BRITISH STANDARD

BS EN
629-1 : 1996

Transportable gas cylinders — 25E taper thread for connection of valves to gas cylinders

Part 1. Specification

The European Standard EN 629-1 : 1996 has the status of a British Standard

ICS 23.020.30

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee PVE/3, Gas containers, to Subcommittee PVE/3/1, Gas containers — fittings, upon which the following bodies were represented:

Aluminium Federation
British Compressed Gases Association
Health and Ssafety Executive
Ministry of Defence
Coopted members

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on
15 December 1996

Amendments issued since publication

Amd. No.	Date	Text affected

The following BSI references relate to the work on this standard:
Committee reverence PVE/3/1
Draft for comment 92/72648 DC

ISBN 0 580 26451 3

Contents

National foreword

This British Standard has been prepared by Subcommittee PVE/3/1 and is the English language version of EN 629-1 : 1996 *Transportable gas cylinders — 25E taper thread for connection to gas cylinders — Part 1: Specification*, published by the European Committee for Standardization (CEN).

EN 629-1 was produced as a result of international discussion in which the United Kingdom took part.

Cross-references

Publication referred to	Corresponding British Standard
EN 629-2 : 1996	BS EN 629 *Transportable gas cylinders — 25E taper thread for connection to gas cylinders* Part 2 : 1996 *Gauge inspection*

Compliance with a British Standard does not of itself confer immunity from legal obligations.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 629-1

June 1996

ICS 23.020.30

Descriptors: Gas cylinders, gas valves, junctions, tapered screw threads, definitions, specifications, dimensions, dimensional tolerances

English version

Transportable gas cylinders — 25E taper thread for connection of valves to gas cylinders — Part 1: Specification

Bouteilles à gaz transportables — Filetages coniques 25E pour le raccordement des robinets sur les bouteilles à gaz — Partie 1: Spécifications

Ortsbewegliche Gasflaschen — 25E kegeliges Gewinde zum Anschluß von Ventilen an Gasflaschen — Teil 1: Spezifikation

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 23, Transportable gas cylinders, 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 1996, and conflicting national standards shall be withdrawn at the latest by December 1996.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

Contents

Introduction

This European Standard is a two part standard, belonging to a series of standards specifying thread dimensions and gauge requirements:

Part 1: *Specification*;

Part 2: *Gauge inspection*.

Cylinders intended to contain compressed, liquefied or dissolved gas under pressure are fitted with accessories (valves, straight or angle fittings) to allow release of, and refilling with, gas. Hereinafter, the term 'valve' will apply to such accessories.

The connection, between cylinder and valve, is obtained by assembly of two taper threads, an external one on the valve stem and an internal one in the cylinder neck, both having the same nominal taper, pitch and thread profile.

1 Scope

This European Standard specifies definitions, dimensions and tolerances of a taper screw thread of nominal diameter 25,8 mm (designated 25E), for the connection of valves to medical and industrial gas cylinders.

Gauge inspection is covered by EN 629-2.

This standard does not cover the connection requirements for:

– mechanical strength;

– gas tightness;

– capability of repeated assembly and dismounting operations.

2 Normative reference

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate place in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 629-2 *Transportable gas cylinders — 25E taper thread for connection of valves to gas cylinders — Part 2: Gauge inspection*

3 Definitions

For the purposes of this standard, the following definitions apply.

3.1 valve stem

Tapered end of the valve body, with a thread formed on the external surface of the truncated cone (see figure 1).

3.2 cylinder neck thread

Tapered axial hole in the cylinder neck, with a thread formed on the internal surface of the truncated cone (see figure 1).

3.3 major cone

Cone bounding the crests of the thread of the valve stem, or the roots of the cylinder neck thread.

3.4 minor cone

Cone bounding the roots of the thread of the valve stem, or the crests of the cylinder neck thread.

3.5 pitch cone

Cone passing, coaxially and midway, between the major and minor cones.

3.6 reference plane A

Reference plane coincident with the small end face of the threaded valve stem and corresponding to diameters d_{1i}, d_{1p}, and d_{1e} (see figure 1).

