



SLOVENSKI STANDARD

SIST EN 14420-1:2005

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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: Exigences, présentation générale, désignation et essais

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ICS:

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

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 14420-1

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English version

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

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

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This European Standard was approved by CEN on 30 September 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of 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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This document (EN 14420-1:2004) 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.

EN 14420 consists at the time of publication of the following parts:

EN 14420-1, *Hose fittings with clamp units — Part 1: Requirements, survey, 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*

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)*

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.

EN 14420-1:2004 (E)**1 Scope**

This document specifies requirements 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 detriments. The use of non-asbestos materials for gaskets in hose fittings is recommended in this series of standards.

For maximum working pressure (WP) and temperature see 3.3.

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 10204, *Metallic products — Types of inspection documents*

EN 12115, *Rubber and thermoplastics hoses and hose assemblies for liquid or gaseous chemicals — Specification*

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: 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 (Guil-lemin system)*

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

3 Terms and definitions

For the purposes of this document, the following term and definition applies.

3.1**DN**

see EN ISO 6708

4 Requirements

4.1 General

Hose fittings shall withstand the mechanical, thermal and chemical stresses to be expected 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 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 manner, when specified in the hose product standard that any electrostatic charging is safely led off. The risk of sparking in explosion-endangered zones shall be excluded when hose assemblies are fastened or removed. This can be avoided by choice of adequate materials, e.g. stainless steel or copper-zinc alloys.

Hose fittings shall be designed so that when using hoses (for example according to Annex A) the hose is destroyed first before being torn out from the fitting, if an overstress occurs.

Only ductile metallic materials shall be used.

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 appropriate connection pieces to minimize shear stress to the hoses.

Clamp units shall be attachable without special tools and be reusable. Clamp units shall be replaced in sets.

The user and/or the purchaser shall select the type of connection and the material in consideration of the potential hazard caused by the medium and in view of the operating conditions.

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4.2 Resistance of the fitting materials to the medium

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The user and/or the purchaser shall give consideration 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.

If data are not available, individual tests are necessary.

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

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 shall be capable of operating the working pressure range – 0,8 bar up to 25 bar.

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

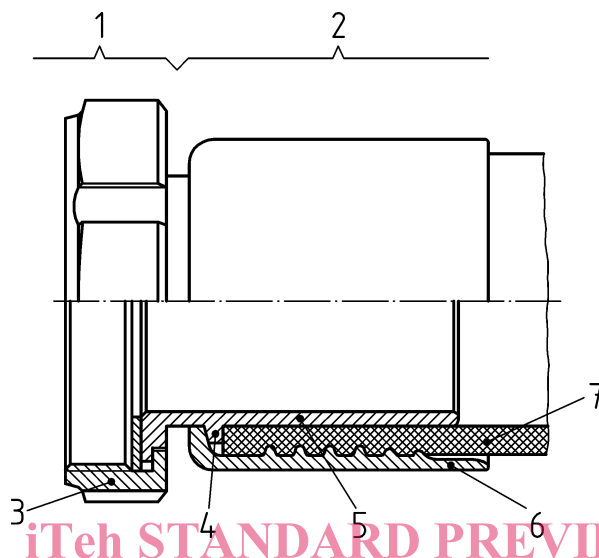
NOTE Permissible pressures and temperatures of hose assemblies are limited by the hoses and gaskets used.

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5 Survey

5.1 General

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



Key

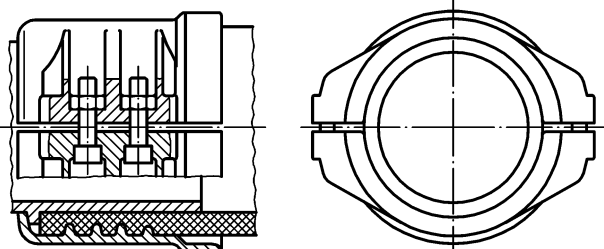
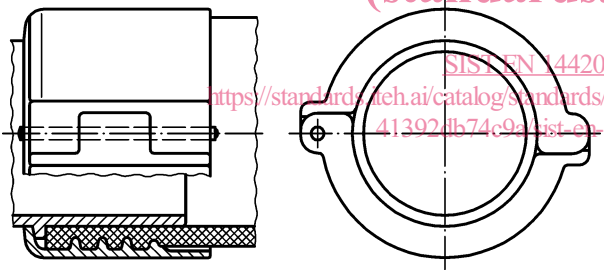
- 1 Connection side
- 2 Hose side
- 3 Connecting part shown here with internal pipe thread
- 4 Securing collar
- 5 Hose side part of tail
- 6 Clamp unit
- 7 Hose

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

5.2 Types of fixing on hose side

Table 1 — Survey of types of fixing on hose side

Type of fixing	Form	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	Aluminium alloys, stainless steels, copper-zinc alloys
		20	
		25	
		32	
		40	
		50	
		65	
		80	
		100	
		150	
Clamp unit, pinned, according to EN 14420-3 	S	25	Aluminium alloys, stainless steels
		32	
		40	
		50	
		65	
		100	
NOTE For details see EN 14420-2 and EN 14420-3.			
^a For inside diameter of hoses see EN 14420-2.			