SLOVENSKI STANDARD
SIST EN 14423:2005

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Cevne armature z objemkami za cevi za paro do 18 bar

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'a 18 bar

Ta slovenski standard je istoveten z: EN 14423:2004

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23.040.70 Gumene cevi in armature Hoses and hose assemblies

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

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Foreword

This document (EN 14423:2004) 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of an identical text or by endorsement, at the latest by May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.

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

1 Scope

This document 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 bar (corresponding to a saturated steam temperature of 210 °C).

2 Normative references

The following referenced documents are indispensable for the application 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 288-1, *Specification and qualification of welding procedures for metallic materials — Part 1: General rules for fusion welding*

EN 1092-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 1: Steel flanges*

EN 1982, *Copper and copper alloys — Ingots and castings*

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

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 for general purposes*

EN 10204, *Metallic products —Types of inspection documents*

EN 10213-4, *Technical delivery conditions for steel castings for pressure purposes — Part 4: Austenitic and austenitic-ferritic steel grades*

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 12420, *Copper and copper alloys — Forgings*

EN 20898-2, *Mechanical properties of fasteners — Nuts with specified proof load values — Coarse thread (ISO 898-2:1992)*

EN ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs (ISO 898-1:1999)*

EN ISO 4042, *Fasteners — Electroplated coatings (ISO 4042:1999)*

EN ISO 228-1:2003, *Pipe threads where pressure tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation (ISO 228-1:2000)*

EN ISO 3506-1, *Mechanical properties of corrosion-resistant stainless-steel fasteners — Part 1: Bolts, screws and studs (ISO 3506-1:1997)*

EN ISO 3506-2, *Mechanical properties of corrosion-resistant stainless-steel fasteners — Part 2: Nuts (ISO 3506-2:1997)*

EN ISO 4032, *Hexagon nuts, style 1 — Product grades A and B (ISO 4032:1999)*

EN ISO 4762, *Hexagon socket head cap screws (ISO 4762:2004)*

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

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

ISO 2859-1:1999, *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 following terms and definitions apply.

3.1
DN
see EN ISO 6708

3.2
s
width across flats

3.3
r_a
see EN ISO 4287

4 General requirements

Coupling assemblies in compliance with this document shall only be used with hoses rated for the service pressures and temperatures specified in Clause 1.

When coupling assemblies, consisting of tail end fittings and clamps of the dimensions given in Table 8, as well as bolts and nuts as specified in Table 9, which have been put together appropriately, are tested in accordance with Clause 11, the hose shall burst before the coupling is dismantled or begins to leak. The bolts shall be adjustable so that the hose is prevented from slipping.

Proof pressure 90 bar, burst pressure 180 bar at ambient temperature.

5 Survey on coupling assemblies and their designation

5.1 Survey

Key
a Connector end
b Tail end
For 1 to 5 see Table 1

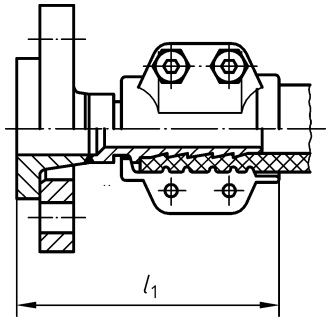
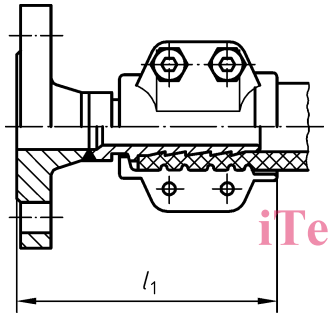
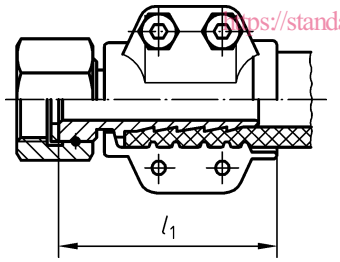
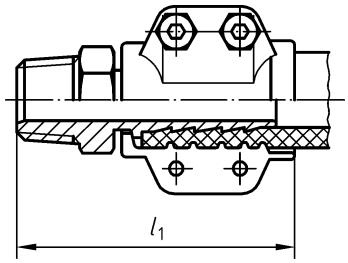
Figure 1 — Coupling assembly

Table 1 — Coupling assembly components

Item number	Number	Denomination
1	1	Tail end fitting
2	2	Clamp
3	4	Hexagon socket head cap screw
4	4	Hexagon nut
5	1	Connector

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 — Connectors, survey

Illustration	Type	Description	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				See 7.3.2
	**G**	Union nut with gasket, with parallel thread according to EN ISO 228 [a]	**15** **20** **25** (32) **40** **50**	G ½ G ¾ G 1 G 1¼ G 1½ G 2	80 80 80 90 105 115	See 7.3.4
	**GA**	Tapered male thread with external thread according to EN 10226-1 [a]	**15** **20** **25** (32) **40** **50**	R ½ R ¾ R 1 R 1¼ R 1½ R 2	95 95 100 110 125 140	See 7.3.5

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

5.2 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
- GA 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)

EXAMPLE 1 The 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, shall read:

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

EXAMPLE 2 The 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 gasket, bolts and nuts, shall read:

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 ID, 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.

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

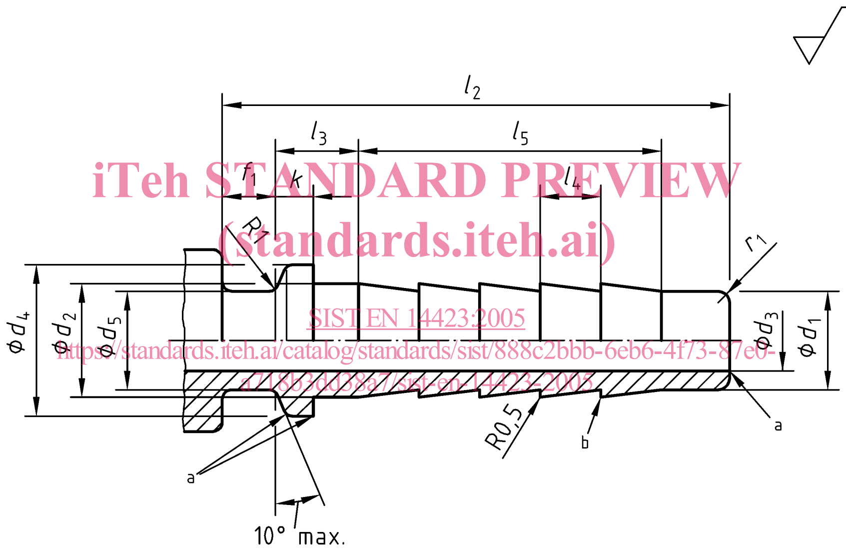
Details left unspecified should be selected as appropriate.

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 R_a of 3,2 µm.

Dimensions in millimetres



Key
a Deburred
b Ribs

Figure 2 — Tail end fitting