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Rubber and plastics hoses and hose assemblies — Vocabulary

Tuyaux et flexibles en caoutchouc et en plastique — Vocabulaire

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Foreword

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This document was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 1, *Rubber and plastics hoses and hose assemblies*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 218, *Rubber and plastics hoses and hose assemblies,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 8330:2014), which has been technically revised.

The main changes are as follows:

- the structure of the document is now divided into subclauses as follows:
  - General 3.1;
  - Hose types 3.2;
  - Hose parts and components other than the reinforcement and end 3.3;
  - Hose reinforcement parts and components 3.4;
  - Hose end types 3.5;
  - Hose assembly terms 3.6;
  - Sizes and geometrical properties of hoses and hose assemblies 3.7;
  - Mechanical properties 3.8;
  - Hose production methods and tools 3.10;
  - Hose tests and operation conditions 3.11;

  - Hose and hose assembly deformations and defects 3.12;
- the numbering and order of the terms has been revised;
- alphabetical index has been added;
- the following terms have been added:
  - barb;
  - burst;
  - cure (with vulcanization);
  - helix wire;
  - identification yarn;
  - OS&D hose;
  - rigid mandrel;
  - semi-rigid hose;
  - socketshell (to ferrule);
  - spiralled wire cord;
  - tracer yarn;
- the following terms have been removed:
  - body wire;
  - brand;
  - design pressure;
  - dogleg;
  - helical cord;
  - lay;
  - mandrel-made hose;
  - nominal bore;
  - OSD hose;
  - protected hose;
  - quick-acting connection;
  - rated system pressure;
  - tolerance;
  - warp;
  - weft;
  - coupling adapter;

- shell clamp and split clamp;

— the definitions to the following terms have been amended:

- carcass;
- compound;
- embedded helix;
- end reinforcement;
- female;
- flexural stiffness;
- helix;
- hose deformation;
- hybrid hose;
- hydraulic hose;
- hydrostatic stability test;
- knitted hose;
- male;
- mandrel-built hose;
- marker yarn;
- marking;
- moulded hose;
- plain end;
- quick connection;
- reusable hose fitting;
- sleeve;
- straight end;
- twin hose;
- vacuum test;
- vulcanization;
- wire.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Rubber and plastics hoses and hose assemblies — Vocabulary

1 Scope

This document defines terms used in the hose industry.

Recommended terminology for electrical conductivity and resistance of rubber and plastics hoses and hose assemblies can be found in ISO 8031:2020, Annex A.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1 General

3.1.1
hose
flexible tube consisting of a *lining* (3.3.2), *reinforcement* (3.4.1) and, usually, a *cover* (3.3.6)

3.1.2
hose assembly
hose (3.1.1) with a *hose fitting* (3.6.4.1) attached to one or both ends

3.1.3
hydraulic hose
hose (3.1.1) with a *braid* (3.4.10) or spiral *reinforcement* (3.4.1) designed for systems which transfer power via fluid under pressure

3.1.4
tubing
flexible polymeric tube without *reinforcement* (3.4.1)

3.1.5
operating conditions
pressure, temperature, motion and environment (including the conveyed fluid) to which a hose (assembly) may be subjected

3.1.6
compound
DEPRECATED: rubber
intimate mixture of a rubber or rubbers or other polymer-forming materials with all the ingredients necessary that are combined to give the desired properties when used in the manufacture of a hose

[SOURCE: ISO 1382:2012, 3.105, modified — "for the finished product" is replaced by "that are combined to give the desired properties when used in the manufacture of a hose".]

3.2 Hose types

3.2.1 Hose types based on shape and properties

3.2.1.1
hardwall hose
hose (3.1.1) with a built-in wall *reinforcement* (3.4.1) or with a solid elastomer wall of sufficient thickness to prevent the hose to flatten during *bending* (3.7.2.1) or coiling when empty

3.2.1.2
softwall hose
hose (3.1.1) without a supporting helix of rigid or semi-rigid material

3.2.1.3
rough bore hose
hose (3.1.1) in which a reinforcing *helical wire* (3.4.2.5), or its shape, is exposed in the *bore* (3.3.1)

3.2.1.4
smooth-bore hose
hose (3.1.1) in which no reinforcing wire helix or its shape is exposed on the inner surface of the *lining* (3.3.2)

