INTERNATIONAL STANDARD

ISO 4079

Second edition
1991-09-15

Rubber hoses and hose assemblies — Textile-reinforced hydraulic type — Specification

Tuyaux et flexibles en caoutchouc — Type hydraulique à armature textile — Spécifications

Reference number
ISO 4079:1991(E)

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.

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.

International Standard ISO 4079 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Sub-Committee SC 1, *Hoses (rubber and plastics)*.

This second edition cancels and replaces the first edition (ISO 4079:1978), of which it constitutes a technical revision.

International Organization for Standardization
Case Postale 56 • CH-1211 Genève 20 • Switzerland
Printed in Switzerland

Rubber hoses and hose assemblies — Textile-reinforced hydraulic type — Specification

1 Scope

This International Standard specifies requirements for four types of textile-reinforced rubber hose and hose assembly of internal diameter from 5 mm to 100 mm for use with common hydraulic fluids, such as mineral oils, soluble oils, oil and water emulsions, aqueous glycol solution, and water, at temperatures ranging from − 40 °C to + 100 °C.

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

NOTE 1 The hoses are not suitable for use with castor-oil-based and ester-based fluids. Operating temperatures in excess of 93 °C may materially reduce the life of the hose.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1402:1984, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing.*

ISO 1817:1985, *Rubber, vulcanized — Determination of the effect of liquids.*

ISO 4671:1984, *Rubber and plastics hose and hose assemblies — Methods of measurement of dimensions.*

ISO 4672:1988, *Rubber and plastics hoses — Sub-ambient temperature flexibility tests.*

ISO 6803:1984, *Rubber or plastics hoses and hose assemblies — Hydraulic pressure impulse test without flexing.*

ISO 7326:1991, *Rubber and plastics hoses — Assessment of ozone resistance under static conditions.*

ISO 7751:—[1], *Rubber and plastics hoses and hose assemblies — Ratios of proof and burst pressure to design working pressure.*

ISO 8033:1985, *Rubber and plastics hose — Determination of adhesion between components.*

3 Types

Four types of hose are specified, distinguished by their design working pressure (see table 2) and minimum bend radius (see table 3).

Types 1 and 2 shall be constructed with one textile yarn braid, type 3 with two textile yarn braids and type 4 with either one or two textile yarn braids.

4 Materials and construction

4.1 The hoses shall consist of an oil- and water-resistant synthetic rubber tube, one or more layers of suitable textile yarn and an oil and weather-resistant rubber cover.

4.2 The hose shall be concentric in accordance with the following:

The measurements of the wall thickness at different points shall not differ by more than the following values:

1) To be published. (Revision of ISO 7751:1983)

— up to and including 6,3 mm nominal bore: 0,8 mm;

— over 6,3 mm up to and including 19 mm nominal bore: 1,0 mm;

— over 19 mm nominal bore: 1,3 mm.

5 Dimensions

The bore diameter and outside diameter of the hose shall meet the requirements of table 1 when measured in accordance with ISO 4671.

NOTE 2 ISO 1307:1983, *Rubber and plastics hoses — Bore diameters and tolerances on length*, has not been followed for nominal bore or permitted range. The dimensions adopted in table 1 are to ensure compatibility with fittings that are in wide use throughout the world.

6 Hydrostatic requirements

6.1 The design working pressure of the hoses shall comply with the requirements of table 2, when tested in accordance with ISO 1402. The ratios of design working pressure to proof pressure and to minimum burst pressure shall be in accordance with category No. 3 of ISO 7751.

6.2 When tested in accordance with ISO 1402, the change in length of hose at the design working pressure shall not exceed + 2 % to − 4 %.

Table 1 — Bore diameter and outside diameter of hose

Dimensions in millimetres

Nominal bore	Bore diameter		Outside diameter of hose							
	(All types)		Type 1		Type 2		Type 3		Type 4	
	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
5	4,5	5,4	10,3	11,9	11,0	12,6	11,9	13,5	12,0	13,6
6,3	6,1	6,9	11,9	13,5	12,6	14,2	13,5	15,1	13,6	15,2
8	7,7	8,5	13,5	15,1	14,1	15,7	16,7	18,3	16,2	17,8
10	9,3	10,1	15,1	16,7	15,7	17,3	18,3	19,8	17,7	19,3
12,5	12,3	13,5	19,0	20,6	18,7	20,7	23,0	24,6	20,7	22,7
16	15,4	16,7	22,2	23,8	22,9	24,9	26,2	27,8	24,9	26,9
19	18,6	19,8	—	—	26,0	28,0	31,0	32,5	28,0	30,0
25	25,0	26,4	—	—	32,9	35,9	36,9	39,3	34,4	37,4
31,5	31,3	33,0	—	—	—	—	42,9	46,0	41,0	44,0
38	37,1	39,1	—	—	—	—	—	—	47,6	51,6
51	49,8	51,8	—	—	—	—	—	—	60,3	64,3
60	58,8	61,2	—	—	—	—	—	—	70,0	74,0
80	78,8	81,2	—	—	—	—	—	—	91,5	96,5
100	98,6	101,4	—	—	—	—	—	—	113,5	118,5