SLOVENSKI STANDARD
SIST EN 16507:2014

01-december-2014

Železniške naprave - Talna oskrba - Oprema za točenje dizelskega goriva

Railway applications - Ground based service - Diesel refuelling equipment

Bahnanwendungen - Versorgungsdienste - Dieselbetankungseinrichtungen

Applications ferroviaires - Services au sol - Dispositifs de remplissage en carburants

Ta slovenski standard je istoveten z: **EN 16507:2014**

ICS:

45.060.10	Vlečna vozila	Tractive stock
75.200	Oprema za skladiščenje nafte, naftnih proizvodov in zemeljskega plina	Petroleum products and natural gas handling equipment

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Railway applications - Ground based service - Diesel refuelling equipment

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

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Foreword

This document (EN 16507:2014) 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of an identical text or by endorsement, at the latest by April 2015 and conflicting national standards shall be withdrawn at the latest by April 2015.

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Introduction

This European Standard contains requirements regarding equipment for railway vehicles and railway infrastructure for filling railway vehicles with diesel fuel. These minimum requirements for an open filling system describe the target system to be available across Europe to assist use of the railway network, supporting Directive 2008/57/EC.

1 Scope

This European Standard specifies interface requirements on vehicles and at designated fuelling points for diesel refuelling equipment for any railway vehicle fitted with a diesel power unit(s).

This European Standard is written for refuelling railway vehicles with fuels that are compliant with Directive 2009/30/EC.

This European Standard is not applicable to mobile or temporary refuelling points.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13012:2012, *Petrol filling stations - Construction and performance of automatic nozzles for use on fuel dispensers*

EN 13617-2:2012, *Petrol filling stations - Part 2: Safety requirements for construction and performance of safe breaks for use on metering pumps and dispensers*

EN 15877-2:2013, *Railway applications - Markings of railway vehicles - Part 2: External markings on coaches, motive power units, locomotives and on track machines*

EN 45545-7:2013 *Railway applications - Fire protection on railway vehicles - Part 7: Fire safety requirements for flammable liquid and flammable gas installations*

3 Terms and definitions

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

3.1
railway infrastructure
all installations required for the running of railway vehicles including operating and support facilities

EXAMPLE Tracks, crossings, catenaries, signals, maintenance depots.

3.2
fixed installations
all installations, including buildings and services, required for the running of railway vehicles including operating and support facilities

4 Requirements

4.1 Standard refuelling connection

Railway vehicles fitted with a diesel engine capable of running with fuel compliant with Directive 2009/30/EC, Annex II shall have an opening and fuel tank on the railway vehicle compliant with 4.2. It is permitted to also fit additional alternative fuelling connections to suit local filling couplings.

NOTE A non-exhaustive list of examples of existing systems is shown in Annex C.

Designated fuelling points on railway infrastructure that store and dispense fuel compliant with Directive 2009/30/EC, Annex II shall be fitted with at least one nozzle compliant with 4.3.1. It is permitted to also fit additional alternative filling couplings to suit local conditions at the fuelling point where the vehicle is used.

Railway vehicles fitted with a diesel engine that does not run on fuel compliant with Directive 2009/30/EC, Annex II shall have a foolproof opening and fuel tank to prevent inadvertent refuelling with the wrong fuel.

Designated fuelling points on railway infrastructure that store and dispense fuel that is not compliant with Directive 2009/30/EC, Annex II shall be fitted with a foolproof end coupling compatible with the railway vehicle it is to refuel. Fixed installations for all fuels shall comply with 4.3.2, 4.3.3 and 4.3.4.

4.2 On vehicles

There shall be an opening on each side of the vehicle, at a maximum height of 1 500 mm above rail level.

The opening shall be circular with a minimum diameter of 70 mm.

The opening shall either be directly on top of the fuel tank, or lead directly to the fuel tank by pipework, in all cases the opening shall be higher than the top of the fuel tank.

