



SLOVENSKI STANDARD
SIST EN 14422:2013

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Nadomešča:

SIST EN 14422:2005

SIST EN 14422:2005/AC:2006

Cevne armature z objemkami za pretočne cevi za utekočinjeni naftni plin (LPG)

Clamp type coupling assemblies for liquefied petroleum gas (LPG) transfer hoses

Schlaucharmaturen mit Klemmfassung für Schläuche zur Übergabe von Flüssiggas (LPG)

(standards.iteh.ai)

Raccords avec collier de serrage pour flexibles de transvasement de gaz de pétrole liquéfié (GPL)

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ICS:

83.140.30

Cevi, fitingi in ventili iz
polimernih materialov

Plastics pipes, fittings and
valves

SIST EN 14422:2013

en,fr,de

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EUROPEAN STANDARD

EN 14422

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

Clamp type coupling assemblies for liquefied petroleum gas (LPG) transfer hoses

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transvasement de gaz de pétrole liquéfié (GPL)

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Übergabe von Flüssiggas (LPG)

This European Standard was approved by CEN on 8 May 2013.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 14422:2013) 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of an identical text or by endorsement, at the latest by December 2013, and conflicting national standards shall be withdrawn at the latest by December 2013.

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 14422:2004.

In comparison to EN 14422:2004, the following changes have been made:

- The Scope has been extended and the working temperature ranges have been defined for normal and low temperature operation.
- In Clause 2, the normative references have been updated.
- Clause 3 "Terms and definitions" has been amended.
- Clause 4 "Requirements" has been revised.
- In Clause 6, all material lists have been revised.
- In Clause 7, the requirements for marking have been revised.
- Clause 8 regarding 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 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.

EN 14422:2013 (E)**1 Scope**

This European Standard specifies the dimensions, designation, materials, marking and testing requirements for a range of hose fittings which may be used with rubber/plastic hoses for the transfer of liquefied petroleum gas, LPG, in liquid or vapour phase and natural gas.

The maximum working pressure is 25 bar¹⁾.

For normal operation the working temperature range is from –30 °C up to 70 °C and for low temperature operation (LT) it is from –50 °C up to 70 °C.

The nominal size for hose fittings with internal and external threads is from DN 15 to DN 75 and for hose fittings with flanges DN 15 to DN 200.

In addition to the fittings described in this European Standard, threaded connections according to EN 14420-5 as well as hose fittings with screwed ferrules according to EN 14424 up to DN 25 for LPG could be used.

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

EN 1759-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 1: Steel flanges, NPS 1/2 to 24*

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

EN 10028-2, *Flat products made of steels for pressure purposes — Part 2: Non-alloy and alloy steels with specified elevated temperature properties*

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

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*

1) 1 bar = 0,1 MPa.

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

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

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality level (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, and 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

liquefied petroleum gas LPG

low pressure gas composed of one or more light hydrocarbons which are assigned to UN 1011, UN 1075, UN 1965, UN 1969 or UN 1978 only and which consists mainly of propane, propene, butane, butane isomers, butene with traces of other hydrocarbon gases

[SOURCE: EN 15202:2012, 3.1]

3.3

thread gasket

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

4 Requirements

4.1 General

Hose fittings shall withstand the mechanical and chemical loads and shall be impermeable and resistant to flammable liquefied petroleum gas (LPG) and natural gas.

Hose fittings shall be designed such that they establish a frictional and positive-locking tight connection on the hose.

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

Only ductile metallic materials shall be used.

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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.

4.2 Resistance of the fitting materials to the fluid

The material of hose fittings and gaskets shall be selected regarding that the hose fittings and the gaskets used with them shall not be affected by the transferred medium.

The fitting components may be surface protected, e.g. nickel-plated, zinc-plated, chrome-plated or by elastic coating.

Details are to be agreed between purchaser and manufacturer.

4.3 Maximum working pressures and temperatures

Maximum working pressures and temperatures are limited by the hoses and gaskets used.

All hose fittings are applicable in the pressure range from at least -0,8 bar up to 25 bar.

A working temperature range from -30 °C up to 70 °C or for low temperature from -50 °C up to 70 °C shall apply.

4.4 Welding connections

The manufacturer shall have a welding procedure qualification for the welding procedure specification selected according to EN ISO 15614-1 (for steel).

Welding connections shall be non-destructively tested.

