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Cevni fitingi z objemkami - 4. del: Prirobnični spoji

Hose fittings with clamp units - Part 4: Flange connections

Schlaucharmaturen mit Klemmfassungen - Teil 4: Flanschanschlüsse

Raccords pour flexibles avec demi-coquille - Partie 4 : Raccordements à bride

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23.040.60 Prirobnice, oglavki in spojni elementi Flanges, couplings and joints

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Hose fittings with clamp units - Part 4: Flange connections

Raccords pour flexibles avec demi-coquille - Partie 4 :
Raccordements à bride

Schlaucharmaturen mit Klemmfassungen - Teil 4:
Flanschanschlüsse

This European Standard was approved by CEN on 24 July 2022.

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[SIST EN 14420-4:2022](https://standards.iteh.ai/catalog/standards/sist/5c9c7449-0673-4466-9292-cc654edce27b/sist-en-14420-4-2022)

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

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European foreword

This document (EN 14420-4:2022) 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of an identical text or by endorsement, at the latest by February 2023, and conflicting national standards shall be withdrawn at the latest by February 2023.

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 14420-4:2013.

In comparison to EN 14420-4:2013, the following changes have been made:

- In Clause 2, the normative references have been updated;
- In Figure 1 and Figure 2, the indication of the length L has been deleted;
- In Figure 3 and Figure 4, the indication of the length l_1 and l_2 has been deleted;
- In Clause 4, Table 2 has been deleted;
- In Clause 5, Table 3 and Table 4 have been deleted;
- In Clause 5, Table 5 has been renamed to Table 2 and for the nominal size DN 200, the value s has been updated to 6,3 mm.

The EN 14420 series, *Hose fittings with clamp units*, consists of the following parts:

- *Part 1: Requirements, types of fixing and connection, designation and testing*
- *Part 2: Hose side parts of hose tail*
- *Part 3: Clamp units, bolted or pinned*
- *Part 4: Flange connections*
- *Part 5: Threaded connections*
- *Part 6: TW tank truck couplings*
- *Part 7: Cam locking couplings*
- *Part 8: Symmetrical half coupling (Guillemin system)*

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.

EN 14420-4:2022 (E)**1 Scope**

This document specifies requirements for hose tails according to EN 14420-2, with flanges of mating dimensions PN 10/PN 16/PN 25/PN 40 (according to nominal size and pressure stage) according to EN 1092-1, on hose fittings with clamp units according to EN 14420-3.

Maximum working pressure is 25 bar¹; maximum working temperature is 65 °C.

Additionally, flanges are also usable according to EN 14422.

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 573-3, *Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 3: Chemical composition and form of products*

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

EN 1706, *Aluminium and aluminium alloys - Castings - Chemical composition and mechanical properties*

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

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

EN 10216-1, *Seamless steel tubes for pressure purposes - Technical delivery conditions - Part 1: Non-alloy steel tubes with specified room temperature properties*

EN 10217-1, *Welded steel tubes for pressure purposes - Technical delivery conditions - Part 1: Electric welded and submerged arc welded non-alloy steel tubes with specified room temperature properties*

EN 10283, *Corrosion resistant steel castings*

EN 10250-2, *Open die steel forgings for general engineering purposes - Part 2: Non-alloy quality and special steels*

EN 12163, *Copper and copper alloys - Rod for general purposes*

EN 14420-1:2013, *Hose fittings with clamp units - Part 1: Requirements, types of fixing and connection, designation and testing*

EN 14420-2, *Hose fittings with clamp units - Part 2: Hose side parts of hose tail*

EN 14420-3, *Hose fittings with clamp units - Part 3: Clamp units, bolted or pinned*

¹ 1 bar = 0,1 MPa.

