

Clamp type coupling assemblies for LPG transfer hoses

The European Standard EN 14422:2004 has the status of a British Standard

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee PRI/66 Rubber and plastics tubing, hoses and hose assemblies, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;
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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 21 and a back cover.

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Clamp type coupling assemblies for LPG transfer hoses

Raccords avec collier de serrage pour flexibles de
transvasement de GPL

Schlaucharmaturen mit Klemmfassung für Schläuche zur
Übergabe von Flüssiggas

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

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Foreword

This document (EN 14422:2004) 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of an identical text or by endorsement, at the latest by May 2005, and conflicting national standards shall be withdrawn at the latest by May 2005.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 details a range of hose fittings which may be used with rubber/plastic hoses for the transfer of liquid natural gas LPG (liquid or vapour phase) and natural gas.

The maximum working pressure is 25 bar and the maximum working temperature is 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.

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 288-3, *Specification and approval of welding procedures for metallic materials — Part 3: Welding procedure tests for the arc welding of steels*

EN 586-2, *Aluminium and aluminium alloys — Forgings — Part 2: Mechanical properties and additional property requirements*

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*

prEN 1759-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated — Part 1: Steel flanges, NPS ½ to 24*

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

EN ISO 6708, *Pipework components - Definition and selection of DN (nominal size) (ISO 6708:1995)*

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

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

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

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 10283, *Corrosion resistant steel castings*

EN 12420, *Copper and copper alloys — Forgings*

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

ISO 2859-1:1989, *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 following term and definition applies.

3.1

DN

see EN ISO 6708

4 Requirements

4.1 General

Hose fittings shall withstand the mechanical and chemical loads to be expected and shall be impermeable and resistant to flammable liquid natural gas.

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

Hose fittings shall be designed such that when using suitable hoses the hose is destroyed first before being torn out from the fitting, if a possible 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.

4.2 Resistance of the fitting materials to the fluid

When selecting the material for hose fittings as well as for the gaskets used with them it shall be ensured that they will not be affected by the medium in a hazardous manner.

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.

Unless otherwise specified, a working temperature range of – 30 °C up to 70 °C or – 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 288-3 (for steel).

Full penetration welds are required, in case of lack of fusion they shall be welded from the opposite side without open gaps.

Welding connections shall be non destructively tested in accordance with relevant documents.

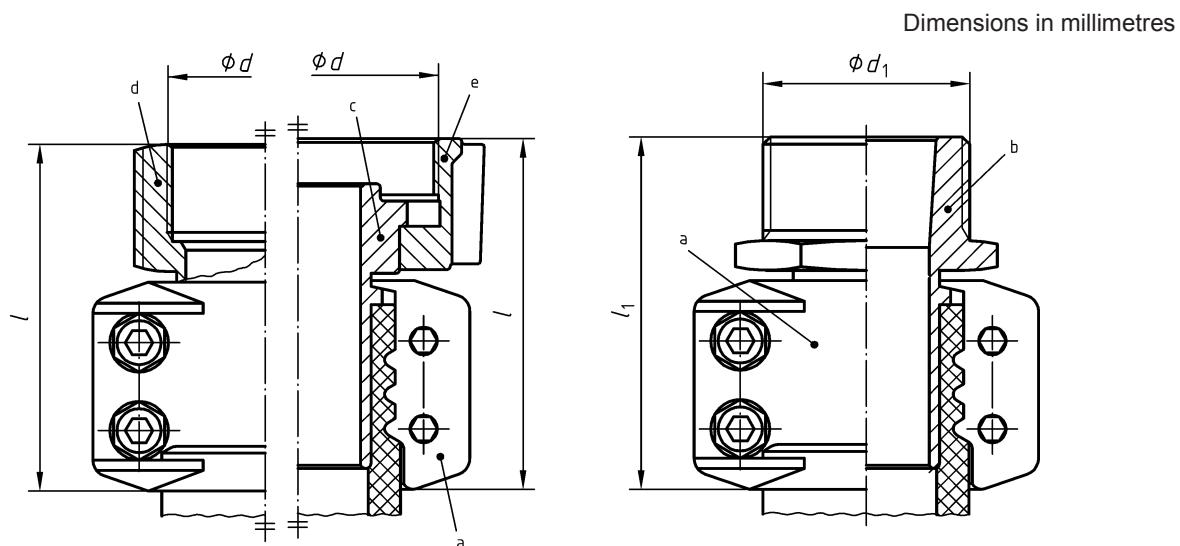
Further details on the welding connection are to be agreed if required.

The weld-end preparation depends on the welding procedure and shall be agreed upon at the order.

5 Dimensions and designation

5.1 Survey

The Figures 1 to 9 are diagrammatic only. Details not specified shall be chosen suitably by the manufacturer.



Key

- 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