
125	0,25	2,5	0,37	3,7	0,75	7,5	0,5	5,0	0,75	7,5	1,5	15,0
128	0,25	2,5	0,37	3,7	0,75	7,5	0,5	5,0	0,75	7,5	1,5	15,0
150	0,25	2,5	0,37	3,7	0,75	7,5	0,5	5,0	0,75	7,5	1,5	15,0
155	0,25	2,5	0,37	3,7	0,75	7,5	0,5	5,0	0,75	7,5	1,5	15,0
160	0,25	2,5	0,37	3,7	0,75	7,5	0,5	5,0	0,75	7,5	1,5	15,0
200	0,25	2,5	0,37	3,7	0,75	7,5	0,4	4,0	0,60	6,0	1,2	12,0
207	0,25	2,5	0,37	3,7	0,75	7,5	0,4	4,0	0,60	6,0	1,2	12,0
250	0,20	2,0	0,30	3,0	0,60	6,0	0,4	4,0	0,60	6,0	1,2	12,0
258	0,20	2,0	0,30	3,0	0,60	6,0	0,4	4,0	0,60	6,0	1,2	12,0
300	0,20	2,0	0,30	3,0	0,60	6,0	—	—	—	—	—	—
309	0,20	2,0	0,30	3,0	0,60	6,0	—	—	—	—	—	—
350	0,20	2,0	0,30	3,0	0,60	6,0	—	—	—	—	—	—
359	0,20	2,0	0,30	3,0	0,60	6,0	—	—	—	—	—	—
400	0,20	2,0	0,30	3,0	0,60	6,0	—	—	—	—	—	—
410	0,20	2,0	0,30	3,0	0,60	6,0	—	—	—	—	—	—

NOTE 1 bar = 0,1 MPa.