

# SVENSK STANDARD

## SS-EN 16922:2017



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### **Järnvägar – Service – Toalettömningsystem**

### **Railway applications – Ground based services – Vehicle waste water discharge equipment**

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EUROPEAN STANDARD

**EN 16922**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2017

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ICS 45.060.20

English Version

## Railway applications - Ground based services - Vehicle waste water discharge equipment

Applications ferroviaires - Services au sol - Equipement  
de vidange des eaux usées des véhicules

Bahnanwendungen - Versorgungsdienste -  
Fahrzeugabwasserentsorgungseinrichtungen

This European Standard was approved by CEN on 28 August 2017.

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**SS-EN 16922:2017 (E)**

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## **European foreword**

This document (EN 16922:2017) 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of an identical text or by endorsement, at the latest by April 2018, and conflicting national standards shall be withdrawn at the latest by April 2018.

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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 2008/57/EC.

For relationship with EU Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document.

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## SS-EN 16922:2017 (E)

### 1 Scope

This European Standard specifies the interface requirements for controlled emission toilet equipment on railway vehicles and the infrastructure, including catering area sink waste retention tanks. Vehicle and infrastructure specific requirements are also given.

The European Standard includes fixed and portable infrastructure equipment used to empty retention tanks, but excludes equipment fitted to railway vehicles where no fixed connections are used between vehicle and infrastructure.

### 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 1717, *Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow*

EN 12663-1, *Railway applications - Structural requirements of railway vehicle bodies - Part 1: Locomotives and passenger rolling stock (and alternative method for freight wagons)*

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 16362:2013, *Railway applications - Ground based services - Water restocking equipment*

EN 45545-2, *Railway applications - Fire protection on railway vehicles - Part 2: Requirements for fire behaviour of materials and components*

### 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

##### **grey water**

waste water from hand wash and galley sinks, usually contaminated with soap, germicides, residues of food, drink and dish water

#### 3.3

##### **servicing point**

location where maintenance, refuelling and cleaning is carried out

#### 3.4

##### **controlled emission toilet**

toilet system where the toilet waste is retained on the vehicle and emptied at prescribed locations, including on board waste treatment systems which are permitted to discharge some wastes at various locations



## 4 General

### 4.1 Description of vacuum

Vacuum can be expressed in different manners. Absolute vacuum is 0 bar and atmospheric pressure is nominally 1 bar (although this varies). When a vacuum pump evacuates 0,2 bar from a tank the remaining pressure within the tank is 0,8 bar (if the atmospheric pressure is 1 bar), but this can be expressed in a variety of ways. Therefore to avoid doubt, because the atmospheric pressure varies, throughout this standard vacuum is expressed as a negative number of bars below atmosphere (i.e. in the above example this is expressed within this standard as -0,2 bar).

Positive pressure is expressed as bars above atmosphere, i.e. in this standard an absolute pressure of 3 bar is shown as +2 bar.

### 4.2 Description of controlled emission toilet systems

There are five generic types of controlled emission toilets fitted to railway vehicles considered in this standard, shown diagrammatically in Annex A.

## 5 Requirements

### 5.1 General requirements

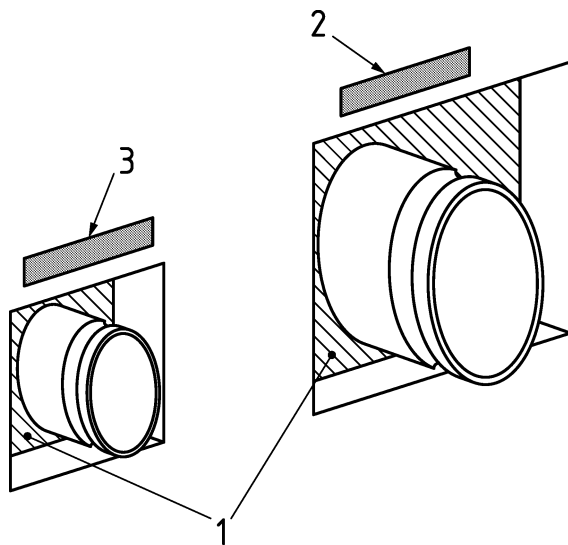
Each vehicle and servicing point shall be clearly marked with the type of system that is fitted, or intended to be used for. Adjacent to the connection on the vehicle and infrastructure the background, or if there is no background, an area beside the connection with a minimum dimension 60 mm x 60 mm, shall be coloured as shown in Table 1 and marked with the wording shown in Table 1 in the native language of the servicing point or the home depot of the vehicle and also at least in English. The labels shall be in a contrasting colour to the background colour.

