SLOVENSKI STANDARD
SIST EN 15266:2025

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Upogljivi valoviti cevni kompleti iz nerjavnega jekla za plinske napeljave z delovnim tlakom do 0,2 MPa (2 bara)

Stainless steel pliable corrugated tubing kits for gas installation pipework with an operating pressure up to 0,2 MPa (2 bar)

Nichtrostende biegbare Wellrohrbausätze für Gasleitungsanlagen mit einem Arbeitsdruck bis 0,2 MPa (2 bar)

Kits de tuyaux onduleux pliables en acier inoxydable pour les installations intérieures à gaz avec une pression de service inférieure ou égale à 0,2 MPa (2 bar)

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Stainless steel pliable corrugated tubing kits for gas installation pipework with an operating pressure up to 0,2 MPa (2 bar)

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This European Standard was approved by CEN on 18 November 2024.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 15266:2024) has been prepared by Technical Committee CEN/TC 342 “Metal hoses, hose assemblies, bellows and expansion joints”, the secretariat of which is held by SNV.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2025, and conflicting national standards shall be withdrawn at the latest by June 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 15266:2007.

In comparison with the previous edition, the following technical modifications have been made:

— operating pressure up to 0,2 MPa (2 bar).

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

This document contains the general safety requirements relating to the safety of persons, animals, and property and the protection of their environment.

The requirements of this document concern designers, manufacturers, suppliers and importers of stainless steel pliable corrugated gas tubing kits for gas installation pipework.

Installation and mandatory strength and tightness tests before commissioning should consider the local application regulations where they exist.

This document is applicable to:

— new installation pipework;

— replacements of existing installations; or

— extensions to existing installations.

Stainless steel pliable corrugated gas tubing kits can be used in conjunction with other approved gas pipework.

This document defines performance requirements for the products to be placed on the European Economic Area EEA.

1 Scope

This document specifies the requirements for material, design, manufacture, testing, marking and documentation of stainless steel pliable corrugated gas tubing kits for gas installation pipework with a maximum allowable pressure (PS):

— less than or equal to 0,5 bar within a nominal size range from DN 10 to DN 50 (class 1); and

— less than or equal to 2 bar within a nominal size range from DN 10 to DN 25 (class 2).

This document applies to stainless steel pliable corrugated gas tubing kits used for 1st, 2nd and 3rd family gases (see EN 437) in residential, commercial and industrial gas installations to be installed outdoors or indoors at a temperature range from –20 °C to +60 °C.

This document does not apply to:

— pliable tubing without cover;

— corrugated safety metal hose assemblies for connection to moveable appliances.

NOTE This document does not cover the installation aspects of stainless steel pliable corrugated gas tubing kits.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 1363-1:2020, *Fire resistance tests — Part 1: General requirements*

EN 1775:2007, *Gas supply — Gas pipework for buildings — Maximum operating pressure less than or equal to 5 bar — Functional recommendations*

EN 10028-7, *Flat products made of steels for pressure purposes — Part 7: Stainless steels*

EN 10088-3, *Stainless steels — Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resistant steels for general purposes*

EN 10226-1, *Pipe threads where pressure tight joints are made on the threads — Part 1: Taper external threads and parallel internal threads — Dimensions, tolerances and designation*

EN 10242, *Threaded pipe fitting in malleable cast iron*

EN 12164, *Copper and copper alloys — Rod for free machining purposes*

EN 12165, *Copper and copper alloys — Wrought and unwrought forging stock*

EN 13501-1:2018, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1)*

EN ISO 6509-1, *Corrosion of metals and alloys — Determination of dezincification resistance of copper alloys with zinc — Part 1: Test method (ISO 6509-1)*

EN ISO 7369:2020, *Pipework — Metal hoses and hose assemblies — Vocabulary (ISO 7369:2020)*

EN ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227)*

EN ISO 10380:2012, *Pipework — Corrugated metal hoses and hose assemblies (ISO 10380:2012)*

EN ISO 11925-2, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2)*

ISO 6957, *Copper alloys — Ammonia test for stress corrosion resistance*

3 Terms, definitions and abbreviations

For the purposes of this document, the terms and definitions given in EN ISO 7369:2020 and EN 1775:2007, and the following apply.

3.1
pliable tubing
PLT
corrugated tubing capable of being bent easily by hand a limited number of times, incorporating an outer cover applied by the manufacturer at the time of production

3.2
PLT kit
pliable tubing with its related components obtained or specified from one manufacturing entity having design and performance responsibility for the kit

3.3
bend radius
radius measured to the centre line of the pliable tubing

3.4
PLT fitting
unique fitting using mechanical attachment methods, in which tightness is achieved with or without seals, excluding other joining methods such as welding, brazing, soldering or gluing

3.4.1
end fitting
PLT fitting intended to join pliable tubing to an external component

3.4.2
coupling
PLT fitting intended to join two sections of pliable tubing

3.4.3
tee
PLT fitting to join three sections of pliable tubing

3.4.4
manifold
PLT fitting designed to join 4 or more sections of pliable tubing

3.5
seal
any part intended to provide tightness within a PLT fitting

3.6
additional protection
outer sheath intended to protect the connection between the pliable tubing and a PLT fitting or eventual damage occurred to the cover during or after installation of the pliable tubing from corrosion or mechanical damage

Note 1 to entry: This sheath has the same chemical resistance as the cover.