3.2.1.5
oil suction and discharge hose
OS&D hose
hose used for oil suction and discharge in many types of operation

3.2.1.6
layflat hose
collapsible hose
softwall hose (3.2.1.2) which, when unpressurized internally, collapses to such an extent that the inner faces of the *bore* (3.3.1) make contact and the hose cross-section appears flat

3.2.1.7
convoluted hose
hose (3.1.1) fluted helically (externally and/or internally)

3.2.1.8
externally convoluted hose
hose (3.1.1) containing a reinforcing *helix* (3.4.2) in which the outer cover has been formed into corrugations between the turns of the helix

Note 1 to entry: Such hoses may be *rough bore* (3.2.1.3), semi-embedded bore or *smooth bore* (3.2.1.4).

3.2.1.9
corrugated hose
hose (3.1.1) with a *cover* (3.3.6) fluted circumferentially with bellows-like corrugations (externally and/or internally)

Note 1 to entry: Hoses are in production today with internal circumferential corrugations.

3.2.1.10
spiralled hose
hose (3.1.1) reinforced with strands wound helically in layers, with adjacent layers in opposing directions

3.2.1.11
pre-shaped hose
pre-formed hose
hose vulcanized or formed into a particular shape

3.2.1.12
semi-rigid hose
hose that maintains its round cross-section even when unpressurized

3.2.2 Hose types based on reinforcement and other components

3.2.2.1
wire-reinforced hose
hose (3.1.1) in which the primary *reinforcement* (3.4.1) is wire

3.2.2.2
helix-reinforced hose
hose (3.1.1) in which reinforcing *helical wire(s)* or *plastic* (3.4.2.5) are incorporated

3.2.2.3
armoured hose
hose (3.1.1) with a protective covering, generally applied as a *braid* (3.4.10) or *helix* (3.4.2), to minimize physical damage

3.2.2.4
woven hose
hose (3.1.1) in which *reinforcement* (3.4.1) has been applied by circular weaving

3.2.2.5
round-woven hose
hose (3.1.1) with a round-woven *reinforcement* (3.4.1)

EXAMPLE Fire-fighting hose, rig supply hose.

3.2.2.6
wrapped-ply hose
hose (3.1.1) in which a *reinforcement* (3.4.1) of *woven fabric* (3.4.4.1) is wrapped in layers

3.2.2.7
braided hose
hose (3.1.1) in which the reinforcement has been applied as interwoven spiral strands

3.2.2.8
knitted hose
hose (3.1.1) with *knitted ply* (3.4.13)

3.2.3 Hose types based on production method

3.2.3.1
moulded hose
hose (3.1.1) vulcanized in a rigid mould or inside a plastic sheath that is subsequently removed

3.2.3.2
machine-made hose
hose (3.1.1) not made by hand on a mandrel

Note 1 to entry: Particularly, *wrapped-ply hose* (3.2.2.6).

3.2.3.3
mandrel-built hose
hose (3.1.1) fabricated on a *mandrel* (3.10.1)

3.2.3.4
twin hose
two hoses linked in parallel to each other during manufacture

3.2.3.5
composite hose
multilayer hose
hose (3.1.1) consisting of layers of non-vulcanized materials in sheeting form held together by two metal or plastics spirals

3.2.3.6
hand-built hose
hose (3.1.1) made by hand on a *mandrel* (3.10.1), reinforced by textile or wire, or combination of both, and a *cover* (3.3.6)

3.2.4 Hose types based on material

3.2.4.1
rubber hose
hose (3.1.1) consisting of a *lining* (3.3.2) made of vulcanized rubber with a *reinforcement* (3.4.1), generally textile or metal wire, and usually a *cover* (3.3.6) made of vulcanized rubber

3.2.4.2
plastics hose
hose (3.1.1) consisting of a *lining* (3.3.2) made of plastics material with a *reinforcement* (3.4.1) of textile material or metal wire and a *cover* (3.3.6) of plastics material

3.2.4.3
thermoplastics hose
hose (3.1.1) consisting of a *lining* (3.3.2) made of thermoplastic material with *reinforcement* (3.4.1) of a textile material or metal wire and a *cover* (3.3.6) made of thermoplastic material

