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**Pipework — Metal hoses and hose  
assemblies — Vocabulary**

*Tuyauteries — Tuyaux et tuyauteries métalliques flexibles —  
Vocabulaire*

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 342, *Metal hoses, hose assemblies, bellows and expansion joints*, in collaboration with ISO Technical Committee ISO/TC 5, *Ferrous metal pipes and metallic fittings*, Subcommittee SC 11, *Metal hoses and expansion joints*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fourth edition cancels and replaces the third edition (ISO 7369:2004), which has been technically revised.

The main changes compared to the previous edition are as follows:

- shift updated normative references into Bibliography;
- introduction of new definitions related to "design pressure", "metal braid strand", "braided braid" and "nominal size of metal hose assembly";
- revision of definitions related to "maximum allowable pressure", "maximum allowable temperature" and "minimum allowable temperature";
- update of [Annex A](#) to include French, German and Dutch terms and deletion of Annexes B, C, D and E.

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](http://www.iso.org/members.html).

## Introduction

It was decided to produce a standard under the Vienna Agreement on technical cooperation between ISO and the European Committee for Standardization CEN in order to maintain one document. The opportunity was taken to re-format and add additional information, which was not available when the standard was originally produced.

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# Pipework — Metal hoses and hose assemblies — Vocabulary

## 1 Scope

This document defines current terms concerning metal hoses, metal hose assemblies and component parts.

This document applies to:

- a) stripwound metal hoses and hose assemblies;
- b) corrugated metal hoses and hose assemblies.

NOTE 1 These hoses can be used braided, covered or lined.

NOTE 2 Equivalent terms in English, French, German and Dutch are given in [Annex A](#).

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

### 3.1 General

#### 3.1.1

##### **metal hose**

metal duct, generally of circular or polygonal section, able to withstand repeated bending without damage

#### 3.1.1.1

##### **stripwound metal hose**

hose manufactured from a helically wound pre-formed strip, generally with a right-hand lead, where the turns, with or without *packing* (3.2.1.2), are connected together by single or double overlapping and *flexibility* (3.1.11) is obtained by sliding adjacent turns over each other

#### 3.1.1.2

##### **corrugated metal hose**

pressure-tight hose made from tube or from *strip* (3.2.1.1) with corrugations, helicoidal or annular to the axis of the hose, made by deforming the metal, and where *flexibility* (3.1.11) and *pliability* (3.1.12) are obtained by bending of the corrugations

#### 3.1.2

##### **metal hose assembly**

assembly of a *metal hose* (3.1.1) with its *end fittings* (3.2.2.4)

### 3.1.3

#### **nominal pressure**

##### **PN**

numerical designation which is a convenient rounded number for reference purposes

Note 1 to entry: This defined number is a dimensionless number indirectly related to a pressure value in bar (1 bar = 0,1 MPa).

Note 2 to entry: The definition is adapted from ISO 7268. See also EN 1333.

### 3.1.4

#### **maximum operating pressure**

maximum pressure that may be reached in an installation

Note 1 to entry: Care should be taken to ensure that both the temperature and the pressure are quoted together.

### 3.1.5

#### **design pressure**

maximum pressure at the design temperature for which the hose assembly needs to be designed, as specified by the customer

Note 1 to entry: The design pressure in an installation should be equal to or higher than the *maximum operating pressure* (3.1.4).

### 3.1.6

#### **maximum allowable pressure**

maximum pressure at the design temperature for which the hose assembly is designed, as specified by the manufacturer

Note 1 to entry: The maximum allowable pressure should be equal to or higher than the *design pressure* (3.1.5).

Note 2 to entry: The maximum allowable pressure should be lower than or equal to the lowest value of the maximum allowable pressures of its components.

Note 3 to entry: Care should be taken to ensure that both the temperature and the pressure are quoted together.