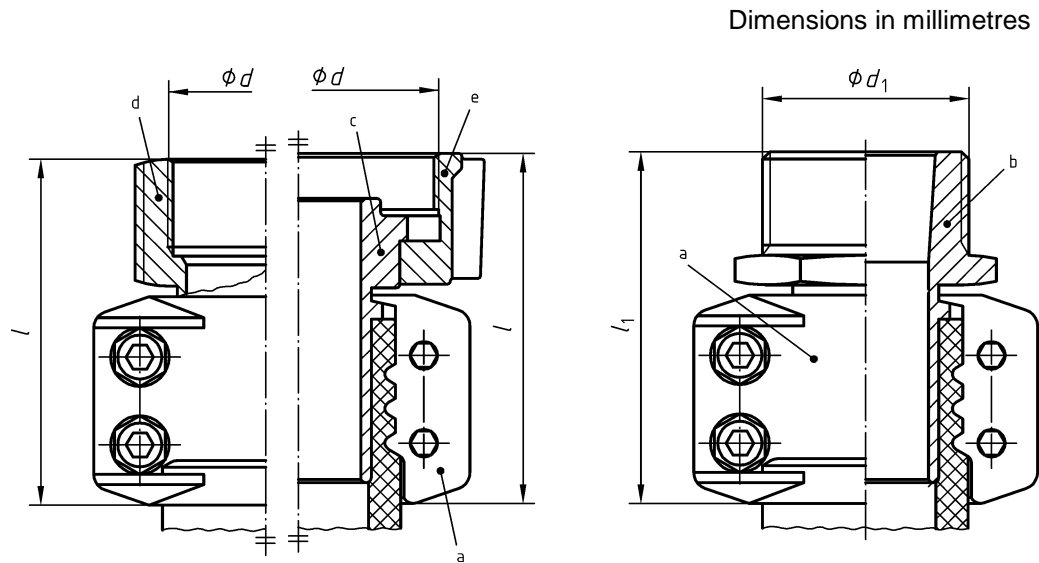
NOTE 1 Further details on the welding connections can be agreed.

NOTE 2 The weld-end preparation depends on the welding procedure and this can be agreed upon at the order stage.

5 Dimensions and designation**5.1 Dimensions**

Figure 1 to Figure 9 are shown as examples and are not intended to be conformed to; only the fixed dimensions in Table 1 to Table 9 shall be used.

Details which are not specified are to be chosen by the manufacturer.



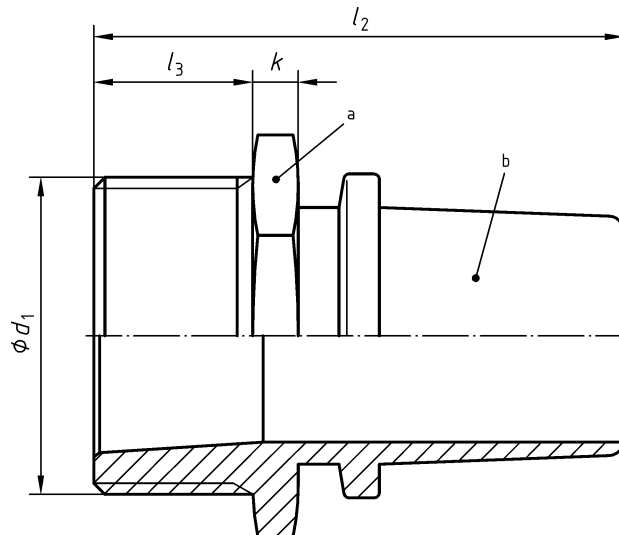
- a Clamp unit shall be according to EN 14420-3.
- b Male part hose fitting
- c Female part hose fitting with collar for union nut
- d Female part hose fitting with internal thread
- e Union nut

Figure 1 — Hose fittings with internal and external thread

Table 1 — Dimensions for hose fitting with internal and external thread

Dimensions in millimetres

Nominal size DN	Hose inside diameter d	SIST EN 14422:2013		l ≈	l_1 ≈
		connecting thread	connecting thread		
15	13	½"NPT	½"NPT	73	74
		1¾"ACME	—	77	—
20	19	¾"NPT	¾"NPT	76	75
		1"NPT	1"NPT	79	79
		1¾"ACME	—	77	—
25	25	1"NPT	1"NPT	79	79
		1¾"ACME	1¼"NPT	77	
32	32	1"NPT	1"NPT	79	80
		1¼"NPT	1¼"NPT		
		1¾"ACME	1½"NPT	77	
		2¼"ACME	—		
40	38	1½"NPT	1½"NPT	80	80
		2¼"ACME	—		
50	50	1¼"NPT	1¼"NPT	85	85
		2"NPT	2"NPT	86	87
		¾"ACME	—	96	—
75	75	3"NPT	2"NPT	1 360	1 200
		¾"ACME	3"NPT	1 170	1 410



- ^a s = hexagonal or octagonal width across flats, with grooves or cams at the discretion of the manufacturer
^b Hose tail shall be according to EN 14420-2, with or without ribs at the discretion of the manufacturer.

