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Aerospace fluid systems and components — Vocabulary —

Part 1: Hose assemblies

Systèmes aérospatiaux de fluides et éléments constitutifs — Vocabulaire —

Partie 1: Assemblages de tuyaux flexibles

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Foreword

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ISO 8153-1 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 10, *Aerospace fluid systems and components*.

ISO 8153 consists of the following parts, under the general title *Aerospace fluid systems and components — Vocabulary*:

— *Part 1: Hose assemblies*

The following parts are under preparation:

— *Part 2: Fittings*

Aerospace fluid systems and components — Vocabulary —

Part 1: Hose assemblies

Scope

This part of ISO 8153 defines terms used for all types of hose assemblies.

General terms can be made more precise through the addition of supplementary terminology relating to the design, range of application and/or the material of the hose/hose assembly.

Terms and definitions specific to metallic hose assemblies are given in ISO 7369.

NOTE Certain concepts used in this part of ISO 8153 are not applicable to all types of hose assemblies, but only to specific types, e.g. the term “insert” does not apply to a flexible metal hose without an insert as defined by this part of ISO 8153.

1 General terms

1.1
hose assembly
hose, ready for use, equipped with hose fittings at ends

NOTE See Figure 1.

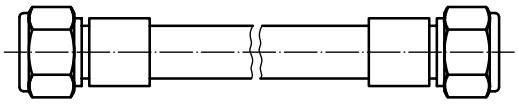


Figure 1 — Hose assembly

1.2
hose line
series of several hose assemblies connected to each other

NOTE See Figure 2.

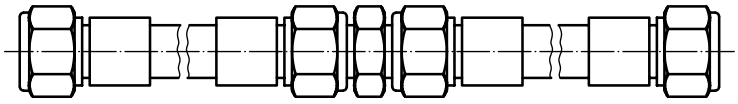
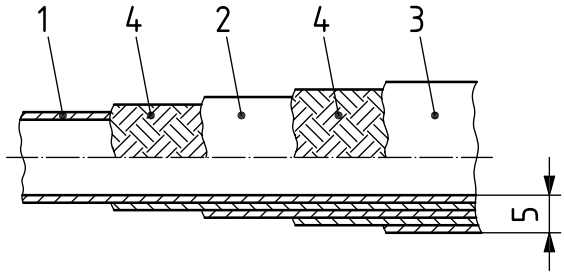


Figure 2 — Hose line

1.3
hose
flexible tubular product consisting of an inner tube and generally equipped with a reinforcement, wrap(s) and/or braid(s)

NOTE 1 In US English, the common term for a hose consisting of one layer only is “tubing”.

NOTE 2 See Figure 3.



Key
1 inner tube
2 intermediate layer
3 hose cover
4 braid
5 hose wall

Figure 3 — Hose

2 Terms related to hose material

2.1
elastomeric hose
hose with inner tube made of elastomeric materials

2.2
polytetrafluoroethylene hose
PTFE hose
hose with inner tube made of polytetrafluoroethylene (PTFE)

2.3
plastic hose
hose with inner tube made of plastic material other than PTFE

2.4
metal hose
hose with inner tube made from helical or annular convoluted metallic material

NOTE See ISO 7369.

3 Terms related to hose design

3.1
braided hose
hose with reinforcement consisting of one or more braids

3.2
spiral hose
hose with reinforcement consisting of one or more wraps, each alternate wrap being wound in the opposite direction

3.3
braided and spiral hose
hose with reinforcement consisting of one or more wraps and braids

3.4
convoluted flexible PTFE hose
hose with corrugated inner liner fabricated from PTFE tube, or PTFE tape, helically formed to the axis of the hose

NOTE 1 Flexibility is obtained by bending the corrugations.

NOTE 2 See ISO 7313.

4 Terms related to hose application

4.1
sleeve hose
hose for sleeve attachment
socketless hose of specific length which can be slipped over rigid tube ends

4.2
preformed hose
hose of which part is permanently set to meet installation requirements

4.3
suction hose
hose that is usable under positive and relative negative pressure

5 Terms related to hose construction

5.1
hose wall
composition of the hose between its inner and outer diameter

NOTE See Figure 3.

5.2
layer
part of the hose wall with a uniform structure

5.2.1
inner tube
layer core
inner part of the hose which performs the function of containing fluid

NOTE See Figure 3.

5.2.2
intermediate layer
layer incorporated between the inner tube and the outermost layer of the hose, made of various reinforcement elements

NOTE See Figure 3.

5.2.3
hose cover
outer layer
outermost layer of the hose if it is not covered by reinforcement

NOTE See Figure 3.

5.2.4
outer protective cover
layer forming the outer part of the hose wall

EXAMPLE Outer braids or spirals.

NOTE See **protective sleeve** (9.1).

5.2.5
reinforcement
one or more braids or wraps or helices rendering the hose sufficiently resistant to withstand pressure and/or vacuum

5.2.6
braid
reinforcement texture made from cross-linked yarn or wire

NOTE See Figure 3.