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

EN 22768-2², *General tolerances - Part 2: Geometrical tolerances for features without individual tolerance indications (ISO 2768-2)*

EN ISO 683-1, *Heat-treatable steels, alloy steels and free-cutting steels - Part 1: Non-alloy steels for quenching and tempering (ISO 683-1)*

EN ISO 683-4, *Heat-treatable steels, alloy steels and free-cutting steels - Part 4: Free-cutting steels (ISO 683-4)*

EN ISO 4042, *Fasteners - Electroplated coating systems (ISO 4042)*

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

EN ISO 11666, *Non-destructive testing of welds - Ultrasonic testing - Acceptance levels (ISO 11666)*

EN ISO 15614-1, *Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys (ISO 15614-1)*

EN ISO 15614-2, *Specification and qualification of welding procedures for metallic materials - Welding procedure test - Part 2: Arc welding of aluminium and its alloys (ISO 15614-2)*

EN ISO 17636-1, *Non-destructive testing of welds - Radiographic testing - Part 1: X- and gamma-ray techniques with film (ISO 17636-1)*

EN ISO 17636-2, *Non-destructive testing of welds - Radiographic testing - Part 2: X- and gamma-ray techniques with digital detectors (ISO 17636-2)*

EN ISO 17638, *Non-destructive testing of welds - Magnetic particle testing (ISO 17638)*

EN ISO 17640, *Non-destructive testing of welds - Ultrasonic testing - Techniques, testing levels, and assessment (ISO 17640)*

EN ISO 23277, *Non-destructive testing of welds - Penetrant testing - Acceptance levels (ISO 23277)*

EN ISO 23278, *Non-destructive testing of welds - Magnetic particle testing - Acceptance levels (ISO 23278)*

EN ISO 23279, *Non-destructive testing of welds - Ultrasonic testing - Characterization of discontinuities in welds (ISO 23279)*

² EN 22768-2 has been withdrawn and replaced by EN ISO 22081.

3 Terms and definitions

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

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 <https://www.electropedia.org/>

3.1

DN

nominal size

alphanumeric designation of size for components of a pipework system, which is used for reference purposes; it 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 is not to 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 is to be indicated, e.g. DN/OD or DN/ID.

[SOURCE: EN ISO 6708:1995, 2.1, modified]

3.2

PN

alphanumeric designation used for reference purposes related to a combination of mechanical and dimensional characteristics of a component of a hose fitting

Note 1 to entry: It comprises the letters PN followed by a dimensionless number.

Note 2 to entry: The number following the letters PN does not represent a measurable value and is not to be used for calculation purposes except where specified in the relevant standard.

4 Hose fittings with flanges

Integral or welded flanges DN 15 to DN 200 according to EN 1092-1 shall be used (see Figure 1 and Figure 2).

A parts list for hose fittings with flanges is given in Table 1.