3.2.4.4
hybrid hose
hose consisting of a rubber *lining* (3.3.2) and thermoplastic *cover* (3.3.6) or thermoplastic lining and rubber cover

3.3 Hose parts and components other than the reinforcement and end

3.3.1
bore
inside of a hose through which the material to be conveyed passes

3.3.2
lining
innermost continuous all-rubber or plastics element of a hose

3.3.3
hose wall
material between the internal and external surfaces of a *hose* (3.1.1)

3.3.4
veneer
thin innermost layer forming an integral part of the hose *lining* (3.3.2), applied for some special purpose

3.3.5
breaker ply
open mesh *fabric* (3.4.4) used to enhance the bond between a hose *lining* (3.3.2) or *cover* (3.3.6) and its *carcass* (3.4.15) and to spread impact

Note 1 to entry: This element can also add *reinforcement* (3.4.1) to these components.

3.3.6
cover
outer layer covering the *reinforcement* (3.4.1)

3.3.7
rubber tubing
flexible tube made of vulcanized rubber without a *reinforcement* (3.4.1)

3.3.8
jacket
seamless tubular braided or woven ply generally on the outside of a hose

3.3.9
marking
mark or symbol identifying the *hose* (3.1.1) in accordance with the relevant International Standard

Note 1 to entry: In the relevant International Standard, a colour code may be included at the option of the manufacturer.

Note 2 to entry: The mark or symbol is embossed, inlaid or printed on the hose, *coupling* (3.6.4.1) or *hose assembly* (3.1.2).

3.3.10
barrier
thin layer of film (polymeric) within the construction of the hose for preventing fluid or gas from diffusing through the *hose wall* (3.3.3) to the atmosphere

3.3.11
armouring
protective covering over a hose, generally applied as a *braid* (3.4.10) or *helix* (3.4.2) to prevent mechanical damage or to support the *reinforcement* (3.4.1) of a hose section

3.4 Hose reinforcement parts and components

3.4.1
reinforcement
non-rubber strengthening member of a hose

Note 1 to entry: See *carcass* (3.4.15).

3.4.2
helix
shape formed by spiralling a wire or other material around or within the body of the hose

3.4.2.1
embedded helix
helical wire (3.4.2.5) entirely enclosed by the *hose wall* (3.3.3)

3.4.2.2
embedding layer
layer of rubber in which is embedded a reinforcing *helix* (3.4.2) of wire or other material

3.4.2.3
filler strip
material added during fabrication of a hose containing a supporting *helix* (3.4.2) to fill the spaces between the successive turns of the helix

3.4.2.4
semi-embedded helix
semi-embedded spiral
helical wire (3.4.2.5), concentric with the *bore* (3.3.1), semi-embedded in the *lining* (3.3.2) of a *hose* (3.1.1) so that only a portion of the wire is exposed

3.4.2.5
helical wire
helix wire
spiralled wire cord
wire or wire cord spiralled over or under the *reinforcement* (3.4.1) around or within the wall of the hose construction to prevent flattening or *kinking* (3.12.4) during *bending* (3.7.2.1) of the hose or under vacuum

Note 1 to entry: The helical wire may be bonded or unbonded to the hose wall by design.

3.4.3
wire cord
reinforcement material of thin metal wires which consist of several strands of fine wires twisted together

3.4.3.1
textile cord
reinforcement material of textile yarns which consists of several strands of fine yarns twisted together

3.4.4
fabric
plane structure produced by interlaced *yarns* (3.4.6), fibres or filaments

3.4.4.1
woven fabric
flat structure composed of two series of interlaced *yarns* (3.4.6) or filaments, one parallel to the axis of the *fabric* (3.4.4) and the other transverse

3.4.4.2
bias cut
cut made diagonally across a textile material at an angle less than 90° to the longitudinal axis

3.4.4.3
bias seam
seam at which *bias cut* (3.4.4.2) fabrics are joined together

3.4.4.4
bias angle
smaller included angle between the warp threads of a cloth and a diagonal line cutting across the warp threads

3.4.5
reinforcement angle
angle formed by the intersection of a *reinforcement* (3.4.1) strand and a line parallel to the axis of the *hose* (3.1.1)

3.4.6
yarn
slender, very long, ribbon-like or cylinder-shaped composition of filaments which are twisted, laid or spun together