5.2.7
helix
helical wire placed in the hose wall to ensure form stability of the hose in the event of a vacuum or external loads

5.2.8
wrap
reinforcement made up of an assembly of yarns or wires helically wrapped to ensure resistance to pressure

6 Terms related to hose assembly

6.1
hose fitting
component, or subassembly of a hose assembly, whose purpose is to connect hoses to an appropriate fluid circuit

NOTE 1 The terms defined in Clause 6 apply to flexible metal hose assemblies only under certain conditions, in view of the fact that these are generally supplied completely mounted.

NOTE 2 A clear designation includes the following (in the order given):

— hose side configuration;

— connecting end configuration.

The end fitting can be equipped with a bend or an elbow. Some end fittings can be equipped with a swivel nut, which can be designed with or without a thrust wire.

6.2 Configuration of hose side of fitting

NOTE See Figure 4.

6.2.1
separable end fitting
hose fitting which consists of screwed components and which can be assembled without special tools

6.2.2
swaged fitting
crimped fitting
fitting consisting mainly of an insert held by a swaged or crimped socket on the hose

NOTE Reuse is not possible – except perhaps for the insert. Special tools are required for assembly.

6.2.3
clamp fitting
segment fitting
hose fitting consisting mainly of an insert held by externally mounted clamp segments

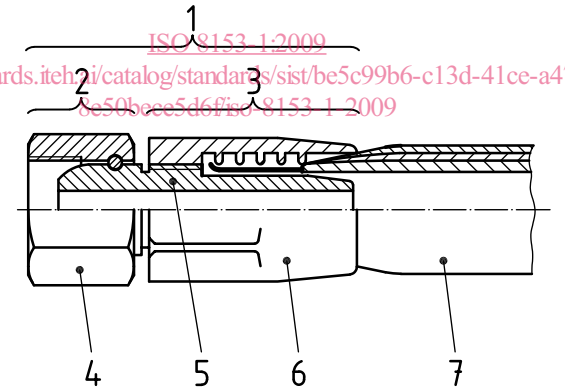
NOTE It is reusable and can be assembled without special tools.

6.2.4
band clamp fitting
fitting consisting mainly of an insert held by an externally mounted band clamp

NOTE It is reusable and can be assembled without special tools.

6.2.5
socketless fitting
fitting consisting of an insert without socket or clamp

NOTE The hose is simply slipped over the insert and is held by its elastic deformation.



Key
1 hose fitting
2 connection end
3 hose side
4 female swivel nut
5 insert
6 socket
7 hose

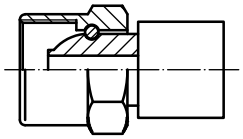
Figure 4 — Example of hose with toric sealing fitting and swivel nut with thrust wire

6.3 Configuration of connecting end of fitting

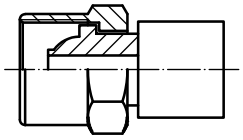
6.3.1
globe seal end female fitting
fitting with spherically-shaped, toric or tapered, sealing end and female swivel nut

NOTE 1 See Figure 5.

NOTE 2 Figure 5 a) shows a wired-on swivel nut with thrust wire; Figure 5 b) shows an entrapped swivel nut



a) With a swivel nut with thrust wire



b) With an entrapped swivel nut

Figure 5 — Globe seal end female fitting with a toric fitting and a swivel nut

6.3.2
male thread end
hose fitting with stationary male thread

NOTE See Figure 6.

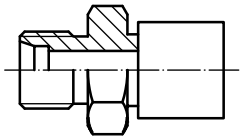


Figure 6 — Male thread end with internal cone

6.3.3
male thread end for port connection
hose fitting with stationary male thread for port holes

NOTE See Figure 7.

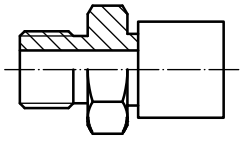


Figure 7 — Male thread end with an external flat sealing for port hole connection

6.3.4
stand pipe end
hose fitting with tubular end

NOTE See Figure 8.

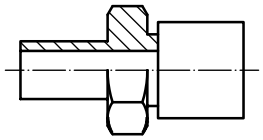


Figure 8 — Stand pipe end

6.3.5
flange end
hose fitting with fixed or loose flange

NOTE See Figure 9.

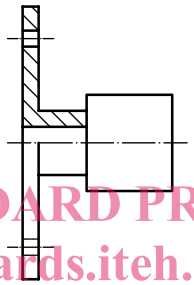


Figure 9 — Flange end with a fixed flange

6.3.6
banjo end
hose fitting with banjo configuration

NOTE See Figure 10.

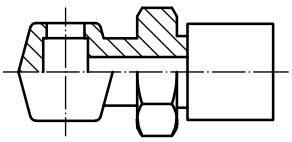


Figure 10 — Banjo end

6.4 Fitting component

6.4.1
nipple
component inserted into the hose and which constitutes the end side connection of the fitting

NOTE A clear designation includes the following (in the order given):

— hose end configuration (see 6.4.1.1 to 6.4.1.3);

— fitting end configuration (see 6.3).

See Figure 11.