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Pipework — Metal hoses and hose assemblies — Vocabulary

Tuyauteries — Tuyaux et tuyauteries métalliques flexibles — Vocabulaire

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Foreword

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This document was prepared by the European Committee for Standardization (CEN) TechnicalCommittee 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.

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.

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