



# SLOVENSKI STANDARD

## SIST EN 12561-5:2011

01-oktober-2011

Nadomešča:  
SIST EN 12561-5:2004

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### Železniške naprave - Vagoni-cisterne - 5. del: Naprave za preprečevanje izparevanja pri polnjenju ali praznjenju tekočin

Railway applications - Tank wagons - Part 5: Devices for vapour return while filling or emptying of liquid products

Bahnanwendungen - Kesselwagen - Teil 5: Gaspendeleinrichtungen für Be- und Entladung von flüssigen Stoffen

Applications ferroviaires - Wagons citernes - Partie 5: Dispositifs de vidange par le bas et de remplissage par le haut pour produits liquides

Ta slovenski standard je istoveten z: EN 12561-5:2011

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#### **ICS:**

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

**SIST EN 12561-5:2011**

**en,fr,de**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 12561-5**

June 2011

ICS 13.300; 45.060.20

Supersedes EN 12561-5:2002

English Version

## Railway applications - Tank wagons - Part 5: Devices for vapour return while filling or emptying of liquid products

Applications ferroviaires - Wagons citernes - Partie 5:  
Dispositifs de récupération de vapeur pour remplissage ou  
vidange de produits liquides

Bahnanwendungen - Kesselwagen - Teil 5:  
Gaspendeleinrichtungen für Be- und Entladung von  
flüssigen Stoffen

This European Standard was approved by CEN on 3 June 2011.

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

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, 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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## Foreword

This document (EN 12561-5:2011) has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN .

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 2011, and conflicting national standards shall be withdrawn at the latest by December 2011.

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 EN 12561-5:2002.

European Standard *Railway applications — Tank wagons* consists of the following parts:

- *Part 1: Identification plates for 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: Devices for top filling and emptying of liquid products;*
- *Part 5: Devices for vapour return while filling or emptying of liquid products;*
- *Part 6: Manholes;*
- *Part 7: Platforms and ladders;*
- *Part 8: Heating connections.*

The changes made during this revision are editorial because of the change of the title of part 1 and the necessary updates of references.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## Introduction

The top vapour return devices which are elements of the devices for filling and emptying devices, as defined in this European Standard are composed of:

- a depressurisation vapour connector, defined in this part and mainly used before filling, and
- a vapour return line including auto vent valve, defined in EN 12561-2 and mainly used during emptying.

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## 1 Scope

This European Standard specifies the requirements on and characteristics of top devices of tank wagons fitted for bottom emptying only and filling through the manhole and used for liquid substances of RID. Safety functions of these devices are subject to RID requirements and not described in this document.

This European Standard specifies in particular the important dimensions and arrangements for the connections of such tank wagons.

This European Standard applies to new tank wagons built after the 1st January 2010.

NOTE To take account of the loading gauge restrictions within Great Britain this European Standard does not apply to tank wagons operating exclusively therein.

## 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 12561-2, *Railway applications — Tank wagons — Part 2: Bottom emptying devices for liquid products including vapour return*

EN 12561-6, *Railway applications — Tank wagons — Part 6: Manholes*

EN 14564, *Tanks for transport of dangerous goods — Terminology*

EN ISO 4126-1, *Safety devices for protection against excessive pressure — Part 1: Safety valves (ISO 4126-1:2004)* <https://standards.iteh.ai/catalog/standards/sist/8188b43e-ca92-4923-b77b-02bcaedfb8da/sist-en-12561-5-2011>

EN ISO 4126-2, *Safety devices for protection against excessive pressure — Part 2: Bursting disc safety devices (ISO 4126-2:2003)*

EN ISO 286-1, *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 1: Basis of tolerances, deviations and fits (ISO 286-1)*

ISO 7005-1:1992, *Metallic flanges — Part 1: Steel flanges*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14564 and the following apply.

### 3.1

#### **depressurisation vapour connector**

connection enabling the equalisation of pressure between the tank wagon and the vapour recovery system of the filling station in order to minimise volatile organic compound emissions

**EN 12561-5:2011 (E)****4 Requirements****4.1 General**

The devices in this European Standard shall allow the filling of tank wagons through the manhole with a loading arm. The tank wagon shall be designed so that the loading arm does not come into contact with or damage the internal bottom valve when inserted into the tank wagon.

Where tank wagons are fitted with a depressurisation vapour connector, it shall conform to this standard.

Bottom emptying devices shall conform to EN 12561-2.

