SLOVENSKI STANDARD
SIST EN 14420-1:2013

01-september-2013

Nadomešča:
SIST EN 14420-1:2005+A1:2007

Cevni fitingi z objemkami - 1. del: Zahteve, pregled, označevanje in preskušanje

Hose fittings with clamp units - Part 1: Requirements, survey, designation and testing

Schlaucharmaturen mit Klemmfassungen - Teil 1: Anforderungen, Übersicht, Bezeichnung und Prüfung

Raccords pour flexibles avec demi-coquille - Partie 1: Prescription, présentation générale, désignation et essais

Ta slovenski standard je istoveten z: EN 14420-1:2013

ICS:

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

SIST EN 14420-1:2013 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14420-1

July 2013

ICS 23.040.70

Supersedes EN 14420-1:2004+A1:2007

English Version

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

Raccords pour flexibles avec demi-coquille - Partie 1: Exigences, types de fixation et connexion, désignation et essais

Schlaucharmaturen mit Klemmfassungen - Teil 1: Anforderungen, Arten der Befestigung und Verbindung, Bezeichnung und Prüfung

This European Standard was approved by CEN on 15 May 2013.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 14420-1:2013) 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 January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

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

This document supersedes EN 14420-1:2004+A1:2007.

In comparison to EN 14420-1:2004+A1:2007, the following changes have been made:

— In Clause 1, a warning regarding operation has been added.

— In Clause 2, the normative references have been revised.

— Clause 3 "Terms and definitions" has been revised.

— In 4.2, requirements for electrical conductivity of plastic coated hose assemblies has been inserted.

— In 4.3, permissible working pressures for aluminium cast fittings in EN 14420-7 and hose fittings according to EN 14420-8 have been specified.

— Clause 5 "Survey" has been renamed "Types of fixing and connection".

— Clause 7 "Type testing and quality control" has been completely reviewed.

— The Bibliography has been revised.

— The standard has been revised editorially.

EN 14420, *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)*

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies requirements, types of fixing and connection, designation and testing for hose fittings with clamp units for hoses made of rubber/plastics or thermoplastics preferably for use with flammable and non-flammable products. It contains requirements for hose fittings to ensure that, when used appropriately, the user or third persons are not exposed to hazards from fire, explosions or acid burns, for example from mineral oils or chemicals, and that the environment is protected from pollution and other detritus.

For maximum working pressure (WP) and temperature see 4.3.

WARNING — Before decoupling of the quick coupling connections according to Parts 6, 7 and 8, the assembly should be at atmospheric pressure.

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 10204, *Metallic products — Types of inspection documents*

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*

EN 14420-4, *Hose fittings with clamp units — Part 4: Flange connections*

EN 14420-5, *Hose fittings with clamp units — Part 5: Threaded connections*

EN 14420-6, *Hose fittings with clamp units — Part 6: TW tank truck couplings*

EN 14420-7, *Hose fittings with clamp units — Part 7: Cam locking couplings*

EN 14420-8, *Hose fittings with clamp units — Part 8: Symmetrical half coupling (Guillemin system)*

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 8330:2008, *Rubber and plastics hoses and hose assemblies — Vocabulary (ISO 8330:2007)*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance 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 8330:2008 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. 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 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 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 should not be used for calculation purposes except where specified in the relevant standard.

4 Requirements

4.1 General

Hose fittings shall withstand the mechanical, thermal and chemical stresses and shall be impermeable and resistant to flammable and non-flammable water-polluting fluids and their vapours except liquid natural gas and vapour.

Hose fittings shall be designed so that they comply with the requirements of this European Standard when attached correctly and establish a frictional and positive-locking tight connection on the hose.

Hose fittings together with the hoses shall be mounted in such a manner, when specified in a hose product standard (e.g. EN 12115), that any electrostatic charging is safely led off. Hose assemblies shall be fastened or removed to exclude the risk of sparking in explosion-endangered zones. This can be avoided by choice of materials, such as stainless steel or copper-zinc alloys.

Hose fittings shall be designed so that when using hoses the hose is destroyed first before being torn out from the fitting, if an overstress occurs.

Only ductile metallic materials shall be used for hose fittings and hose clamps.

Hose side fitting components shall not cause any dangerous notch or shear stresses on the hose. The clamp units shall be widened at the end in order to obtain a flexing zone and shall be approximately 10 % longer than the connection pieces to minimize shear stress to the hoses.

If plastic coatings are provided it shall be assured by appropriate measures that the required electric conductivity of the hose assembly is maintained.

Clamp units shall be attachable without special tools and be re-usable. Clamp units shall be replaced in sets.

The type of connection and the material shall be selected in consideration of the potential hazard caused by the medium and in view of the operating conditions.

In this series of European Standards gaskets in hose fittings shall be made of non-asbestos materials.

