SLOVENSKI STANDARD
SIST EN 13083:2009+A1:2013

01-december-2013

Nadomešča:
SIST EN 13083:2009

Cisterne za prevoz nevarnega blaga - Oprema za obratovanje cistern - Priključek za polnjenje in praznjenje s spodnje strani

Tanks for transport of dangerous goods - Service equipment for tanks - Adaptor for bottom loading and unloading

Tanks für die Beförderung gefährlicher Güter - Bedienungsausrüstung von Tanks - VK-Kupplung für Untenbefüllung und -entladung

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Citernes de transport de matières dangereuses - Équipement de service pour citernes - Adaptateur pour le chargement et le déchargement par le bas

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Ta slovenski standard je istoveten z: **EN 13083:2008+A1:2013**

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
23.040.60	Prirobnice, oglavki in spojni elementi	Flanges, couplings and joints

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2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13083:2008+A1

June 2013

ICS 13.300; 23.020.20; 23.040.60

Supersedes EN 13083:2008

English Version

Tanks for transport of dangerous goods - Service equipment for tanks - Adaptor for bottom loading and unloading

Citernes de transport de matières dangereuses - Équipement de service pour citernes - Adaptateur pour le chargement et le déchargement par le bas

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This European Standard was approved by CEN on 13 September 2008 and includes Amendment 1 approved by CEN on 1 March 2013.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 13083:2008+A1:2013) 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 December 2013 and conflicting national standards shall be withdrawn at the latest by December 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes ▌A1⟩ EN 13083:2008 ⟨A1▌.

This document includes Amendment 1 approved by CEN on 2013-03-01.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ▌A1⟩ ⟨A1▌.

This European Standard forms part of a coherent standards programme comprising the following standards, under the general title "Tanks for transport of dangerous goods - Service equipment for tanks":

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EN 13081, *Vapour collection adaptor and coupler*

EN 13082, *Vapour transfer valve*

EN 13083, *Adaptor for bottom loading and unloading*

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EN 13308, *Non-pressure balanced footvalve*

EN 13314, *Fill hole cover*

EN 13315, *Gravity discharge coupler*

EN 13316, *Pressure balanced footvalve*

EN 13317, *Manhole cover assembly*

EN 13922, *Overfill prevention systems for liquid fuels*

EN 14595, *Pressure and Vacuum Breather Vent*

EN 14596, *Emergency pressure relief valve*

EN 15208, *Sealed parcel delivery systems – Working principles and interface specifications*

▌A1⟩ EN 16249, *Cap for the adaptor for bottom loading and unloading* ⟨A1▌

The standards programme also includes the following Technical Report:

CEN/TR 15120, *Guidance and recommendations for loading, transport and unloading*.

▌A1⟩ Compared to EN 13083:2008 the following changes have been made:

a) in the Foreword add EN 16249 to the list of standards;

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b) in Clause 2, Normative references, add:

EN 16249 *Cap for the adaptor for bottom loading and unloading*

c) in Clause 4, Function, the last paragraph is modified;

d) in Clause 5, Design Characteristics, “5.14 Adaptor Cap” is deleted;

e) in 6.3, Type Tests, 6.3.1 General, fourth type test is modified;

f) in 6.3, “6.3.5 Adaptor cap seat tightness test” and subclauses are deleted and replaced by a compliance test with EN 16249. 〈A1〉

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

The adaptor for bottom loading and unloading, subject of this European Standard, allows the transfer of product through a mating loading coupler to a transport tank and from the tank to a service station tank by a mating gravity discharge coupler. It is required to comply with the European Directive 94/63/EC on Volatile Organic Compounds (VOC) [1].

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1 Scope

This European Standard covers externally actuated and self actuated adaptors for bottom loading and unloading.