3.7 reference plane B

Reference plane, at a distance l_1 from reference plane A and corresponding to diameter d_{2p} (see figure 1).

3.8 reference plane F

Reference plane coincident with the entry section face of the cylinder neck thread and corresponding to diameter D_{2p} (see figure 1).

3.9 reference plane G

Reference plane, at a distance L_1 from reference plane F and corresponding to diameters D_{1e}, D_{1p}, and D_{1i} (see figure 1).

3.10 major diameter d_{1e}

Diameter of the major cone, at the valve stem thread reference plane A (before any chamfer is cut) (see figure 1).

3.11 pitch diameter d_{1p}

Diameter of the pitch cone at the valve stem thread reference plane A (before any chamfer is cut) (see figure 1).

3.12 minor diameter d_{1i}

Diameter of the minor cone at the valve stem thread reference plane A (before any chamfer is cut) (see figure 1).

3.13 pitch diameter d_{2p}

Diameter of the pitch cone at reference plane B (see figure 1).

3.14 major diameter D_{1e}

Diameter of the major cone at reference plane G (see figure 1).

3.15 pitch diameter D_{1p}

Diameter of the pitch cone at reference plane G (see figure 1).

3.16 minor diameter D_{1i}

Diameter of the minor cone at reference plane G (see figure 1).