EXAMPLE Wrapping tape or heat shrink tube

3.7
PLT support
element used to attach the PLT kit to the structure of the building

3.8
rated flow rate
flow rate at a given pressure drop, under standard reference conditions

3.9
family
group of products produced by one manufacturer for which test results for one product of that group are representative of characteristics for the whole group

3.10
1st, 2nd and 3rd family gases
group of gaseous fuels with similar burning behaviour linked together by a range of Wobbe indices

Note 1 to entry: See EN 437:2021, Table 1.

Note 2 to entry: These gases are commonly referred to as manufacturer gases, natural gas and liquified petroleum gases.

[SOURCE: EN 437:2021, 3.18, modified with Note 2 to entry]

3.11
installation pipework
pipework downstream of the point of gas delivery terminating at the appliance inlet connection

3.12
cover
tubular outer sheath applied to the corrugated pipe by the manufacturer and intended to improve the resistance of the pipe to external corrosion and mechanical damage

3.13
maximum allowable pressure
PS
maximum pressure for which the equipment is designed, as specified by the manufacturer, and defined at a location specified by him

4 Design requirements

4.1 General

4.1.1 Additional components

Where additional components are required to complete the PLT kit, these components shall be provided or specified by the kit manufacturer.

4.1.2 Materials

The material for the pliable tubing (see Table 1) shall be austenitic stainless steel and the grade shall be chosen according to long term suitability for the gas conveyed, the environment, the conditions under which it will be used and the suitability for fabrication, e.g. welding, cold forming, etc. as appropriate. Due regard shall be taken of the quality of the gas conveyed, possible variation in the composition, and possible development of corrosive agents both internally and externally.

NOTE 1 Examples of possible corrosive agents include:

— internal: combinations of sulphur, oxygen, moisture, etc.;

— external: coastal and general environmental influence, building materials, etc.

NOTE 2 The material of the pliable tubing directly affects the safety of the works (building and civil engineering) in which the tubing kit is installed and the durability performance of the tubing kit itself.

4.1.3 Cover, PLT fittings and PLT supports

PLT fittings shall provide a gas-tight connection to the pliable tubing. PLT fittings, whether surface finished or not, shall be manufactured from materials listed in Table 1.

Table 1 — Materials

Component	Material
Pliable tubing	Austenitic Stainless steel according to EN 10028-7: 1.4306, 1.4404, 1.4401, 1.4541, 1.4571
Cover	Synthetic material [a]
Additional protection	Synthetic material [b]
PLT fittings	Stainless steel according to EN 10088-3, copper alloys according to EN 12164 and EN 12165 [c]
PLT manifold/tees	Stainless steel according to EN 10088-3, copper alloys according to EN 12164 and EN 12165 [c] Malleable cast iron according to EN 10242 types W 400-05; W 350-04; B 350-10 or B 300-06
Supports	Metallic corrosion resistant material

[a] see 4.8

[b] see 4.9

[c] A material containing at least 57 % copper and not more than 3,5 % lead for copper PLT fittings, PLT manifolds and tees is an example of the percentages presenting an appropriate resistance against stress corrosion cracking and dezincification.

The choice of material for pliable tubing should relate to the composition of the gas conveyed and the external environment (see Table 2, adapted extract from EN ISO 10380:2012).

Table 2 — Typical classification of materials for corrosion resistance

Corrosion Resistance Class	Description	Material Grade	Examples
A	Basic corrosion resistance	Stainless steels	1.4306 1.4541
B	Good corrosion resistance	Mo-alloyed stainless steels	1.4404 1.4401 1.4571

NOTE For example, the addition of biogas can increase oxygen and moisture content.

4.2 Nominal size DN, wall thickness and pressure drop

The nominal size of a PLT kit shall be selected from the DN given in EN ISO 10380:2012, Table 1.

The nominal size range shall be from DN 10 to DN 50.

The minimum bore size of the pliable tubing shall be at least 98 % of the nominal size DN in mm.

The manufacturer shall declare the related pressure drop (see 5.18) for each nominal size DN (see 5.3).

For direct burial if not stipulated in local installation standards, the minimum wall thicknesses values as included in the following Table 3 shall apply.

Table 3 — Nominal size DN, min. inner diameter and min. wall thickness

	DN 10	DN 12	DN 15	DN20	DN25	DN32	DN40	DN50
Min. inner diameter (mm)	9,8	11,8	14,7	19,6	24,5	31,4	39,2	49,0
Min. wall thickness (mm)	0,18	0,18	0,20	0,25	0,25	0,30	0,30	0,30

4.3 Threads

Male end fittings shall have terminating threads according to EN 10226-1 or any national standard.

Male or female end fittings shall have terminating threads according to EN ISO 228-1 or any national standard.

Integrated threads within the mechanical attachment of the PLT fittings shall not be compatible for EN 10226-1 nor EN ISO 228-1.

4.4 PLT fittings

4.4.1 General

PLT fittings shall provide a gas-tight connection to the pliable tubing. PLT fittings, whether surface finished or not, shall be manufactured from materials listed in Table 1. Copper alloys shall be selected from EN 12164 and/or EN 12165 and shall contain at least 57 % copper and not more than 3,5 % lead.