

**Rubber hoses and hose assemblies for water suction
and discharge - Specification (ISO 4641:2010)**

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 4641:2011 sisaldab Euroopa standardi EN ISO 4641:2011 ingliskeelset teksti.

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This standard is ratified with the order of Estonian Centre for Standardisation dated 30.06.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

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English Version

**Rubber hoses and hose assemblies for water suction and
discharge - Specification (ISO 4641:2010)**

Tuyaux et flexibles en caoutchouc pour aspiration et
refoulement d'eau - Spécifications (ISO 4641:2010)

Saug- und Druck-Gummischläuche und Schlauchleitungen
für Wasser - Anforderung (ISO 4641:2010)

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Foreword

The text of ISO 4641:2010 has been prepared by Technical Committee ISO/TC 45 “Rubber and rubber products” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 4641:2011 by Technical Committee CEN/TC 218 “Rubber and plastics hoses and hose assemblies” the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2011, and conflicting national standards shall be withdrawn at the latest by December 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 4641:2008.

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Endorsement notice

The text of ISO 4641:2010 has been approved by CEN as a EN ISO 4641:2011 without any modification.

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Rubber hoses and hose assemblies for water suction and discharge — Specification

1 Scope

This International Standard specifies the minimum requirements for textile-reinforced, smooth-bore rubber water-suction and discharge hoses and hose assemblies.

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

- ambient temperatures: $-25\text{ }^{\circ}\text{C}$ to $+70\text{ }^{\circ}\text{C}$;
- water temperatures during operation: $0\text{ }^{\circ}\text{C}$ to $+70\text{ }^{\circ}\text{C}$.

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 37, *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties*

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

ISO 1307:2006, *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 1746, *Rubber or plastics hoses and tubing — Bending tests*¹⁾

ISO 2393, *Rubber test mixes — Preparation, mixing and vulcanization — Equipment and procedures*

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

ISO 4672:1997, *Rubber and plastics hoses — Sub-ambient temperature flexibility tests*²⁾

ISO 7233:2006, *Rubber and plastics hoses and hose assemblies — Determination of resistance to vacuum*

ISO 7326:2006, *Rubber and plastics hoses — Assessment of ozone resistance under static conditions*

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

1) Under revision as ISO 10619-1.

2) Under revision as ISO 10619-2.

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*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8330 apply.

4 Classification

Hoses and hose assemblies for this application are classified into three types according to their operating duty requirements:

- Type 1: Light-duty hoses for suction service to $-0,063$ MPa ($-0,63$ bar) and for discharge pressures up to $0,3$ MPa (3 bar).
- Type 2: Medium-duty hoses for suction service to $-0,08$ MPa ($-0,8$ bar) and for discharge pressures up to $0,5$ MPa (5 bar).
- Type 3: Heavy-duty hoses for suction service to $-0,097$ MPa ($-0,97$ bar) and for discharge pressures up to $1,0$ MPa (10 bar).

5 Couplings and end fittings

Hoses shall be fitted with end fittings/couplings to form hose assemblies. Annex C lists types of coupling and end fitting.

6 Materials and construction

6.1 Lining

The lining shall consist of suitably compounded water-resistant natural or synthetic rubber. Its internal surface shall be smooth and free from imperfections which could impair the expected use.

6.2 Reinforcement

The reinforcement shall consist of a suitable textile material and may contain a helix that can be metallic wire or of another suitable material.

6.3 Cover

The cover shall consist of suitably compounded natural or synthetic rubber. Its external surface may be corrugated or fluted. An external helix is optional and can be either metallic wire or of another suitable material.

7 Dimensions and tolerances

7.1 Bore (inside diameter)

The nominal size range is 16 to 315 with bore diameters and tolerances as shown in Table 3.