Figure 2 — Male part hose fitting

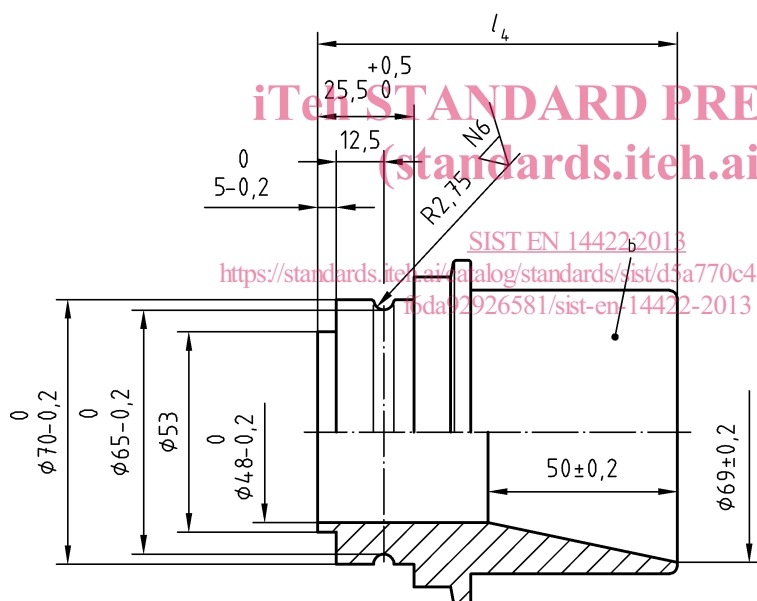
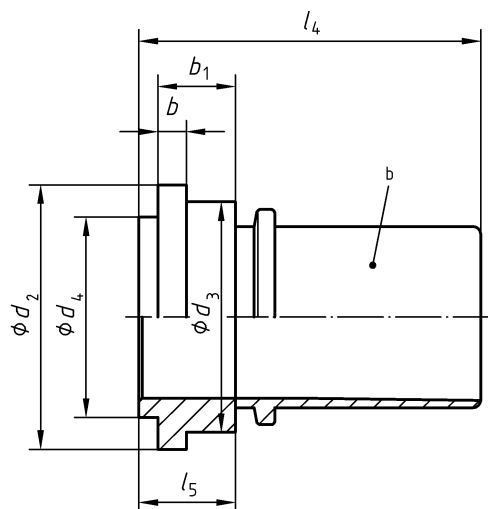
Table 2 — Dimensions for male part hose fitting

STANDARD PREVIEW
 Dimensions in millimetres

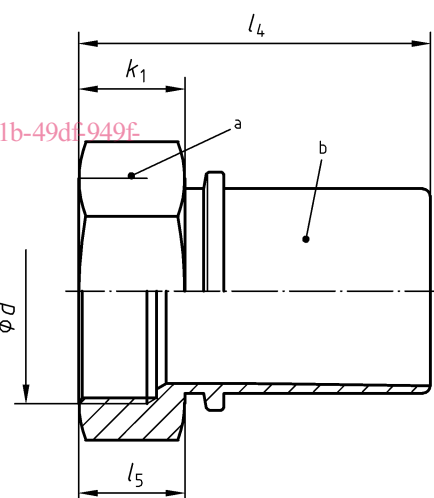
Nominal size DN	d_1	k	l_2	l_3	s
		minimum	minimum	minimum	minimum
15	½"NPT	6,0	65,0	16	22
20	¾"NPT		66,0	17	27
	1"NPT		70,0	20	36
25	1"NPT			21	46
	1¼"NPT	41			
32	1"NPT	6,5			71,5
	1¼"NPT		50		
	1½"NPT		71,0		
40	1½"NPT	7,5	110	22	60
50	1¼"NPT				77,5
	2"NPT	79,5			
75	2"NPT	7,5	112	30	85
	3"NPT				—

NOTE Threaded connections above nominal size DN 75 not in use. Above nominal size DN 75 flanges are the preferred connection type.

Type A, with collar for union nut



Type B, with collar for union nut



Type C, with internal thread

a

s = hexagonal or octagonal

b

Hose tail shall be according to EN 14420-2, with or without ribs at the discretion of the manufacturer.

Figure 3 — Female part hose fitting