4.2 Resistance of the fitting materials to the medium

Consideration shall be given to the potential hazard caused by the medium and the operating conditions when selecting the type of connection.

In individual cases, other concentrations and additions to the medium as well as increase of temperature can reduce the resistance of the metallic materials. In these cases, details shall be agreed between purchaser and manufacturer.

The fitting components can be surface protected, e.g. nickel-plated, zinc-plated, chrome-plated or polymer coating. Details shall be agreed between purchaser and manufacturer.

If plastic coating is intended, it shall be ensured by measures that the prescribed electrical conductivity of the hose assembly is observed.

The pairing of fittings from different material groups shall be avoided, if the presence of electrolytes is expected (contact corrosion).

4.3 Permissible working pressures and temperatures

All hose fittings according to EN 14420-2, EN 14420-3, EN 14420-4 and EN 14420-5 shall be applicable to the working pressure range of –0,8 bar to 25 bar[1)].

All hose fittings according to EN 14420-6 and EN 14420-7 shall be applicable to the working pressure range from -0,8 bar to 16 bar. Exceptions hereof are the aluminium cast fittings in EN 14420-7, whose maximum working pressure is limited to 10 bar.

Only hose fittings according to EN 14420-8 having elongation values of more than 4 % are applicable to the working pressure range of –0,8 bar to 16 bar.

Unless otherwise specified, a working temperature range of –20 °C to +65 °C shall apply.

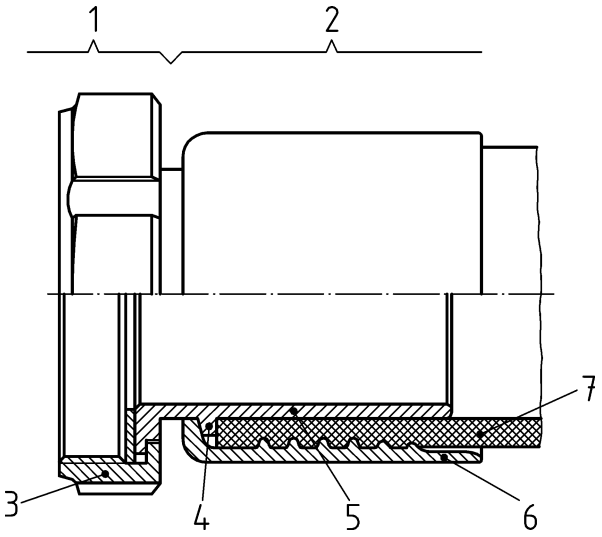
NOTE Permissible pressures and temperatures of hose assemblies are limited by the hoses and gaskets used.

1) 1 bar = 0,1 MPa.

5 Types of fixing and connection

5.1 General

An example of a complete hose fitting with clamp unit is given in Figure 1.



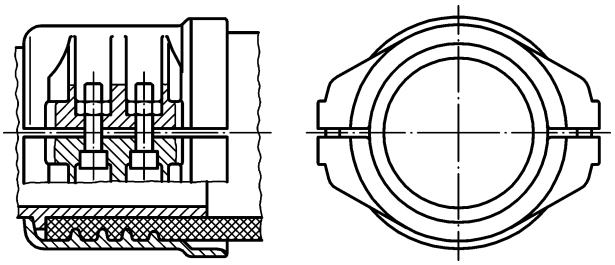
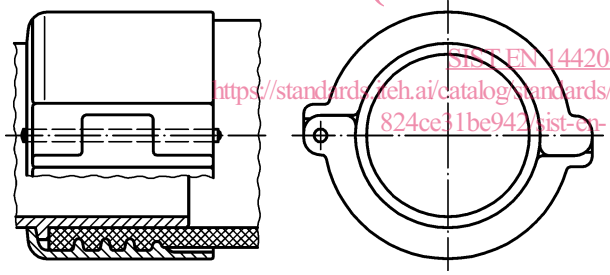
Key

1 connection side
2 hose side
3 connecting part shown here with internal pipe thread
4 securing collar
5 hose side part of tail
6 clamp unit
7 hose

Figure 1 — Example of a complete hose fitting with clamp unit

5.2 Types of fixing on hose side

Table 1 — Types of fixing on hose side

Type of fixing	Type	Nominal size DN [a]	Material groups of fitting parts not in contact with the medium
Clamp unit, bolted, according to EN 14420-3 	K	15 20 25 32 40 50 65 80 100 150 200	Aluminium alloys, stainless steels, copper-zinc alloys
Clamp unit, pinned, according to EN 14420-3 	S	25 32 40 50 65 80 100	Aluminium alloys, stainless steels

NOTE For details see EN 14420-2 and EN 14420-3.

[a] For inside diameter of hoses see EN 14420-2.