### 3.1.7

#### **burst pressure**

pressure reached before any part of the hose assembly fails by leakage or rupture of any of the components

### 3.1.8

#### **test pressure**

differential pressure to which the hose assembly or the component is subjected to during a test at ambient temperature

### 3.1.9

#### **maximum allowable temperature**

maximum temperature at the *design pressure* (3.1.5) for which the hose assembly is designed, as specified by the manufacturer

### 3.1.10

#### **minimum allowable temperature**

minimum temperature at the *design pressure* (3.1.5) for which the hose assembly is designed, as specified by the manufacturer

### 3.1.11

#### **flexibility**

capability of a *metal hose* (3.1.1) to be repeatedly bent during operation

**3.1.12****pliability**

capability of a *metal hose* ([3.1.1](#)) or tube to be bent easily for installation

**3.1.13****bend radius**

radius measured to the centre line of the hose

**3.1.14****minimum bend radius**

minimum radius at which the hose is designed to operate

**3.2 Construction****3.2.1 Metal hoses (stripwound or corrugated)****3.2.1.1****strip**

sheet metal suitable for cold forming

**3.2.1.2****packing**

component used to improve the leak-tightness of *stripwound metal hoses* ([3.1.1.1](#))

**3.2.1.3****profile**

geometrical form of a hose wall when sectioned along its axis

**3.2.1.4****cross section**

geometrical form of a hose when sectioned perpendicular to its axis

**3.2.1.5****nominal size of metal hose****DN**

alphanumeric designation of size for components of a pipework system, which is used for reference purposes

Note 1 to entry: It comprises the letters DN followed by a dimensionless whole number, which is indirectly related to the physical size, in millimetres, of the *inside diameter* ([3.2.1.6](#)).

Note 2 to entry: This defined number does not represent a measurable value and should not be used for calculation purposes except where specified in the relevant standard.

Note 3 to entry: The definition is adapted from ISO 6708.

**3.2.1.6****inside diameter****bore**

diameter of the largest sphere which can pass through the hose

**3.2.1.7****outside diameter**

diameter of the cylinder enveloping the hose when in a rectilinear position

**3.2.1.8****pitch of hose profile**

distance between two successive identical points measured on the *profile* ([3.2.1.3](#)) on the rectilinear hose

**3.2.1.9**

**braid**

tubular woven stocking of metal *strands* (3.2.1.9.1), or textile or plastic threads used to provide pressure strength and/or *external protection* (3.2.1.10)

**3.2.1.9.1**

**metal braid strand**

group of parallel wires used for plain *braid* (3.2.1.9) or wires woven together to form a braided strand

**3.2.1.9.2**

**braided braid**

*braid* (3.2.1.9) that is manufactured from previously braided *strands* (3.2.1.9.1)

**3.2.1.10**

**external protection**

external component partly or wholly covering the hose

EXAMPLE Protective coil, stripwound hose, rubber sleeves, fire protection, etc.

**3.2.1.11**

**internal protection**

component used to protect the hose internally

**3.2.1.12**

**coiling**

method of packaging *metal hoses* (3.1.1)

**3.2.2 Metal hose assemblies**

**3.2.2.1**

**overall length**

length including *end fittings* (3.2.2.4) of the straightened-out hose assembly, unless otherwise specified

**3.2.2.2**

**nominal size of metal hose assembly**

**DN**

alphanumeric designation of size for components of a pipework system, which is used for reference purposes, and which comprises the letters DN followed by a dimensionless whole number, which is indirectly related to the physical size, in millimetres, of the *inside diameter* (3.2.1.6)

Note 1 to entry: This defined number does not represent a measurable value and should not be used for calculation purposes except where specified in the relevant standard.

Note 2 to entry: The definition is adapted from ISO 6708.

**3.2.2.3**

**ferrule**

metal sleeve used to facilitate the *attachment* (3.2.2.5) of *braid(s)* (3.2.1.9) and *end fittings* (3.2.2.4) to the *metal hose* (3.1.1)

**3.2.2.4**

**end fitting**

permanently attached item, which allows *metal hose* (3.1.1) to be connected to other components

**3.2.2.5**

**attachment**

method of fixing *end fittings* (3.2.2.4) on to a *metal hose* (3.1.1)

