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Plastics hoses — Helical-thermoplasticreinforced thermoplastics hoses for suction and discharge of aqueous materials — Specification

Tuyaux en plastiques — Tuyaux thermoplastiques à renforcement thermoplastique en spirale pour aspiration et refoulement de matières aqueuses — Spécifications



Reference number ISO 3994:2007(E)

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Foreword

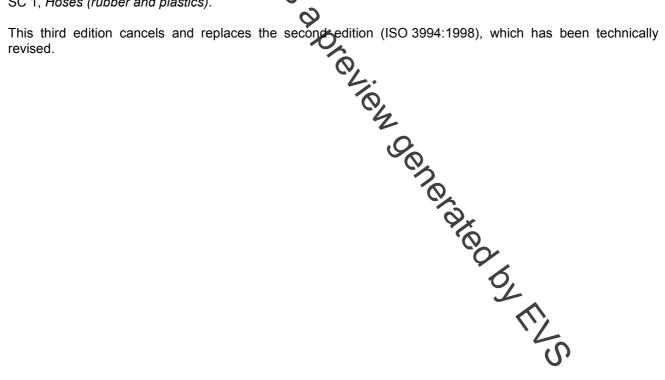
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ISO 3994 was prepared by Technical Committee ISO/TC 45, Rubber and rubber products, Subcommittee SC 1, Hoses (rubber and plastics).



Introduction

This International Standard has been prepared to provide minimum acceptable requirements for the satisfactory performance of polymer-reinforced thermoplastics hoses for suction and discharge applications, conveying water, weak aqueous chemical solutions and abrasive solids and slurries.

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Plastics hoses — Helical-thermoplastic-reinforced thermoplastics hoses for suction and discharge of aqueous materials — Specification

WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate health and safety practices and to ensure compliance with any national regulatory conditions.

1 Scope

This International Standard spectres the requirements for three types of helical-thermoplastic-reinforced thermoplastics hoses for suction and discharge of water, weak aqueous chemical solutions and abrasive solids and slurries, for use in the ambient temperature range from -10 °C to +55 °C.

The three types of hose are for light-, medium- and heavy-duty applications.

The types of hoses covered in this International Standard are not intended for use with flammable or combustible materials, nor with aromatic solvents

NOTE Hoses of a similar construction for suction and discharge for fire-fighting are specified in ISO 14557, *Fire-fighting hoses — Rubber and plastics suction hoses and hose assemblies.*

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 176:2005, Plastics — Determination of loss of plasticizers — Activated Carbon method

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 1746, Rubber or plastics hoses and tubing - Bending tests

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

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

ISO 11758:1995, Rubber and plastics hoses — Exposure to a xenon arc lamp — Determination of changes in colour and appearance

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

Terms and definitions 3

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

4 Classification

Three types of hoses are specified, related to the maximum working pressure and suction pressure (see Tables 4 and 5):

- type 1: light-duty service;
- type 2: medium-duty service;
- type 3: heavy-duty service.

All types are designed to operate in the ambient temperature range – 10 $^{\circ}$ C to + 55 $^{\circ}$ C.

Materials and construction 5

The hoses shall be as uniform as commercially practicable in colour and other physical properties. They shall consist of a flexible thermoplastics material supported within the material by a helix of thermoplastic material of a similar molecular structure. The reinforcing and flexible components of the wall shall be fused together and free from visible cracks, porosity, foreign inclusions or other defects such as are liable to cause failure of " Cheratede the hose in service.

Dimensions and tolerances 6

Nominal bores, internal diameters and tolerances 6.1

The internal diameters and tolerances of hoses of different nominal bores shall meet the requirements given in Table 1.

6.2 Length tolerances

The tolerances on cut lengths shall be in accordance with ISO 1307.