SLOVENSKI STANDARD
SIST EN 12561-2:2004

01-junij-2004

Železniške naprave - Vagoni-cisterne -2. del: Naprave, ki so nameščene na dnu cistern in so namenjene za iztok tekočin z vračanjem hlapov

Railway applications - Tank wagons - Part 2: Bottom emptying devices for liquid products including vapour return

Bahnanwendungen - Kesselwagen - Teil 2: Untenliegende Entleereinrichtung für flüssige Stoffe einschließlich Gaspendelung

Applications ferroviaires - Wagons citernes - Partie 2: Dispositifs de vidange par le bas pour produits liquides, y compris la récupération de vapeur

Ta slovenski standard je istoveten z: **EN 12561-2:2002**

ICS:

13.300	Varstvo pred nevarnimi izdelki	Protection against dangerous goods
45.060.20	Železniški vagoni	Trailing stock

SIST EN 12561-2:2004 **en**

EUROPEAN STANDARD

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EUROPÄISCHE NORM

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ICS 13.300; 45.060.20

English version

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This European Standard was approved by CEN on 3 January 2002.

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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 Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 12561-2:2002 E

Contents

Foreword

This document (EN 12561-2:2002) has been prepared by Technical Committee CEN /TC 256, "Railway applications", the secretariat of which is held by DIN.

This European Standard has to be implemented at national level, either by publication of an identical text or by endorsement, by March 2003, and conflicting national standards have to be withdrawn by March 2003.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

— Council Directive 96/49/EEC of 23 July 1996 on the approximation of the laws of the Member States with regard to the transport of dangerous goods by rail [1]);

— Council Directive 96/48/EEC of 23 July 1996 on the interoperability of the trans-european highspeed rail system[2]);

— Council Directive 93/38/EEC of 14 June 1993 co-ordinating the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors [3]);

— Council Directive 91/440/EEC of 29 July 1991 on the development of the community railways [4]).

It is in compliance with the following regulations being in force on the date of approval of this European Standard :

— Regulations concerning the International carriage of Dangerous goods by rail (RID) [5]);

— Regulations governing the reciprocal use of wagons in international traffic (RIV) [6]).

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

This series of European Standards "Railway applications — Tank wagons" consists of the following parts:

— Part 1: Marking of tank wagons for the carriage of dangerous goods.

— Part 2: Bottom emptying devices for liquid products including vapour return.

— Part 3: Bottom filling and emptying devices for gases liquefied under pressure.

— Part 4: Top devices for top emptying and filling of liquid products.

— Part 5: Top devices for bottom emptying and top filling of liquid products.

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[1]) Official Journal of the European Community No L 235 of 96/09/17.

[2]) Official Journal of the European Community No L 235 of 96/09/17.

[3]) Official Journal of the European Community No L 199 of 93/08/09.

[4]) Official Journal of the European Community No L 237 of 91/08/24.

[5]) Can be purchased from : OTIF, Gryphenhübeliweg, CH-3006 BERN

[6]) Can be purchased from : UIC, Bureau RIV-RIC, 16 rue Jean Rey, F-75015 PARIS

— Part 6: Manholes.

— Part 7: Platforms and ladders.

— Part 8: Heating connections.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this document: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies requirements on and characteristics of bottom emptying devices on tank wagons used for the carriage of liquid substances of RID. This European Standard specifies the important dimensions of connection devices for the emptying.

This European Standard is applicable to bottom vapour return devices that are fitted to tank wagons.

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 (including amendments).

EN 12972 *Tanks for transport of dangerous goods — Testing, inspection and marking of metallic tanks.*

ISO 228-1 *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation.*

EN 20286-1 *ISO system of limits and fits — Part 1: Bases of tolerances, deviations and fits (ISO 286-1:1988).*

ISO 3419 *Non alloy and alloy steel butt-welding fittings.*

ISO 4200 *Plain end steel tubes, welded and seamless — General tables of dimensions and masses per unit length.*

ISO 7005-1 *Metallic flanges — Part 1: Steel flanges.*

ISO 9329-3 *Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 3: Unalloyed and alloyed steels with specified low temperature properties.*

UIC 503 *Continental wagons running in Great Britain — General conditions (Reference, profile, axle-load, etc.) for the acceptance, in international traffic with Great-Britain, of 2-axle and bogies wagons registered with other UIC railways*[7)].

3 Terms and definitions

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

3.1
auto vent valve

tank ventilation device linked with the internal bottom valve, which opens simultaneously with the internal bottom valve.

