



SLOVENSKI STANDARD
SIST EN 14423:2013+A2:2019

01-julij-2019

Cevne armature z objemkami za cevi za paro do 18 bar (vključno z dopnilom A2)

Clamp type coupling assemblies for use with steam hoses rated for pressures up to 18 bar

Schlaucharmaturen mit Klemmfassung für Dampf bis 18 bar

Raccords avec colliers de serrage pour tuyaux à vapeur utilisant une pression jusqu'à 18 bar

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Ta slovenski standard je istoveten z: EN 14423:2013+A2:2019

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<https://standards.iteh.ai/catalog/standards/sist/b87e0c24-836b-4fe5-bf4a-3ec50272528c/sist-en-14423-2013a2-2019>

ICS:

23.040.70 Gumene cevi in armature Hoses and hose assemblies

SIST EN 14423:2013+A2:2019

en,fr,de

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EUROPEAN STANDARD

EN 14423:2013+A2

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2019

ICS 23.040.70

Supersedes EN 14423:2013+A1:2016

English Version

Clamp type coupling assemblies for use with steam hoses rated for pressures up to 18 bar

Raccords avec colliers de serrage pour tuyaux à vapeur
utilisant une pression jusqu'à 18 bar

Schlaucharmaturen mit Klemmfassung für Dampf bis
18 bar

This European Standard was approved by CEN on 13 June 2016 and includes Amendment 2 approved by CEN on 15 January 2019.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 14423:2013+A2:2019) has been prepared by Technical Committee CEN/TC 218 “Rubber and plastics hoses and hose assemblies”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by November 2019, and conflicting national standards shall be withdrawn at the latest by November 2019.

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 includes Amendment 1, approved by CEN on 13 June 2016 and Amendment 2, approved by CEN on 15 January 2019.

This document supersedes $\boxed{A_2}$ EN 14423:2013+A1:2016 $\boxed{A_2}$.

The start and finish of text introduced or altered by amendment is indicated in the text by tags $\boxed{A_1}$ $\boxed{A_1}$ and $\boxed{A_2}$ $\boxed{A_2}$.

In comparison to EN 14423:2004, the following changes have been made:

- In Clause 2, the normative references have been updated.
- Clause 3 “Terms and definitions” has been amended.
- The term “seals” has been replaced by “gaskets” (main gasket/thread gasket).
- Restrictions on nominal size DN 32 have been deleted.
- In 9.1, 9.2, 9.3 and 9.8, the material lists have been revised.
- In Clause 10, the requirements for marking of hose fittings and union nuts have been revised.
- Clause 11 “Type testing and quality control” has been restructured and amended.
- The Bibliography has been reviewed.
- The standard has been revised editorially.

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

EN 14423:2013+A2:2019 (E)

1 Scope

This European Standard specifies the design, materials and dimensions of fittings for clamp type coupling assemblies for use with nominal sizes DN 15 to DN 50 steam and hot water hoses. It covers assemblies up to a maximum working pressure of 18 bar¹⁾ (corresponding to a saturated steam temperature of 210 °C).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 10025-2, *Hot rolled products of structural steels — Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10087, *Free-cutting steels — Technical delivery conditions for semi-finished products, hot-rolled bars and rods*

EN 10088-1, *Stainless steels — Part 1: List of stainless steels*

EN 10088-2, *Stainless steels — Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes*

EN 10213, *Steel castings for pressure 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 10283, *Corrosion resistant steel castings*

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

EN 12168, *Copper and copper alloys — Hollow rod for free machining purposes*

EN 12420, *Copper and copper alloys — Forgings*

EN ISO 898-2, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 2: Nuts with specified property classes — Coarse thread and fine pitch thread (ISO 898-2)*

EN 22768-1:1993, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (ISO 2768-1:1989)*

EN 22768-2:1993, *General tolerances — Part 2: Geometrical tolerances for features without individual tolerance indications (ISO 2768-2:1989)*

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 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread (ISO 898-1)*

EN ISO 3506-1, *Mechanical properties of corrosion-resistant stainless steel fasteners — Part 1: Bolts, screws and studs (ISO 3506-1)*

1) 1 bar = 0,1 MPa.