NOTE Where additional closed systems are used, examples are shown in Annex C, it is possible that the coupling height for the closed system could be lower than the top of the fuel level.

There shall be a marking located beside each opening compliant with EN 15877-2:2013, 4.5.31 (Engine fuel filling point).

The opening shall have a cover which seals it against fuel spillage. The cover shall be openable by hand without any tools, to allow the unobstructed access by the nozzle. There shall be sufficient free space around the cover to permit safe operation:

— for a screw cap there shall be a minimum of 50 mm free space radially around the cap;

— for covers with clips, or press to open, there shall be direct access to the cover without obstruction.

With the tank at maximum permitted level, there shall be no leakage from the tank or opening with all covers open when the vehicle is stood on 40 ‰ gradient and 180 mm cant in the most adverse condition for leakage.

The tank shall be designed to prevent fuel surging back along the delivery pipe when the fuel delivery suddenly ceases.

All fuel tanks shall be provided with independent ventilation to prevent pressurization that could lead to fuel delivery being stopped before the maximum level is reached inside the tank, when supplied at maximum flow rate per nozzle shown in 4.3.3.

The ventilation shall be designed so that it accommodates all the back pressure generated by the filling process until the tank is a maximum of 90 % full, in accordance with EN 45545-7:2013, 5.2.

This standard does not mandate how many nozzles are in use simultaneously. The specification for the vehicle could require more than one opening to be used simultaneously in which case the ventilation system should meet this back pressure requirement.

The ventilation and cover arrangements shall be designed so that there is no spillage of the fuel, or overflow, even in the event of overturning of the vehicle.

The vehicle shall be fitted on each side with an indicator showing the level of fuel. This indicator shall be easily seen (and read) from the filling point. Sight glasses are not permitted. The fuel level indicator should be identified; a suitable pictogram is shown in Annex B.

All parts of the fuel tank and pipework on the vehicle that come into contact with the fuel specified in Directive 2009/30/EC, Annex II shall be chemically and dimensionally stable under known service conditions and shall be corrosion free. Materials likely to come into contact with the fuel, both in liquid and vapour phases, shall be resistant to attack by this fuel.

4.3 On railway infrastructure

4.3.1 Fixed installation supply hose to vehicle

The flexible fuel supply hose shall be fitted with a nozzle on the end compliant with EN 13012, Type II.

The spout dimensions which are not specified in Table 1 of EN 13012 for a type II nozzle shall be between 170 mm and 280 mm length and between 30 mm and 45 mm outer diameter.

4.3.2 Breakaway coupling

A breakaway coupling compliant with the requirements of EN 13617-2 shall be fitted in the supply hose. This is so that, in the event of vehicle movement with the refuelling connection still attached, the coupling should break with no spillage of fuel or damage to the vehicle.

4.3.3 Fuel supply

Each supply device shall deliver fuel with a flow rate between a minimum of 80 l/min and maximum of 200 l/min.

All parts of the fixed installation that come into contact with the fuel specified in Directive 2009/30/EC, Annex II shall be chemically and dimensionally stable under known service conditions and shall be corrosion free. Materials likely to come into contact with the fuel, both in liquid and vapour phases, shall be resistant to attack by this fuel.

4.3.4 Refuelling apron

Except as shown in Annex A, there shall be an impermeable apron provided at the location of each refuelling point surrounded by an enclosure to contain 110 % of any potential spillage during the refuelling operation, as specified in the design for the fuelling point.

The drainage from the apron shall be through an oil interceptor before it enters the drainage system.

The oil interceptor shall be of suitable design for the intended outflow (e.g. drainage, foul drain, water course).

For more information on the design of the interceptor, it is recommended to seek guidance from the local water supply/drainage company and/or any bodies that could be advised by local requirements or laws.

4.4 Provision of information and instructions

4.4.1 For railway vehicles

Instructions shall be provided for the necessary operating and maintenance requirements to prevent the fuel system from leaking.