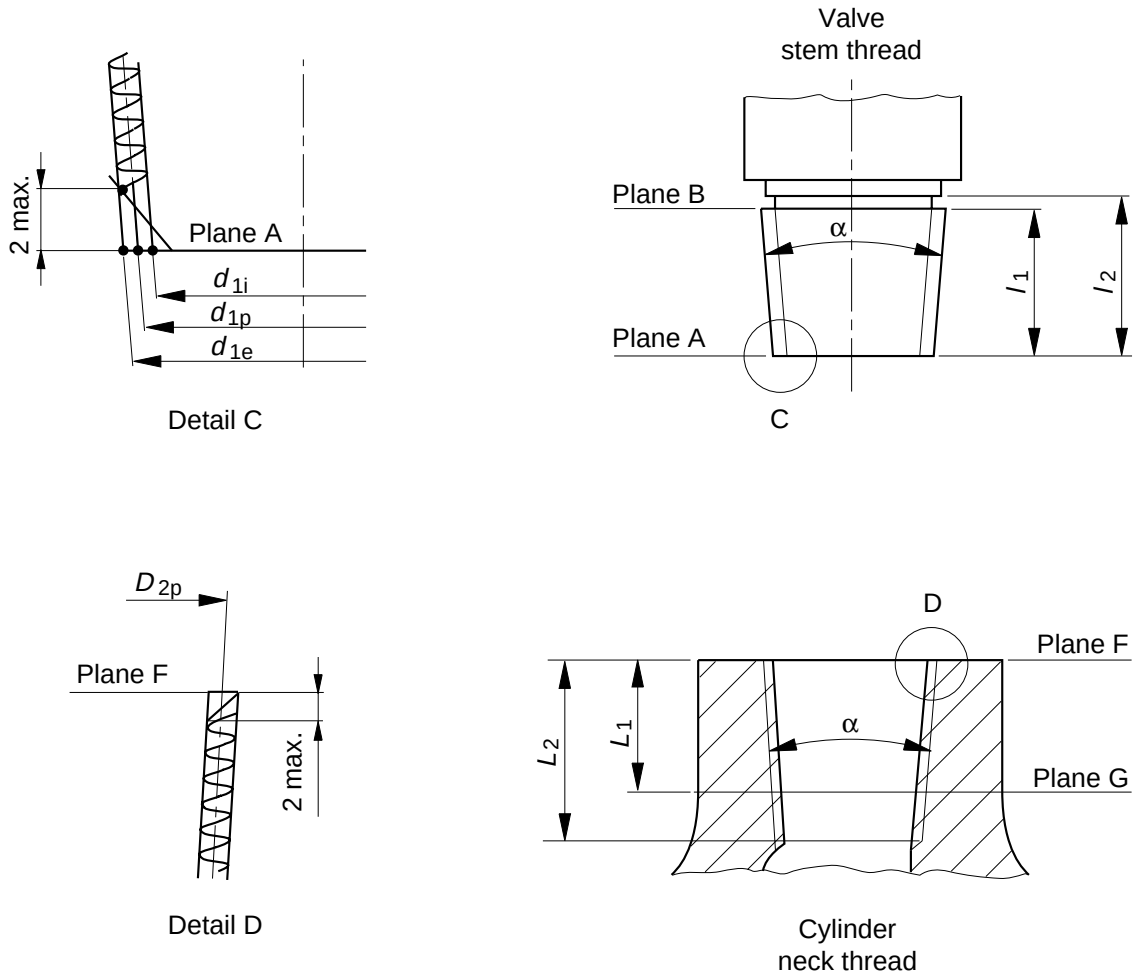

Figure 1. Thread reference planes and diameters

3.17 pitch diameter D_{2p}

Diameter of the pitch cone at reference plane F (before any chamfer is cut) (see figure 1).

3.18 reference length l_1

Reference dimension being the distance between the parallel reference planes A and B (see figure 1).

3.19 reference length L_1

Reference dimension being the distance between the parallel reference planes F and G (see figure 1).

3.20 length of external thread l_2

Length of full form thread, on the valve stem, measured along the cone axis from the reference plane A (see figure 1 and table 1).

3.21 length of internal thread L_2

Length of full form thread, in the cylinder neck, measured along the cone axis from the reference plane F (see figure 1 and table 2).

3.22 taper

Ratio of the difference of two diameters corresponding to planes, normal to the axis of the reference cone, and the axial distance between the same planes. It can be expressed as a ratio, as an angle or as a percentage.

3.23 thread profile

Thread shape obtained by the intersection of a plane through the thread axis and the threaded surface.

3.24 basic profile

Theoretical profile, when the profile of the external thread coincides with the profile of the internal thread.

3.25 design profile

Design profile differs from the basic profile due to the radius of the root, necessary for manufacturing and strength requirements. Manufacturing tolerances are taken into account, for such a profile.

3.26 pitch P

Distance, measured parallel to the cone surface, between two homologous points of two parallel consecutive flanks of the same thread (see figure 2).