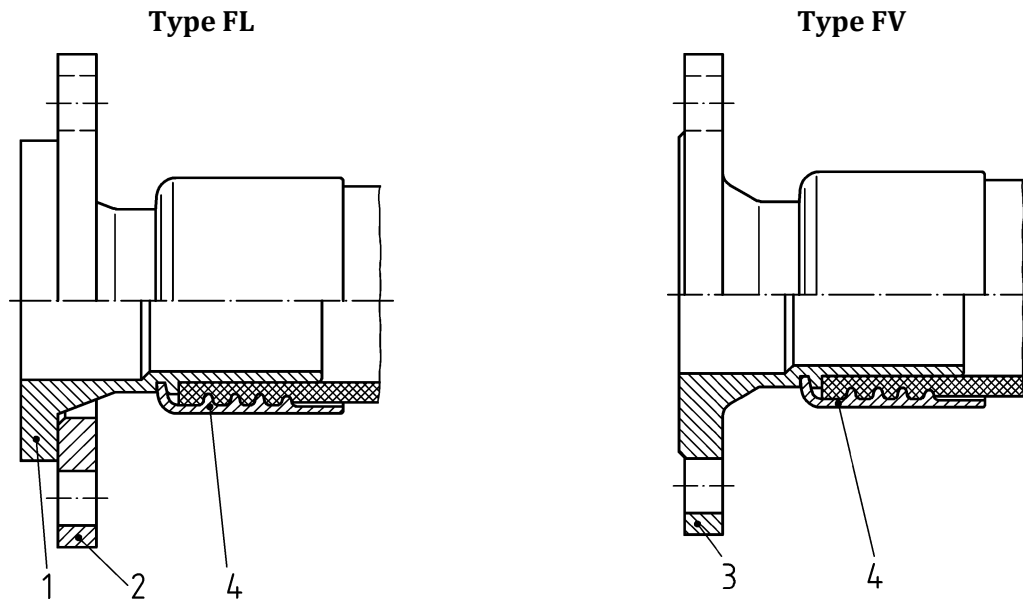


Figure 1 — Example of loose flange

Figure 2 — Example of fixed flange

Table 1 — Parts list

Item No.	Designation	Remark
1	Hose tail with fixed collar	According to 5.2
2	Loose flange	According to EN 1092-1 ^a
3	Hose tail with fixed flange	According to 5.3
4	Clamp unit	According to EN 14420-3
^a The loose flange should be prevented from falling back during assembly.		

For designation of a complete hose fitting, see EN 14420-1.

5 Dimensions, designations

5.1 General

The general tolerances for the dimensions of machined parts shall be in accordance with EN 22768-mK, where the tolerance class “m” is specified in EN 22768-1 and the tolerance class “K” is specified in EN 22768-2².

Unless otherwise specified, tolerances on flanges shall be in accordance with EN 1092-1.

NOTE The hose tail consists of a weld neck collar or a fixed flange with weld-on tail according to 5.4.

Hose tails according to 5.2 and 5.3 may be fabricated from a single part (without welding). Hereafter, the dimension l_1 may be reduced by the dimension l_3 according to Figure 5 and Table 2.

Dimensions of the loose or fixed flange shall be as given in EN 1092-1 but the bore transition from tail inside diameter to inside diameter of the loose or fixed flange shall be bevelled.

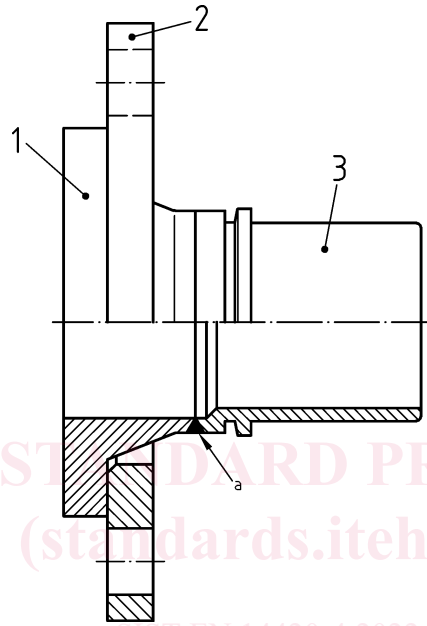
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5.2 Hose tail with weld neck collar and loose flange

Figure 3 shows a hose tail with weld neck collar and loose flange.

Types are:

- a) SC-FL (with loose flange);
- b) SC-FLB (without loose flange).



Key

- 1 weld-neck collar according to EN 1092-1
- 2 loose flange according to EN 1092-1³
- 3 hose side part according to 5.4
- a example for possible welding connection (see 5.5)

Figure 3 — Hose tail with weld neck collar and loose flange

Example for an ordering designation of a hose tail with weld neck collar without loose flange (SC-FLB) with nominal size DN 50, material number 1.0038:

Hose tail EN 14420-4 — SC — FLB 50 — 1.0038

5.3 Hose tail with fixed flange

Figure 4 shows a hose tail with fixed flange (SC-FV).

³ Different from EN 1092-1 nominal size DN 80 with 8 bolt holes.