EN ISO 3506-2, *Mechanical properties of corrosion-resistant stainless steel fasteners — Part 2: Nuts (ISO 3506-2)*

EN ISO 4032, *Hexagon regular nuts (style 1) — Product grades A and B (ISO 4032)*

EN ISO 4042, *Fasteners — Electroplated coatings (ISO 4042)*

EN ISO 4762, *Hexagon socket head cap screws (ISO 4762)*

EN ISO 8330, *Rubber and plastics hoses and hose assemblies — Vocabulary (ISO 8330)*

EN ISO 15607, *Specification and qualification of welding procedures for metallic materials — General rules (ISO 15607)*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptable quality limit (AQL) for lot-by-lot inspection*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 8330 and the following apply.

3.1

DN (nominal size)

alphanumeric designation of size for components of a pipework system, which is used for reference purposes, which comprises the letters DN followed by a dimensionless whole number which is indirectly related to the physical size, in millimetres, of the bore or outside diameter of the end connections

Note 1 to entry: The number following the letters DN 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: In those standards which use the DN designation system, any relationship between DN and component dimensions should be given, e.g. DN/OD or DN/ID.

[SOURCE: EN ISO 6708:1995, 2.1]

3.2

PN

alphanumeric designation which is used for reference purposes related to a combination of mechanical and dimensional characteristics of a component of a hose fitting and which comprises the letters PN followed by a dimensionless number

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

3.3

arithmetical mean deviation of the assessed profile

Ra

arithmetic mean of the absolute ordinate values $Z(x)$ within a sampling length:

$$Ra = \frac{1}{lr} \int_0^{lr} |Z(x)| dx$$

[SOURCE: EN ISO 4287:1998²⁾, 4.2.1]

2) This document is currently impacted by the corrigendum EN ISO 4287:1998/AC:2008 and the draft amendment EN ISO 4287:1998/A1:2009.

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3.4 main gasket

interface gasket between the male and female part of a coupling

3.5 thread gasket

flat faced gasket for threads according to EN ISO 228-1

4 General requirements

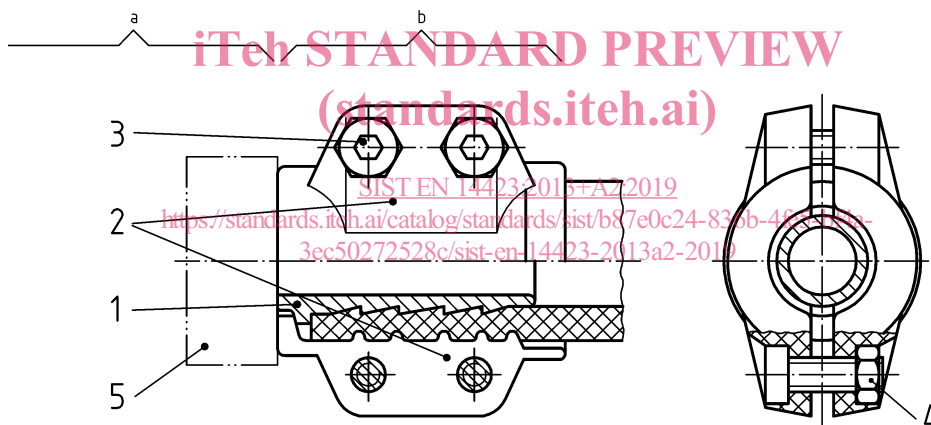
When coupling assemblies, consisting of tail end fittings and clamps ~~Ⓐ~~, are tested in accordance with Clause 11, the hose shall burst before the coupling is dismantled. The bolts shall be adjustable so that the hose is prevented from slipping.

Proof pressure shall be at 90 bar; burst pressure shall be at 180 bar at ambient temperature.

5 Design and designation of coupling assemblies

5.1 Design

A clamp type coupling assembly is shown in Figure 1.