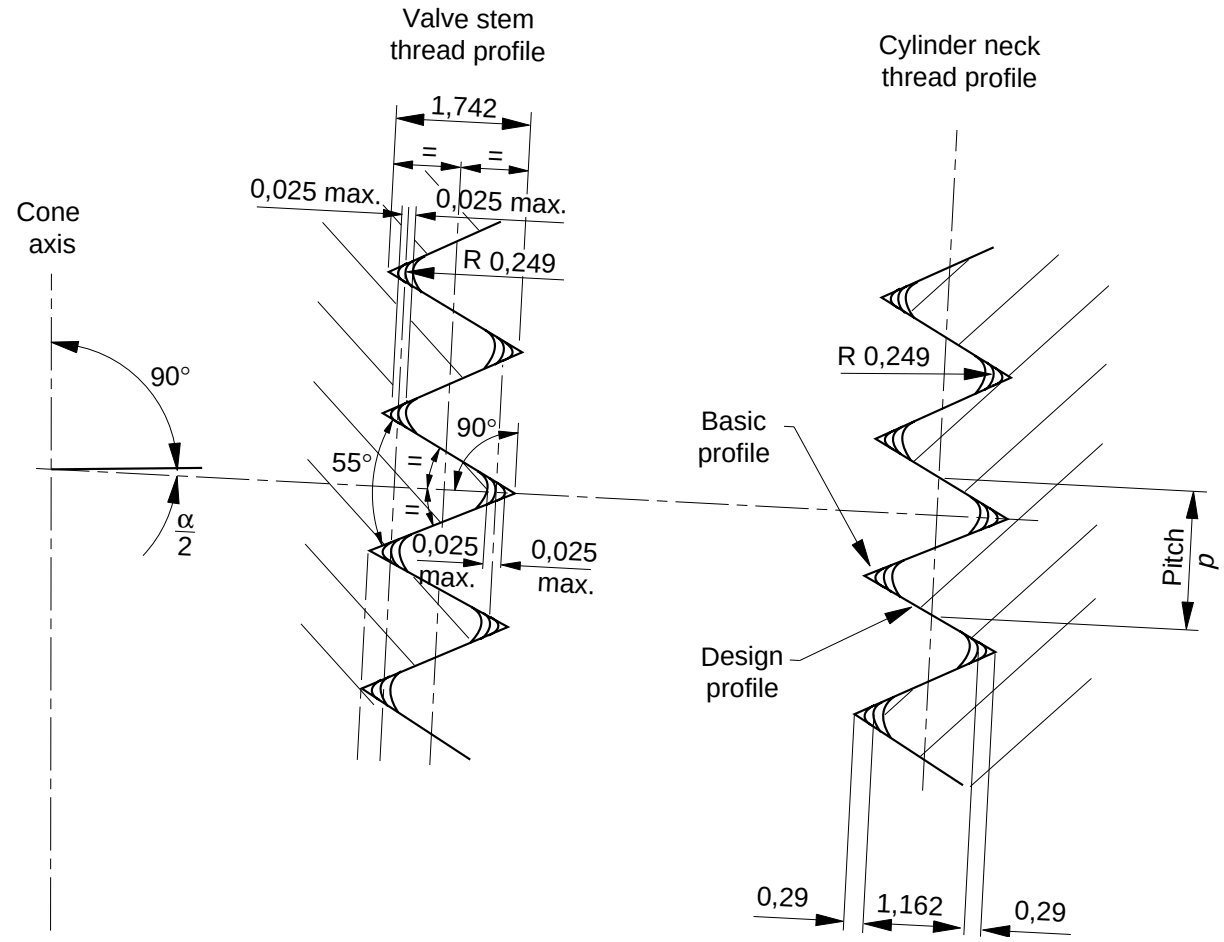

Figure 2. Thread profiles

Table 1. Valve stem dimensions

Dimensions in millimetres

Valve stem	**Major diameter** d_{1e}	**Pitch diameter** d_{1p}	**Minor diameter** d_{1i}	**Pitch diameter** d_{2p}	**Reference length** l_1	**Full threads length** l_2
Dimension	25,68	24,518	23,356	27,638	26	≥ 26
Tolerance	$^{+0,12}_{0}$	$^{+0,12}_{0}$	$^{+0,12}_{0}$	$^{+0,12}_{0}$	—	—

Table 2. Cylinder neck thread dimensions

Dimensions in millimetres

Cylinder neck thread	**Major diameter** D_{1e}	**Pitch diameter** D_{1p}	**Minor diameter** D_{1i}	**Pitch diameter** D_{2p}	**Reference length** L_1	**Full threads length** L_2
Dimension	25,16	23,998	22,836	26,638	22	≥ 22
Tolerance	$^{0}_{-0,12}$	$^{0}_{-0,12}$	$^{0}_{-0,12}$	$^{0}_{-0,12}$	—	—

4 Requirements

4.1 Thread rotation

The thread shall be a right hand thread, such that it moves away from an observer when rotated clockwise.

4.2 Taper

– Taper ratio: 3 / 25;
– Taper angle: 6° 52';
– Taper slope: 12%.

4.3 Thread profile

The thread profile is a standard Whitworth form, with a 55° angle. The form and thread height measurements are perpendicular to the cone surface (see figure 2).

4.4 Pitch P

The pitch is 1,814 mm (derived from $\frac{25,4}{14}$ mm)
(see figure 2).

5 Thread end finish

The thread of the valve stem may have a chamfer of 2 mm maximum from plane A at the bottom part and a groove at the top (see figure 1).

The thread of the cylinder neck may have a chamfered opening of 2 mm maximum from plane F (see figure 1).

6 Identification

Valves and cylinders, threaded in accordance with this standard, shall be identified by the symbol '25E'.

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