



SLOVENSKI STANDARD

SIST EN 14512:2007

01-januar-2007

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HY U'bc`df]f`Yb]`dc_fcj]j gfcdb]`cXdf]b`]b`gYXYybY`df]fcVb]W`g`hY U'b]a]`gcfb]`]

Tanks for the transport of dangerous goods - Tank equipment for the transport of liquid chemicals - Hinged manhole covers and neckrings with pivoting bolts

Tanks für die Beförderung gefährlicher Güter - Ausrüstung für Tanks für die Beförderung flüssiger Chemieprodukte - Klappdeckeldome

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Citernes pour le transport de matières dangereuses - Equipements de la citerne pour le transport de produits chimiques liquides - Viroles et couvercles de trou d'homme a boulons basculants a charniere

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Ta slovenski standard je istoveten z: EN 14512:2006

ICS:

13.300	Varstvo pred nevarnimi izdelki	Protection against dangerous goods
23.020.20	Posode in vsebniki, montirani na vozila	Vessels and containers mounted on vehicles

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en

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ICS 13.300; 23.020.20

English Version

Tanks for the transport of dangerous goods - Tank equipment
for the transport of liquid chemicals - Hinged manhole covers
and neckrings with pivoting bolts

Citernes pour le transport de matières dangereuses -
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Tanks für die Beförderung gefährlicher Güter - Ausrüstung
für Tanks für die Beförderung flüssiger Chemieprodukte -
Klappeckeldome

This European Standard was approved by CEN on 19 June 2006.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 14512:2006) has been prepared by Technical Committee CEN/TC 296 "Tanks for transport of dangerous goods", the secretariat of which is held by AFNOR.

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 2007, and conflicting national standards shall be withdrawn at the latest by January 2007.

This European Standard has been submitted for reference into the RID and/or in the technical annexes of the ADR. Therefore in this context the standards listed in the normative references clause and covering basic requirements of the RID/ADR not addressed within the present standard are normative only when the standards themselves are referred to in the RID and/or in the technical annexes of the ADR.

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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1 Scope

This European Standard specifies the requirements for hinged manhole covers and neckrings with pivoting bolts for use on transportable tanks with a minimum working pressure greater than 50 kPa for the transport of dangerous goods by road and rail.

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 12266-1:2003, *Industrial valves - Testing of valves - Part 1: Pressure tests, test procedures and acceptance criteria - Mandatory requirements*

EN 12266-2:2002, *Industrial valves - Testing of valves - Part 2: Tests, test procedures and acceptance criteria - Supplementary requirements*

EN 14025:2003, *Tanks for the transport of dangerous goods - Metallic pressure tanks - Design and construction*

3 Terms and definitions

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For the purposes of this document, the following terms and definitions apply.

3.1

maximum working pressure
MWP

maximum pressure up to which the equipment can be operated

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3.2

test pressure

highest effective pressure to which the shell is exposed during the hydraulic test

4 Function

The manhole cover provides access into the tank for inspection, cleaning, maintenance and loading of product. The neckring is an item that is welded into the tank that provides suitable sealing and fixation for the manhole cover.

5 Design and materials

5.1 General

The manufacturer shall specify in drawings and other papers, the design and the materials of the manhole cover and neckring. The minimum inside diameter of the neckring, for personnel entry into the tank, shall be 500 mm. Smaller neckrings, maximum diameter 300 mm, are allowed for inspection and cleaning purposes.

5.2 Design

5.2.1 The manhole cover and neckring shall be designed for at least a working pressure of 265 kPa. The design shall conform to the general requirements laid down in EN 14025. The design shall be verified by meeting the requirements of EN 14025:2003, Clause 7. Alternatively, the design shall be verified by meeting the requirements of Annex A. Design calculations will take into account working temperatures outside the range -20 °C to $+50\text{ °C}$.

5.2.2 The manhole cover shall be provided with a suitable number of clamping points with which to effect a seal onto the neckring given the tank test pressure and the seal material used. The neckring shall be provided with an appropriate number of retained, pivoting bolts or clamping points, which shall be attached to the neckring and fitted with a clamping mechanism of suitable design.