Key

For 1 to 5 see Table 1

a connector end

b tail end

Figure 1 — Coupling assembly

Table 1 — List of coupling assembly components

Item number	Number of parts needed for one assembly	Denomination
1	1	Tail end fitting
2	2	Clamp
3	4	Hexagon socket head cap screw
4	4	Hexagon nut
5	1	Connector

NOTE A distinction is made between the connector end and the tail end of coupling assemblies. The former is the part by which the coupling is connected to an appliance or pipe (for various types of connectors, see Table 2), while the latter (including the tail end fitting and clamp) is fastened to a hose (see 7.2 and 7.4).

Table 2 — Types of connectors

Illustration	Type	Description	Nominal size DN	Thread size	l_1 ≈ mm	Details
	FL	PN 40 loose flange with weld-neck collar as in EN 1092-1	15 20 25 32 40 50		110 115 115 125 140 155	See 7.3.1
	FV	PN 40 weld-neck flange as in EN 1092-1	15 20 25 32 40 50		110 115 115 125 140 155	See 7.3.2
	G	Union nut with thread gasket, with parallel thread according to EN ISO 228-1 ^a	15 20 25 32 40 50	G 1/2 G 3/4 G 1 G 1 1/4 G 1 1/2 G 2	80 80 80 90 105 115	See 7.3.4
	$\boxed{A_1}$ R $\boxed{A_1}$	Tapered male thread with external thread according to EN 10226-1 ^a	15 20 25 32 40 50	R 1/2 R 3/4 R 1 R 1 1/4 R 1 1/2 R 2	95 95 100 110 125 140	See 7.3.5

^a Other threads may be agreed between the purchaser and manufacturer.

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5.2 Ordering designation system

Example for an ordering designation:

Denomination

Characteristics

Coupling assembly

EN 14423 — FL 20 — 1.4571 — 1.0038 — CW614N

EN number

Type of connector

- FL Weld-neck collar for loose flange
 FV Weld-neck flange
 G Union nut with parallel thread according to EN ISO 228-1
 $\text{R} \text{ } \text{A}_1$ Tapered stud end according to EN 10226-1

DN (nominal size)

Material designation

— for tail end fittings: (according to 9.1)

for type FL only:

— for loose flanges: (according to 9.3)

— for clamps: (according to 9.7)

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EXAMPLE 1 Ordering designation for a type FL coupling assembly for use with DN 20 hoses, consisting of a stainless steel tail end fitting with collar (1.4571), a carbon steel (1.0038) loose flange and a wrought copper alloy (CW614N) clamp, with bolts and nuts:

Coupling assembly EN 14423 — FL 20 — 1.4571 — 1.0038 — CW614N

EXAMPLE 2 Ordering designation for a type G coupling assembly for use with DN 20 hoses, consisting of a stainless steel tail end fitting, a carbon steel (1.0038) union nut secured by a wire ring, and a wrought copper alloy (CW614N) clamp, with thread gasket, bolts and nuts:

Coupling assembly EN 14423 — G 20 — 1.0038 — CW614N

6 Hose dimensions

Careful selection of the hose fittings should be made to ensure that the inner diameter (ID) and outer diameter (OD) of the hose are within the limits and tolerances of the tails and clamps detailed in this document. Also that the materials for the couplings have been tested to withstand the temperature and pressure medium being conveyed.

7 Design and dimensions

7.1 General

The dimensions of machined fittings shall be subject to the general tolerances of Class EN 22768-m in EN 22768-1:1993 and EN 22768-2:1993.

Tolerances for drop forged parts are to be agreed between the purchaser and manufacturer.

The gasket material (see 9.6) is to be agreed between purchaser and supplier.

7.2 Tail end fittings

The tail end fittings of hose couplings shall have the dimensions given in Table 3. Their outer surface shall be formed by machining, the surface roughness Ra of 3,2 μm .

Dimensions in millimetres



Key

- a deburred
- b ribs

Figure 2 — Tail end fitting