



SLOVENSKI STANDARD

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Gumene cevi in cevni priključki – S pletenimi žicami okrepljene hidravlične cevi - Specifikacija - 1. del: Uporaba za oljne tekočine

Rubber hoses and hose assemblies -- Wire-braid-reinforced hydraulic types --
Specification -- Part 1: Oil-based fluid applications

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Tuyaux et flexibles en caoutchouc -- Types hydrauliques avec armature de fils
métalliques tressés -- Spécifications -- Partie 1: Applications pour fluide à base d'huile

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INTERNATIONAL STANDARD

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Rubber hoses and hose assemblies — Wire-braid-reinforced hydraulic types — Specification —

Part 1: Oil-based fluid applications

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*Tuyaux et flexibles en caoutchouc — Types hydrauliques avec armature de
fils métalliques tressés — Spécifications —*

Partie 1: Applications pour fluide à base d'huile

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ISO 1436-1:2001(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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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 part of ISO 1436 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 1436-1 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 1, *Hoses (rubber and plastics)*.

Together with ISO 1436-2 (in preparation), this part of ISO 1436 cancels and replaces ISO 1436:1991, which has been technically revised.

ISO 1436 consists of the following parts, under the general title *Rubber hoses and hose assemblies — Wire-braid-reinforced hydraulic types — Specification*:

— *Part 1: Oil-based fluid applications*

— *Part 2: Water-based fluid applications*

Annex A of this part of ISO 1436 is for information only.

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Rubber hoses and hose assemblies — Wire-braid-reinforced hydraulic types — Specification —

Part 1: Oil-based fluid applications

1 Scope

This part of ISO 1436 specifies requirements for eight types of wire-braid-reinforced hoses and hose assemblies of nominal bore from 5 to 51. They are suitable for use with hydraulic fluids HH, HL, HM, HR and HV in accordance with ISO 6743-4 at temperatures ranging from $-40\text{ }^{\circ}\text{C}$ to $+100\text{ }^{\circ}\text{C}$.

This part of ISO 1436 does not include requirements for end fittings. It is limited to requirements for the performance of hoses and hose assemblies.

NOTE It is the responsibility of the user, in consultation with the hose manufacturer, to establish compatibility of the hose with the fluid to be used.

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2 Normative references

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The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 1436. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 1436 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

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

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

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

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

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

ISO 6945, *Rubber hoses — Determination of abrasion resistance of the outer cover*

ISO 7233, *Rubber and plastics hoses and hose assemblies — Determination of suction resistance*

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

ISO 8033:1991, *Rubber and plastics hose — Determination of adhesion between components*

ISO 1436-1:2001(E)**3 Classification**

Eight types of hose are specified, distinguished by their construction, working pressure and oil resistance:

- Types 1ST and R1A: hoses with a single braid of wire reinforcement and having a thick cover.
- Types 2ST and R2A: hoses with two braids of wire reinforcement and having a thick cover.
- Types 1SN and R1AT: hoses with a single braid of wire reinforcement and having a thin cover.
- Types 2SN and R2AT: hoses with two braids of wire reinforcement and having a thin cover.

NOTE 1 Types 1SN/R1AT and 2SN/R2AT have the same reinforcement dimensions as types 1ST/R1A and 2ST/R2A, respectively, except that they have thinner covers designed for assembly with fittings without removal of the cover or a portion of the cover.

NOTE 2 The pressure ratings of types 1ST and 1SN differ from those of types R1A and R1AT. Similarly, the pressure ratings of types 2ST and 2SN differ from those of types R2A and R2AT. See Table 3.

NOTE 3 Types R1A, R2A, R1AT and R2AT are not subjected to the vacuum resistance or abrasion resistance tests.

4 Materials and construction**4.1 Hoses**

Hoses shall consist of a hydraulic-fluid-resistant rubber lining, one or two layers of high-tensile-steel wire and an oil- and weather-resistant rubber cover.

4.2 Hose assemblies

Hose assemblies shall be manufactured using hoses which conform to the requirements for hoses specified in this part of ISO 1436.

Hose assemblies shall be manufactured with only those hose fittings whose functionality has been verified in accordance with subclauses 6.1, 6.3, 6.4 and 6.5 of this part of ISO 1436.

The manufacturer's instructions for proper preparation and fabrication of hose assemblies shall be followed.

5 Dimensions**5.1 Diameters and concentricity**

When measured in accordance with ISO 4671, the diameters of the hoses shall conform to the values given in Table 1.

When measured in accordance with ISO 4671, the concentricity of the hoses shall conform to the values given in Table 2.

Table 1 — Dimensions of hoses

Nominal bore	All types		Types 1ST/R1A				Types 1SN/R1AT		Types 2ST/TR2A				Types 2SN/R2AT		
	Inside diameter mm		Diameter over reinforcement mm		Outside diameter of hose mm		Cover thickness mm		Diameter over reinforcement mm		Outside diameter of hose mm		Cover thickness mm		
	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	
5	4,6	5,4	8,9	10,1	11,9	13,5	12,5	0,8	1,5	10,6	11,7	15,1	16,7	0,8	1,5
6,3	6,2	7,0	10,6	11,7	15,1	16,7	14,1	0,8	1,5	12,1	13,3	16,7	18,3	0,8	1,5
8	7,7	8,5	12,1	13,3	16,7	18,3	15,7	0,8	1,5	13,7	14,9	18,3	19,9	0,8	1,5
10	9,3	10,1	14,5	15,7	19,0	20,6	18,1	0,8	1,5	16,1	17,3	20,6	22,2	0,8	1,5
12,5	12,3	13,5	17,5	19,1	22,2	23,8	21,5	0,8	1,5	19,0	20,6	23,8	25,4	0,8	1,5
16	15,5	16,7	20,6	22,2	25,4	27,0	24,7	0,8	1,5	22,2	23,8	27,0	28,6	0,8	1,5
19	18,6	19,8	24,6	26,2	29,4	31,0	28,6	0,8	1,5	26,2	27,8	31,0	32,6	0,8	1,5
25	25,0	26,4	32,5	34,1	36,9	39,3	36,6	0,8	1,5	34,1	35,7	38,5	40,9	1,0	2,0
31,5	31,4	33,0	39,3	41,7	44,4	47,6	44,8	1,0	2,0	43,2	45,7	49,2	52,4	1,0	2,0
38	37,7	39,3	45,6	48,0	50,8	54,0	52,1	1,5	2,5	49,6	52,0	55,6	58,8	1,3	2,5
51	50,4	52,0	58,7	61,9	65,1	68,3	65,9	1,5	2,5	62,3	64,7	68,2	71,4	1,3	2,5

NOTE Nominal bores in this table and in Tables 2 to 5 are in accordance with ISO 4397.