**Table 1 — Identification of toilet system**

Type of system	Background colour The size of background colour shall be at least 60 mm x 60 mm:	Wording of label beside 3" connection	Wording of label beside 1" connection	Wording of label beside high pressure water connection
Compact system	Green	Toilet discharge	Flushing pipe	Not applicable
On line vacuum	Green	Toilet discharge	Flushing pipe	Not applicable
Permanent vacuum	Red	Toilet discharge, ensure ventilation is open	Flushing pipe	Not applicable
Chemical	Blue	Chemical toilet discharge	Flushing and chemical addition	Not applicable
On board waste treatment (e.g. bioreactor)	Yellow	On board waste treatment toilet discharge and cleaning	On board waste treatment water inlet and suction	On board waste treatment high pressure water
Catering area sink waste retention	Grey	Catering area sink waste	Not applicable	Not applicable

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The position on a vehicle of the background colour and labels described in Table 1 is shown diagrammatically in Figure 1.



### Key

- 1 background colour of type of system (as shown in Table 1)
- 2 label beside 3" connection
- 3 label beside 1" connection

**Figure 1 — Identification of connections on vehicle**

On the label shown in Figure 1, key 2, the volume of the retention tank in litres shall be indicated.

## 5.2 Vehicle requirements

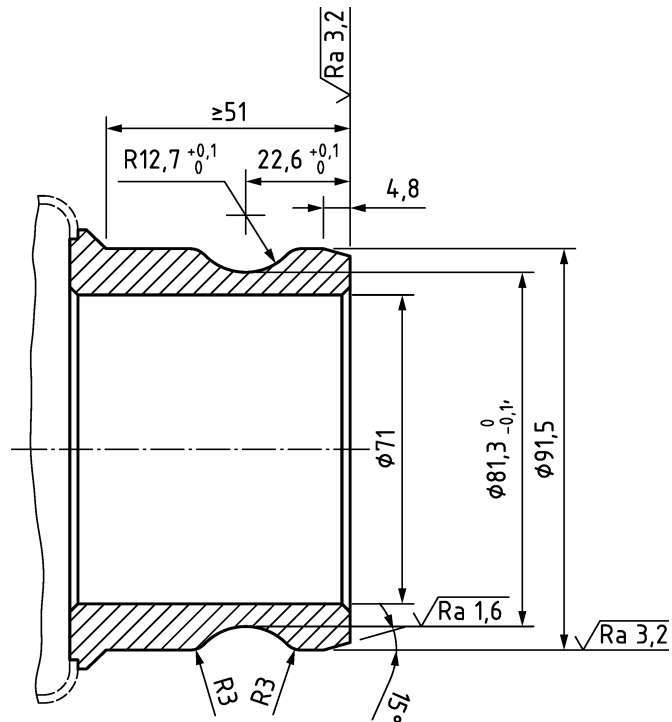
### 5.2.1 Connections

Except for vehicles fitted with on board waste treatment system each vehicle with toilet waste or catering area sink waste retention tank shall be fitted with a connection as shown in Figure 2 on each side of vehicle. Vehicles fitted with on board waste treatment system are permitted to have the 3" connection on one side, but it is preferable to have on both sides.

For toilet waste retention tanks each such vehicle, excluding locomotives, shall also be fitted with a flushing connection as shown in Figure 3. On vehicles fitted with a chemical toilet system (Annex A, Figure A.4) the flushing connection shall be fitted on each side of the vehicle, for all other toilet systems the flushing connection shall be as a minimum of one side of the vehicle.

As design guidance it is preferable to have the flushing connection on both sides. It is also preferable to fit flushing connections for catering area sink waste tanks. Provision of the flushing connection reduces maintenance costs and increases efficiency of cleaning operations of the tank.

Dimensions in millimetres

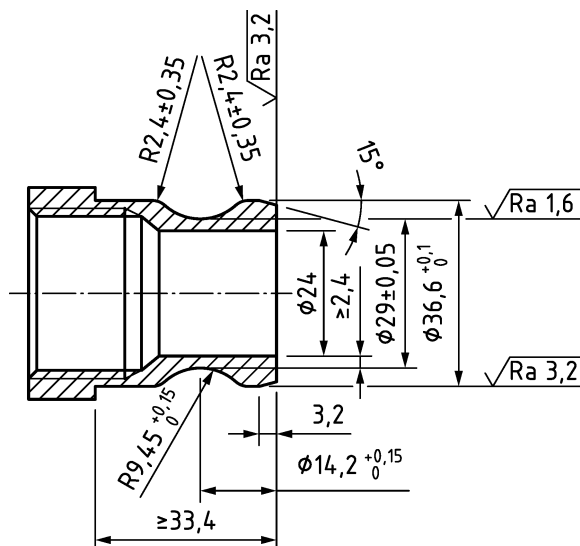


NOTE 1 General tolerances  $\pm 0,1$ .

NOTE 2 Material: stainless steel.

Figure 2 — 3" connection (inner part)

Dimensions in millimetres



NOTE 1 General tolerances  $\pm 0,1$ .

NOTE 2 Material: stainless steel.

Figure 3 — 1" connection (inner part)