SLOVENSKI STANDARD
SIST EN 14596:2005

01-maj-2005

Cisterne za prevoz nevarnega blaga - Oprema za obratovanje cistern - Tlačni varnostni ventil v sili

Tanks for transport of dangerous goods - Service equipment for tanks - Emergency pressure relief valve

Tanks für die Beförderung gefährlicher Güter - Bedienungsausrüstung von Tanks - Notentlastungsventil

Citernes destinées au transport de matieres dangereuses - Equipements de service pour citernes - Clapet de surpression accidentelle

Ta slovenski standard je istoveten z: **EN 14596:2005**

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
23.060.40	Tlačni regulatorji	Pressure regulators

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English version

Tanks for transport of dangerous goods - Service equipment for tanks - Emergency pressure relief valve

Citernes destinées au transport de matières dangereuses - Equipements de service pour citernes - Clapet de surpression accidentelle

Tanks für die Beförderung gefährlicher Güter - Bedienungsausrüstung von Tanks - Notentlastungsventil

This European Standard was approved by CEN on 3 February 2005.

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.

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Contents

Foreword

This document (EN 14596:2005) 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of an identical text or by endorsement, at the latest by September 2005, and conflicting national standards shall be withdrawn at the latest by September 2005.

This document forms part of a coherent standards programme (i.e. Tanks for transport of liquid dangerous goods with vapour pressure not exceeding 110 kPa (absolute pressure) at 50° C and petrol - Service Equipment).

This standards programme comprises the following standards:

EN 13081, *Tanks for transport of dangerous goods - Service equipment for tanks - Vapour collection adaptor and coupler*.

EN 13082, *Tanks for transport of dangerous goods - Service equipment for tanks - Vapour transfer valve*.

EN 13083, *Tanks for transport of dangerous goods - Service equipment for tanks - Adaptor for bottom loading and unloading*.

EN 13308, *Tanks for transport of dangerous goods - Service equipment for tanks - Non-pressure balanced footvalve*.

EN 13314, *Tanks for transport of dangerous goods - Service equipment for tanks - Fill hole cover*.

EN 13315, *Tanks for transport of dangerous goods - Service equipment for tanks - Gravity discharge coupler*.

EN 13316, *Tanks for transport of dangerous goods - Service equipment for tanks - Pressure balanced footvalve*.

EN 13317, *Tanks for transport of dangerous goods - Service equipment for tanks - Manhole cover assembly*.

EN 14595, *Tanks for transport of dangerous goods - Service equipment for tanks - Pressure and Vacuum Breather Vent*.

EN 14596, *Tanks for transport of dangerous goods - Service equipment for tanks - Emergency pressure relief valve*.

This document includes a Bibliography.

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.

Introduction

An emergency pressure relief valve allows venting from a tank compartment during excess pressure.

The emergency pressure relief valve may, in addition, perform the closing and opening functions of a fill hole cover, as specified in EN 13314 [1].

NOTE The emergency pressure relief valve forms part of an ADR [2] venting system, see 6.8.2.2.6 of ADR 2005, and should not be considered as a safety valve as defined in ADR.

The function of the emergency pressure relief valve may also be performed by the fill hole cover in accordance with EN 13314 [1].

1 Scope

This document covers the emergency pressure relief valve.

It specifies the performance requirements and the critical dimensions of the emergency pressure relief valve. It also specifies the tests necessary to verify the compliance of the equipment with this document.

The service equipment specified by this document is suitable for use with liquid petroleum products and other dangerous substances of Class 3 of ADR [2] which have a vapour pressure not exceeding 110 kPa at 50 °C and petrol, and which have no sub-classification as toxic or corrosive.

