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

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

Part 1: Oil-based fluid applications

Tuyaux et flexibles en caoutchouc — Types hydrauliques avec armature de textile — Spécifications —

Partie 1: Applications pour fluide à base d'huile

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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 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 4079 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

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

Together with ISO 4079-2 (in preparation), this part of ISO 4079 cancels and replaces ISO 4079:1991, which has been technically revised.

ISO 4079 consists of the following parts, under the general title *Rubber hoses and hose assemblies — Textile-reinforced hydraulic types — Specification*:

— *Part 1: Oil-based fluid applications*

— *Part 2: Water-based fluid applications*

Annex A of this part of ISO 4079 is for information only.

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

Part 1:
Oil-based fluid applications

1 Scope

This part of ISO 4079 specifies requirements for five types of textile-reinforced hydraulic hoses and hose assemblies of nominal bore from 5 to 100. 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 °C to + 100 °C.

This part of ISO 4079 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.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 4079. 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 4079 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*

3 Classification

Five types of hose are specified, distinguished by their construction, working pressure and minimum bend radius:

— Type 1TE: hoses with a single braid of textile reinforcement

— Type 2TE: hoses with one or more braids of textile reinforcement

— Type 3TE: hoses with one or more braids of textile reinforcement (higher working pressure)

— Type R3: hoses with two braids of textile reinforcement

— Type R6: hoses with a single braid of textile reinforcement

NOTE Type 1TE is not subjected to the impulse or vacuum resistance tests. Type R3 is not subjected to the vacuum resistance or abrasion resistance tests. Type R6 is not subjected to the impulse, 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 more layers of suitable textile yarn, and an oil- and weather-resistant rubber cover.

Hoses shall be designed to enable end fittings to be assembled without removal of the cover.

4.2 Hose assemblies

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 4079.

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 inside and outside 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.