

DcgcXY'nUdfYj cn`bYj Ufb] `gbcj]E`CdfYa UdcgcXY'nUfUbgdcfhHY_c] ` _Ya]_U]^
 E`JU_i i a g_]cXXi ýb_]]b`j Ybh`]]nUj ghd`nfU_U

Tanks for the transport of dangerous goods - Tank equipment for the transport of liquid chemicals - Product discharge and air inlet valves

Tanks für die Beförderung gefährlicher Güter - Ausrüstung für Tanks für die Beförderung flüssiger Chemieprodukte - Produktabsper- und Gaswechselventile

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Citernes pour le transport de matières dangereuses - Equipements de la citerne pour le transport de produits chimiques liquides - Vannes de mise en pression de la citerne et de déchargement du produit

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Ta slovenski standard je istoveten z: EN 14432:2006

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

SIST EN 14432:2006

en

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ICS 13.300; 23.020.20

English Version

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für Tanks für die Beförderung flüssiger Chemieprodukte -
Produktauslass- und Gaswechselventile

This European Standard was approved by CEN on 9 March 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.



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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This European Standard (EN 14432:2006) 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 October 2006, and conflicting national standards shall be withdrawn at the latest by October 2006.

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 product discharge and air inlet valves for use on transportable tanks with a minimum working pressure greater than 50 kPa for the transport of dangerous goods by road and rail.

It is applicable to equipment for use on tanks with gravity and/or pressure discharge.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 736-1, *Valves - Terminology - Part 1: Definition of types of valves*

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

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3 Terms and definitions

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For the purposes of this European Standard the following terms and definitions apply.

3.1

maximum working pressure

MWP

maximum pressure up to which the valve can be operated

3.2

nominal size

designated size of valve as defined in EN ISO 6708

4 Functions

4.1 The product discharge valve is a secondary stop valve for tank bottom discharge and a primary stop valve for tank top discharge. For tanks intended for transportation of dangerous goods, it is used for the unloading and loading of the product.

4.2 The air inlet valve is a primary stop valve according to EN 736-1, it provides a closure on the tank to which a pressurizing or vapour recovery line may be attached.

5 Design and materials

5.1 General

The manufacturer shall specify, in drawings and other papers, the design and the materials of the product discharge or air inlet valve. Where non-standard flange attachments are used, the valve specification shall include information regarding mating details of the tank flange.

5.2 Design

5.2.1 The valve shall be a stop valve as defined in EN 736-1.

5.2.2 The operating mechanism shall be protected from inadvertent operation in transit either by a latching device or by locating within an enclosure.

5.2.3 As a minimum each valve shall be marked with the direction of opening of the operating mechanism.

5.3 Materials

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

5.3.2 The material elongation at fracture of the pressure-loaded components of the valve shall be a minimum of 12 %.

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6 Test media

6.1 Hydraulic tests

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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 tests

7.1 General

Each valve used for testing shall conform to the drawings and dimensions specified and specification provided by the manufacturer. Each design of valve as verified in Annex B shall be subjected to a type test. Type testing according to 7.2 to 7.5 shall be carried out under ambient conditions. If the valve is required to operate outside the temperature range -20 °C to $+50\text{ °C}$, the design shall be taken into account either by the type testing or a validated calculation method.

The tests shall be carried out with the casing/valve attached to a flange equivalent to that for which its use is intended.

7.2 Valve casing hydraulic pressure test

The valve casing shall be hydraulically tested, using a test medium conforming to 6.1, at a pressure equal to 2,25 times the MWP, or 400 kPa whichever is the greater. The test pressure shall be maintained for a minimum of 5 min on the valve casing without permanent deformation occurring.

7.3 Valve assembly pressure test

The valve assembly shall be hydraulically or pneumatically tested, using a test medium conforming to 6.1 or 6.2 at a pressure equal to 1,3 times the MWP or 400 kPa, whichever is the greater. The test pressure shall be maintained for a minimum of 5 min on the valve assembly. The leakage shall not exceed Rate A as defined in EN 12266-1:2003, Table A.5. Each assembly pressure test shall be carried out:

- a) with the valve in the closed position and the outlet open to test for leakage from the seats;
- b) with the valve in the open position and the outlet closed off to test for leakage from gland seals or body joints.

7.4 Valve assembly pneumatic tightness test

The valve assembly shall be pneumatically tested, using a test medium conforming to 6.2, at pressures equal to 0,1 and 1,0 times the MWP. The assembly shall be totally immersed in a water bath, or, where total immersion of the valve assembly is not possible, a suitable leak detection fluid shall be applied. The test pressure shall be maintained for a minimum of 5 min on the assembly during which test period leakage shall not exceed Rate A as defined in EN 12266-1:2003, Table A.5. Each pneumatic tightness test shall be carried out:

- a) with the valve in the closed position and the outlet open to test for leakage from the seats;
- b) with the valve in the open position and the outlet closed off to test for leakage from gland seals or body joints.

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7.5 Cyclic test

The valve assembly shall be subjected to a mechanical cycle test to a minimum of 1 000 full cycles ("open" to "closed") without pressure being applied. After completion of the cyclic test, the valve shall be tested in accordance with 7.4 and the leakage shall not exceed Rate A as defined in EN 12266-1:2003, Table A.5.

8 Production tests

8.1 General

Each product discharge or air inlet valve produced shall conform to the drawings and other papers in which the design and the materials were specified by the manufacturer. The production tests according to 8.2 to 8.4 shall be carried out under ambient conditions.

8.2 Function test

Each valve shall be opened and closed once.

8.3 Valve casing pressure test

Each valve casing shall be hydraulically or pneumatically tested, using a test medium conforming to 6.1 or 6.2, at a pressure equal to 1,3 times the MWP, or 400 kPa, whichever is the greater. The test pressure shall be maintained for a minimum of 1 min on the casing and the leakage shall not exceed Rate A as defined in EN 12266-1:2003, Table A.5.

8.4 Valve assembly pneumatic tightness test

Each valve assembly shall be pneumatically tested as a finally assembled device, using a test medium conforming to 6.2, at pressures equal to 0,1 and 1,0 times the MWP. The assembly shall be totally immersed in a water bath, or where total immersion of the valve assembly is not possible, a suitable leak detection fluid shall be applied. The test pressure shall be maintained for a minimum of 1 min on the assembly and the leakage shall not exceed Rate A as defined in EN 12266-1:2003, Table A.5. Each pneumatic tightness test shall be carried out:

- a) with the valve in the closed position and the outlet open to test for leakage from the seats;
- b) with the valve in the open position and the outlet closed off to test for leakage from gland seals or body joints.

9 Marking

The valve shall be permanently marked with the following information:

- a) DN (nominal size) of the valve;
- b) manufacturer's name or symbol;
- c) material of the valve casing (see Annex A);
- d) maximum working pressure (MWP);
- e) year of manufacture;
- f) unique serial number; [SIST EN 14432:2006](https://standards.iteh.ai/catalog/standards/sist/0d0650c4-b3fe-4ab2-94a1-14432:2006)
- g) reference number of this standard (i.e. EN 14432:2006); <https://standards.iteh.ai/catalog/standards/sist/0d0650c4-b3fe-4ab2-94a1-14432:2006>
- h) temperature range (if not within the range -20 °C to $+50\text{ °C}$).

10 Supply requirements

10.1 Order information

Information such as, product characteristics to be carried in the tank, nominal size of the valve, MWP of the valve, connection type and size of the valve, 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 valve installation, operating and maintenance instructions for correct use of the equipment in accordance with the manufacturer's recommendations.