NOTE 1 The auto vent valve is a valve that only opens during discharge.

NOTE 2 As the auto vent valve remains closed during transport, it meets the requirements of hermetically closed tank wagons

3.2
stop valve

part of the internal bottom valve comprising the disc, the gasket, the spring and the seat

7) Can be purchased from : UIC, Bureau RIV-RIC, 16 rue Jean Rey, F-75015 PARIS

4 Requirements

4.1 General

Emptying devices shall be designed to minimise product residue in all their constituent parts following loading and unloading.

Tank wagons for liquid chemical and petroleum products with bottom emptying devices shall be fitted with a double arm outlet pipe designed to empty the tank and in conformity with this standard.

4.2 Locks and seals

External valves as well as internal bottom valves shall be capable of being secured in their closed position to prevent any unintentional opening through impact or an inadvertent act.

The operating controls of the external valves shall also be equipped with devices to which a seal can be properly attached.

NOTE For customs seals a hole of diameter 15 mm is required.

4.3 Dimensions

All dimensions are given in millimetres. Unless otherwise specified in this European Standard the tolerances of EN 20286-1 apply for all dimensions.

5 Bottom discharge line

5.1 General arrangement

The bottom discharge line shall have a nominal diameter of not less than 100 mm.

The bottom discharge line shall consist of :

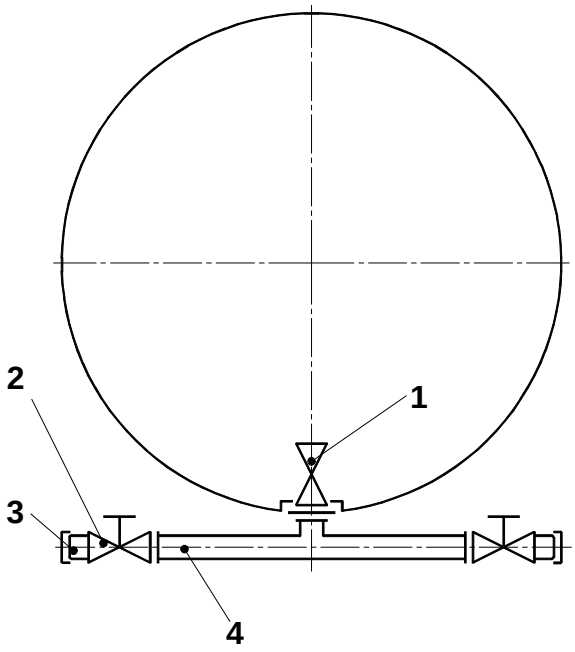
a) Except for tank wagons intended for the carriage of certain crystallisable or highly viscous substances, an internal bottom valve in accordance with 5.2,

b) an external branch pipe,

c) at each end of the branch pipe an external valve according to the requirements of 5.3 with a threaded connection according to the requirements of clause 8.

NOTE A gravity coupling according to EN 13315 can be used for tank wagons transporting petroleum products.

These fittings shall be arranged as shown in Figure 1.



Key

1 Internal bottom valve
2 External valve
3 Threaded coupling or flange or equivalent device
4 Branch pipe

Figure 1 — General arrangement of bottom discharge line

5.2 Internal bottom valve

Internal bottom valves for liquid chemical and petroleum products tank wagons shall meet the following requirements :

a) The stop valve shall be inside the tank. The valve itself may be mounted either from inside or outside the tank.

b) The internal bottom valve shall be operable from ground level. It shall be operable from both sides of the tank and its setting whether opened or closed shall be capable of being verified.

c) It shall be designed to remain closed when the external control is damaged.

d) The internal bottom valve shall :

— be protected against being wrenched off by external forces, or

— incorporate a shear groove in the external portion of the valve body, or

— provide for a similar weakened section such that the external pipework may be sheared off without causing the leak at the level of the internal bottom valve.

e) Where the internal bottom valve is operated from ground level, its opening shall simultaneously open the auto vent valve. If the tank is not fitted with an auto vent valve then it should be fitted with at least two vacuum relief valves. Each of the vacuum relief valves shall be capable of venting the tank at a rate equivalent to the maximum discharge rate of the tank such that the reduction of internal pressure does not create the risk of tank implosion.

5.3 External valves

The flanged connections for the valves shall comply with PN 16 according to ISO 7005-1:1992, face type B.

The setting whether open or closed and/or the direction of closure of external valves shall be capable of being visually verified.