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, *Industrial valves – Testing of valves – Part 2: Tests, test procedures and acceptance criteria - Supplementary requirements.*

ISO 2859-1, *Sampling procedures for inspection by attributes – Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection.*

3 Terms and definitions

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

3.1
relieving pressure
pressure at which the emergency pressure relief valve starts to open

3.2
maximum working pressure (MWP)
the maximum pressure to which the equipment is designed to operate, being:

highest of the following three pressures:

a) highest effective pressure allowed in the tank during filling (maximum filling pressure allowed);

b) highest effective pressure allowed in the tank during discharge (maximum discharge pressure allowed); and

c) effective gauge pressure to which the tank is subjected by its contents (including such extraneous gases as it may contain) at the maximum working temperature.

4 Functions

When in any orientation, the emergency pressure relief valve shall function as follows:

— open, to relieve excess pressure within the tank compartment; and

— close, when the excess pressure has been relieved; and

— when closed, contain the substance within the tank compartment.

5 Design characteristics

5.1 Relieving pressure

The emergency pressure relief valve shall be vapour and liquid tight up to its relieving pressure.

The relieving pressure of the emergency pressure relief valve shall be specified by the manufacturer and shall be not less than 110 % of the maximum working pressure (MWP) of the tank compartment to which it is attached.

5.2 Weather protection

The emergency pressure relief valve shall be designed, or provision made, to eliminate the accumulation of water, which could freeze and impair the operation of the valve.

5.3 Drop test

Each type of emergency pressure relief valve shall be structurally capable of withstanding, without leakage or permanent deformation that would affect its structural integrity, a drop test as described in 6.3.4.

5.4 Vapour venting performance

The minimum vapour venting capacity of the valve shall be reached at a pressure less than the test pressure of the tank compartment to which it is attached.

Table 1 specifies the minimum vapour venting capacity in accordance with the exposed area of the tank compartment.

Table 1 — Minimum venting capacity of the valve

Exposed area of tank compartment m^2	Minimum venting capacity [a] m^3/h	Exposed area of tank compartment m^2	Minimum venting capacity [a] m^3/h
2	480	30	6 650
3	720	35	7 260
4	960	40	7 830
5	1 200	45	8 370
6	1 440	50	8 880
7	1 680	55	9 370
8	1 920	60	9 840
9	2 160	65	10 300
10	2 400	70	10 700
12	2 880	75	11 200
14	3 360	80	11 600
16	3 840	85	12 000
18	4 320	90	12 400
20	4 800	95	12 800
25	6 000	100	13 200

NOTE Interpolate for intermediate sizes.

[a] Standard cubic metres of free air at a pressure of 101,3 kPa and at a temperature of 15 °C.

5.5 Temperature range

Unless otherwise specified, the design temperature range shall be –20 °C to +50 °C.

Where the emergency pressure relief valve is subjected to more severe conditions, the design temperature range shall be extended to –40 °C or +70 °C as applicable.

5.6 Materials of construction

The manufacturer shall provide, with the equipment, a full material specification for those parts which may come into contact with the substances described in Clause 1.

5.7 Dimensional characteristics

The height of any part of the emergency pressure relief valve shall not exceed 150 mm, above its mounting face, when in the fully open position.

5.8 Electrical resistance

The electrical resistance between any conductive part of the emergency pressure relief valve, which may come into contact with the dangerous substances, and the main body of the valve shall not exceed $10^6\Omega$.

Provision shall be made for bonding the main body of the valve to the tank such that the electrical resistance between the two shall not exceed 10Ω.

5.9 Optional function

The emergency pressure relief valve may perform the opening and closing functions of the fill hole cover as specified in EN 13314.

6 Tests

6.1 General

Two classes of tests are required: production tests and type tests.

Testing methods and procedures shall conform to EN 12266-1 and EN 12266-2 except as specified within this document.

6.2 Production tests

6.2.1 General

The number, frequency and sampling methods of production test samples shall be not less than those specified within ISO 2859-1 (AQL of 2.5).

Production tests shall comprise the following:

— seat tightness test; and

— relieving pressure test.