SLOVENSKI STANDARD
SIST EN 962:1999

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Premiļne plinske jeklenke - Zaģļitne kape ventilov plinskih jeklenk za uporabo v industriji in medicini - Zasnova, izdelava in preskusi

Transportable gas cylinders - Valve protection caps and valve guards for industrial and medical gas cylinders - Design, construction and tests

Ortsbewegliche Gasflaschen - Ventilschutzkappen und Ventilschutzvorrichtungen für Gasflaschen in industriellem und medizinischem Einsatz - Gestaltung, Konstruktion und Prüfungen

Bouteilles a gaz transportables - Chapeaux fermés et chapeaux ouverts de protection des robinets de bouteilles a gaz industriels et médicaux - Conception, construction et essais

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English version

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CEN

European Committee for Standardization
Comité Européen de Normalisation
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Contents **Page**

Foreword 3

Introduction 4

1 Scope 5

2 Normative references 5

3 Definitions 6

4 General requirements 6

5 Materials 7

6 Prototype testing 7

7 Marking 10

8 Permitted use 10

9 Test report 11

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of an identical text or by endorsement, at the latest by January 1997, and conflicting national standards shall be withdrawn at the latest by January 1997.

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 and the United Kingdom.

Introduction

This European Standard covers devices intended for the protection of gas cylinder valves, where such protection is required, for example, because the valve is insufficiently robust to allow safe transport, handling and storage without such protection.

This European Standard specifies the principle dimensions, requirements for fitment and drop test procedure, to confirm the provision of adequate valve protection, in the event of the occurrence of a cylinder toppling from its base.

1 Scope

This European Standard specifies the requirements for valve protection caps and guards, intended for use with industrial and medical gas cylinders.

It defines tests for checking the mechanical strength and physical properties of the valve protection cap or valve guard.

This standard applies to valve protection devices to be fitted to gas cylinders intended for liquefied, dissolved or compressed gases. This standard excludes protection devices for cylinders with a water capacity of less than 5 litres, cylinders for liquefied petroleum gases (LPG), and cylinders whereby the protection devices is fixed by means of lugs welded or brazed to the cylinder, or is welded or brazed direct to the cylinder.

This standard does not specify all the requirements that may be necessary to enable the valve protection device to be used for lifting the cylinder.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places 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 720-2	Transportable gas cylinders - Gases and gas mixtures Part 2: Determination of flammability ability of gases and gas mixtures
EN 849	Transportable gas cylinders - Cylinder valves - Specification and type testing
EN 850	Transportable gas cylinders - Medical gas cylinders - Pin index yoke type valve outlet connections for use with medical gases

3 Definitions

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

3.1 valve protection cap (cap): Device securely fixed over the valve during handling, transportation and storage. It is normally screwed on the cylinder and is removed for access to the valve.

3.2 valve guard (guard): Device protecting the valve during handling, transportation, storage and use. It is not removed to provide access to the valve.

3.3 permitted weight: Weight of the cylinder, together with its permanent attachments and test water contents, as used during the drop test, specified in 6.7.

4 General requirements

4.1 Cap

The cap shall be of adequate strength to protect the valve during handling and transportation.

It shall be capable of being securely fixed to the cylinder, either by screwed thread or other suitable means. Provision shall be made for assisted removal of the cap, for example, a hexagonal section.

The cap should be vented, unless otherwise specified. Two diametrically opposite vent holes should be provided, each having a minimum diameter of 10 mm.

The critical clearance dimensions of the cap are indicated in figure 1. These dimensions are compatible with the dimensions of the valves in EN 849.

Where a threaded fixing connection is used, the preferred thread dimensions are given in figures 1 and 4.

4.2 Guard

The guard shall be of adequate strength, to protect the valve during handling and transportation.

It shall be capable of being fixed to the cylinder, so as to prevent easy removal by the user, or dismantling under normal service conditions.

The design shall permit ready access for valve operation and assembly of operational equipment. When the guard is of a rotary type, it shall be capable of manual orientation.

The critical clearance dimensions of the guard are given in figure 2.

Where a threaded fixing connection is used, the preferred thread dimensions are given in figures 2 and 4.

Figure 3 gives examples of guards.

4.3 Testing

Prototype testing of the protection device shall be performed in accordance with the procedure described in clause 6.

5 Materials

The cap or guard shall withstand impacts and falls throughout the whole range of operating temperatures. The relationship between material properties and operating temperature, shall be taken into account. Plastics, in particular, need to be checked for low temperature suitability.

The cap or guard material, shall be adequately resistant to atmospheric corrosion, ultra violet exposure and the transported product, including solvents (e.g. acetone, dimethylformamide).

6 Prototype testing

6.1 General

These test qualify the protection device for use with valves of maximum dimensions equal to, or less than, that of the test valve, and with cylinders of mass equal to, or less than, that of the test cylinder (see 6.7.3).

The maximum dimensions of valves are given in EN 849 and EN 850.

6.2 Documentation

The following documents shall be available:

- a description of the protection device and the method by which it is fixed to the cylinder;