## Annex A (informative)

### Equivalent terms in English, French, German and Dutch

| Reference                 | English                                | French   | German                                    | Dutch                                   |
|---------------------------|--|--|---|---|
| <a href="#">3.1.1</a>     | metal hose                             | tuyau métallique flexible                          | Metallschlauch                            | metalen slang                           |
| <a href="#">3.1.1.1</a>   | stripwound metal hose                  | tuyau métallique flexible agrafé                   | gewickelter Metallschlauch                | gewikkelde metalen slang                |
| <a href="#">3.1.1.2</a>   | corrugated metal hose                  | tuyau métallique flexible onduleux                 | gewellter Metallschlauch                  | gegolfde metalen slang                  |
| <a href="#">3.1.2</a>     | metal hose assembly                    | tuyauterie métallique flexible                     | Metallschlauchleitung                     | geassembleerde metalen slang            |
| <a href="#">3.1.3</a>     | nominal pressure PN                    | pression nominale PN                               | Nenndruck PN                              | nominale druk PN                        |
| <a href="#">3.1.4</a>     | maximum operating pressure             | pression maximale en service                       | höchster Arbeitsdruck                     | maximale werkdruk                       |
| <a href="#">3.1.5</a>     | design pressure                        | pression de calcul                                 | Auslegungsdruck                           | ontwerpdruk                             |
| <a href="#">3.1.6</a>     | maximum allowable pressure             | pression maximale admissible                       | höchster zulässiger Druck                 | maximale toelaatbare druk               |
| <a href="#">3.1.7</a>     | burst pressure                         | pression d'éclatement                              | Berstdruck                                | barst druk                              |
| <a href="#">3.1.8</a>     | test pressure                          | pression d'épreuve                                 | Prüfdruck                                 | proef druk (test druk)                  |
| <a href="#">3.1.9</a>     | maximum allowable temperature          | température maximale admissible                    | höchste zulässige Temperatur              | maximale toelaatbare temperatuur        |
| <a href="#">3.1.10</a>    | minimum allowable temperature          | température minimale admissible                    | niedrigste zulässige Temperatur           | minimale toelaatbare temperatuur        |
| <a href="#">3.1.11</a>    | flexibility                            | flexibilité  | Flexibilität                              | flexibiliteit                           |
| <a href="#">3.1.12</a>    | pliability                             | pliabilité   | Biegsamkeit                               | buigzaamheid                            |
| <a href="#">3.1.13</a>    | bend radius                            | rayon de courbure                                  | Biegeradius                               | buigradius                              |
| <a href="#">3.1.14</a>    | minimum bend radius                    | rayon de courbure minimal                          | kleinster Biegeradius                     | minimale buigradius                     |
| <a href="#">3.2.1</a>     | metal hoses (stripwound or corrugated) | tuyaux métalliques flexibles                       | Metallschläuche (gewickelt oder gewellt)  | metalen slangen (gewikkeld of gegolfd)  |
| <a href="#">3.2.1.1</a>   | strip                                  | feuillard  | Band                                      | band                                    |
| <a href="#">3.2.1.2</a>   | packing                                | joint  | Dichtung                                  | afdichting                              |
| <a href="#">3.2.1.3</a>   | profile                                | profile  | Profil                                    | profiel                                 |
| <a href="#">3.2.1.4</a>   | cross section                          | section  | Querschnitt                               | doorsnede                               |
| <a href="#">3.2.1.5</a>   | nominal size of metal hose (DN)        | diamètre nominal DN (du tuyau métallique flexible) | Nennweite DN eines Metallschlauchs        | nominale maat van de metalen slang (DN) |
| <a href="#">3.2.1.6</a>   | inside diameter (bore)                 | diamètre intérieur                                 | Innendurchmesser oder lichter Durchmesser | inwendige diameter                      |
| <a href="#">3.2.1.7</a>   | outside diameter                       | diamètre extérieur                                 | Aussendurchmesser                         | uitwendige diameter                     |
| <a href="#">3.2.1.8</a>   | pitch of hose profile                  | pas d'un tuyau                                     | Wellenlänge des Schlauchprofils           | steek of spoed van slangprofiel         |
| <a href="#">3.2.1.9</a>   | braid                                  | trousse  | Umflechtung                               | vlecht                                  |
| <a href="#">3.2.1.9.1</a> | metal braid strand (strand)            | fuseau de trousse métallique (fuseau)              | Drahtbündel                               | gevlochten metaal bundel (bundel)       |