**4.2 Manhole**

The tank wagons shall be fitted with swing bolt manholes according to EN 12561-6 situated on the top centre line and in the proximity of the longitudinal centre line of the tank. The manhole shall be situated so that its vertical projection on the bottom of the tank is not less than 100 mm from any part of the internal bottom valve.

The manhole internal diameter shall be a nominal minimum of 500 mm and its top opening shall be in a horizontal plane.

The manhole shall not restrict the operation of the vapour sealing device on the loading arm assembly.

**4.3 Depressurisation vapour connector**

The connecting face of the depressurisation vapour connector shall be in a horizontal plane.

The connector is to be provided with a closure with an attachment facility to a chain or a stainless steel wire cable. This attachment facility shall be fit for purpose and of minimum length to avoid contact with the electric overhead line.

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Where required by RID, the depressurisation vapour connector shall be fitted with a flame trap.

**4.4 Safety valves**

Where tank wagons are fitted with pressure and/or vacuum relief valves, they shall conform to the regulations and EN ISO 4126-1.

Where required by RID, the safety valve shall be preceded by a bursting disc. The bursting disc shall conform to EN ISO 4126-2.

Safety valve assemblies shall be fitted in the vapour space of the tank on nozzles DN 80 PN 10 according to ISO 7005-1:1992.

**4.5 Dimensions**

All dimensions are given in millimetres. Unless otherwise indicated in this European Standard tolerances of EN ISO 286-1 apply.

**5 Positioning of equipment and reserved spaces**

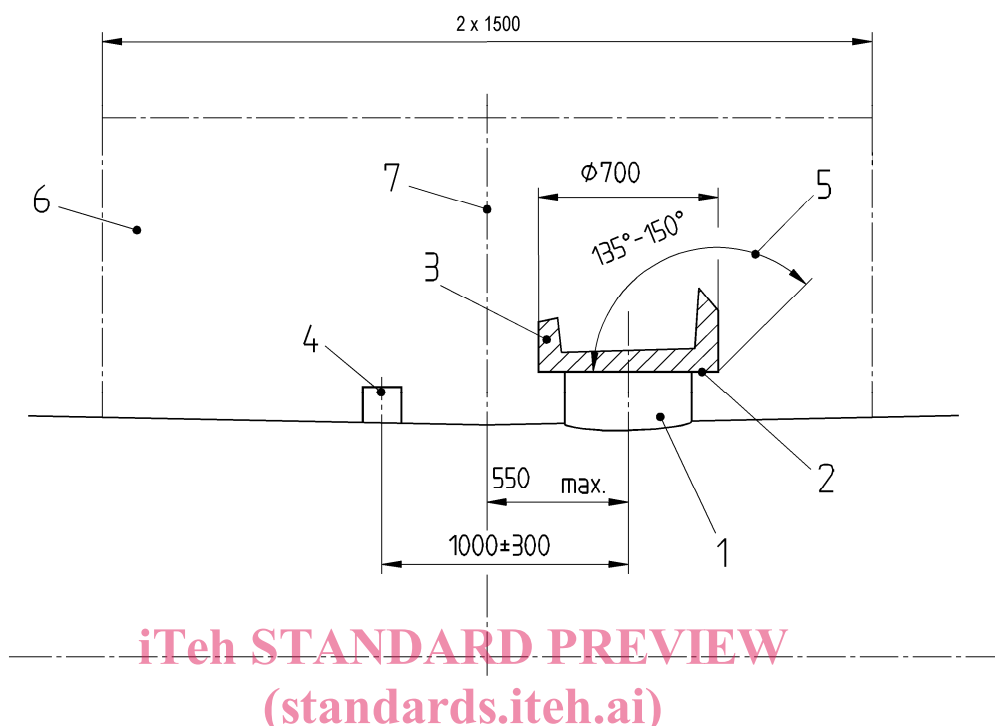
Except for specific cases agreed between the customer and the manufacturer:

- the connecting faces of the manhole and depressurisation vapour connector shall be positioned entirely within the dimensions shown in Figure 1;



- furthermore, the depressurisation vapour connector shall be located close to the manhole and on the opposite side to the manlid hinge as shown in the Figure 1.

Dimensions in millimetres



#### Key

- 1 manhole
- 2 top manhole plane
- 3 free space for loading arm
- 4 depressurisation vapour connector
- 5 opening angle of manhole lid
- 6 reserved space for filling and emptying devices
- 7 middle of tank wagon

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Figure 1 — Positioning of equipment and reserved spaces