This European Standard specifies the performance requirements and the critical dimensions of the adaptor for bottom loading and unloading. It also specifies the tests necessary to verify the compliance of the equipment with this European Standard. The equipment specified by this standard 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 subclassification 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 12266-2:2002, *Industrial valves — Testing of valves — Part 2: Tests, test procedures and acceptance criteria — Supplementary requirements*

[A1] EN 16249, *Tanks for the transport of dangerous goods — Service equipment — Cap for the adaptor for bottom loading and unloading* [A1]

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EN ISO 1302, *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation (ISO 1302:2002)*

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EN ISO 4287, *Geometrical Product Specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters (ISO 4287:1997)*

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
Maximum Working Pressure (MWP) (gauge pressure)
maximum pressure to which the equipment is designed to operate, being the 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)

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

3.2
product sensor
device which detects the presence of liquid petroleum and whose output signal can be used to display whether liquid is present

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3.3
interlock
device which can be used to initiate or prevent an action

3.4
bottom loading
filling of a tank through the tank's piping system which enables substances to enter the tank compartments from the bottom

3.5
adaptor (externally openable only)
adaptor which is only capable of being opened by an external means

3.6
self actuating adaptor
adaptor capable of being opened by built-in and external means

4 Function

The adaptor for bottom loading and unloading shall provide the following:

— a quick action liquid tight mechanical connection for the transport tank;

— liquid tightness when closed.

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[A1] The cap for the adaptor for bottom loading and unloading shall, when it is in its installed position, meet the requirements of EN 16249. [A1]

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5 Design characteristics

5.1 Type

The adaptor shall comply with the basic configuration shown in Annex A. In the open position, the adaptor shall provide a clear, unobstructed opening at least 50,8 mm in depth, measured from the sealing surface. If a poppet device is used, the adaptor poppet shall have a minimum travel of 50,8 mm, as shown in Annex A, Figure A.1. The front face of the adaptor poppet shall be flat within 0,102 mm, excluding the corner radius.

No fastening device shall protrude above the general plane of the adaptor face.

5.2 Actuation

The adaptor may be operated by mechanical or other remote means.

The adaptor (externally openable only) shall be externally opened by the mating loading or discharge coupler.

The adaptor (self actuated type) shall be capable of self actuation by means other than the mating coupler.

5.3 Pressure rating

5.3.1 Maximum working pressure (MWP)

For tank installations using non-pressure balanced footvalves, the housing and flange of the adaptor shall be designed for a MWP of 500 kPa.

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For tanks installations using pressure balanced footvalves, the housing and flange of the adaptor shall be designed for a MWP of 1 000 kPa.

5.3.2 Surge pressure

A surge pressure of 5 times the MWP shall not jeopardise the tightness of the housing or the functions of the adaptor.

5.4 Materials of construction

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

5.5 Temperature range

The adaptor shall be capable of operating across a temperature range of – 20 °C to 50 °C.

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

5.6 Product identification and communication systems

The adaptor may be capable of accepting product identification and communication system options. The sectors and orientations are given in Annex C.

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5.7 Interlocks

The adaptor may be capable of accepting interlock actuators, see Annex B.

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5.8 Mounting

The adaptor mounting flange shall be a DN 100 as follows:

— outside diameter (maximum) : 174 mm;

— inside diameter (minimum) : 100 mm;

— pitch circle diameter : 150 mm;

— number of holes : 8 equispaced;

— hole diameter : 14 mm.

NOTE 1 Tolerances: ± 1 mm.

NOTE 2 Holes should straddle adaptor centre line.

NOTE 3 A 4 hole mounting, which can accommodate the specified 8 hole flange without loss of performance may be used as an option, see Annex D.

5.9 Position indicator (optional)

The open and closed position of adaptor may be identified.

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5.10 Presence of product in the adaptor

A product sight glass or residual product sensor may be included, provided that the other functions are not compromised. The product sight glass shall, when fitted, be subjected to the shell tests in section 6.2.2.

5.11 Overall size

The adaptor should be as compact as is practicable for adequate design. The overall size of the adaptor, including the operation of any handles or controls, shall permit adjacent adaptors to be spaced on 250 mm minimum centres.

5.12 Liquid seals

The adaptor's liquid seals and sealing surfaces shall be protected from mechanical damage. The mating liquid seal(s) shall be part of the coupler for loading and part of the discharge coupler or hose connection for unloading.

5.13 Drainage

When the adaptor is mounted in a horizontal plane, drainage shall be as complete as possible after unloading.

〈A1〉 *deleted text* 〈A1〉

6 Tests

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6.1 General

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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 European Standard.

Unless otherwise specified, test fluids shall be air or other suitable gas. The choice of the fluid is the responsibility of the manufacturer.

NOTE Where the obturator forms part of the pressure containing shell, it may be closed during strength and tightness tests.

6.2 Production tests

6.2.1 General

The number, frequency and sampling methods of production test samples shall not be less than those specified within ISO 2859-1 (AQL of 2,5).