5.2.3 The opening of the manhole cover shall be controlled by a hinge incorporating a stop to prevent the cover from contacting the shell of the tank.

5.2.4 The neckring, prior to being welded into the tank, shall have a sealing face which shall be flat to within a maximum deviation of $\pm 0,5\text{ mm}$ and be round to within a maximum deviation of $3,0\text{ mm}$.

5.2.5 A safety device shall be provided where positive pressure within the tank might occur.

5.2.6 The manhole cover shall have a handle.

5.3 Materials

5.3.1 The manufacturer shall provide, with the equipment, material specification for those parts that may come into contact with the product.

5.3.2 The materials of the manhole cover and neckring shall comply with the requirements of ADR/RID and with EN 14025.

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6 Test media

6.1 Hydraulic tests

Hydraulic tests shall be carried out using a fluid in accordance with EN 12266-2:2002, A.1.5.

6.2 Pneumatic tests

Pneumatic tests shall be carried out using a gas in accordance with EN 12266-2:2002, A.1.5.

7 Type test

7.1 General

The manhole cover shall be calculated in accordance with EN 14025, however should calculation to this standard not be possible an alternative procedure as described in Annex A may be carried out.

Each manhole cover used for testing shall conform to the drawings and dimensions specified and specification provided by the manufacturer. Each design of manhole cover shall be subjected to a type test. Type testing according to 7.2 shall be carried out under ambient conditions. If the equipment is required to operate outside the temperature range -20 °C to $+50\text{ °C}$, the design shall be taken into account either in the type testing or by a validated calculation method.

7.2 Manhole cover pressure test

The manhole cover shall be hydraulically or pneumatically tested on a test rig using equivalent design of the neckring and pivoting bolts or hold downs, using a test medium conforming to 6.1 or 6.2, at a pressure equal to 1,3 times the MWP or 4 bar, whichever is the greater. The test pressure shall be maintained for a minimum of 5 min on the manhole cover without permanent deformation occurring. The leakage rate shall not exceed Rate B of EN 12266-1:2003, Table A.5.

8 Production tests

8.1 General

Each manhole cover, neckring, seal and pivot bolts produced shall conform to the drawings and other papers, in which the design and the materials were specified by the manufacturer. The production testing according to 8.2 to 8.3 shall be carried out under ambient conditions.

8.2 Function test

Each manhole cover, seal and hold down bolt shall be fitted to the neckring and checked for alignment of the seal to the sealing face and the correct location and operation of the hold down bolts.

8.3 Manhole cover pressure test

Each manhole cover shall be hydraulically or pneumatically tested, using a test medium conforming to 6.1 or 6.2, at a pressure at least equal to 1,3 times the MWP or 4 bar, whichever is the greater. The test pressure shall be maintained for a minimum of 1 min on the manhole cover during which test period leakage shall not exceed Rate B as defined in EN 12266-1:2003, Table A.5. Each neckring shall be hydraulically pressure tested in conjunction with the tank, following welding into the tank by the purchaser.

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9 Marking

The manhole cover and neckring shall be permanently marked with the following information:

- a) DN (nominal size) of the equipment;
- b) manufacturer's name or symbol;
- c) materials of construction;
- d) maximum test pressure;
- e) maximum working pressure (MWP);
- f) year of manufacture;
- g) unique serial number;
- h) reference number of this standard (i.e. EN 14512:2006);
- i) temperature range (if not within the range -20°C to $+50^{\circ}\text{C}$).

10 Supply requirements

10.1 Order information

Information such as product to be carried in the tank, nominal size, test pressure, MWP of the manhole cover, seal type, number of hold down bolts, and maximum and minimum operating temperatures shall be provided by the customer at the time of ordering.

10.2 Installation and operation

The manufacturer shall provide with each piece of equipment installation, operating and maintenance instructions for correct use of the equipment in accordance with the manufacturer's recommendations.

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