
Železniške naprave - Infrastruktura - Vlečni stroji, priklopni vagoni in pripadajoča oprema - 1. del: Splošne varnostne in tehnične zahteve za vožnjo in delovanje

Railway applications - Infrastructure - Demountable machines, trailers and associated equipment - Part 1: Technical requirements for travelling and working

Bahnanwendungen - Infrastruktur - Ausgleisbare Maschinen, Anhänger und zugehörige Ausstattung - Teil 1: Technische Anforderungen an die Versetzfahrt und die Arbeitsstellung

Applications ferroviaires - Infrastructure - Machines dérailables, remorques et éléments associés - Partie 1 : Prescriptions techniques pour le déplacement et le travail

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**Railway applications - Infrastrucutre - Demountable
machines, trailers and associated equipment - Part 1:
Technical requirements for travelling and working**

Applications ferroviaires - Infrastructure - Machines
déraillables, remorques et éléments associés - Partie 1 :
Prescriptions techniques pour le déplacement et le
travail

Bahnanwendungen - Infrastruktur - Ausgleisbare
Maschinen, Anhänger und zugehörige Ausstattung -
Teil 1: Technische Anforderungen an die Versetzfahrt
und die Arbeitsstellung

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 256.

If this draft becomes a European Standard, 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.

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prEN 15955-1:2022 (E)**European foreword**

This document (prEN 15955-1:2022) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 15954-1:2013 and EN 15955-1:2013.

Principal amended clauses compared to EN 15954-1:2013 and EN 15955-1:2013:

- general all references updated to latest issue;
- 4.3 attachments with rail wheels clarified to be a trailer;
- Clause 5 clauses concerning machine profile, running safety, stability, structural strength, and failure recovery transferred to prEN 15955-2:2022;
- 5.11 additional clause added for machines intended for urban rail for warning systems;
- 5.13.3 additional clause added for machines intended for urban rail for MEWP bonding;
- 5.19 additional clause added for machines intended for urban rail for emergency stopping devices;
- 5.23 additional clause added for demountable modules;
- 5.24 additional clause added for rated capacity indicator / rated capacity limiter (RCI/RCL);
- 5.25 additional clause added for climatic conditions in geographic areas;
- Clause 6 additional clause added for trailers used to carry machines;
- Clause 8 documentation requirements completely revised (was previously called ‘User Information’);
- Annex B revised to suit new format and numbering.

EN 15955, *Railway applications — Track — Demountable machines, trailers and associated equipment*, is currently composed with the following parts:

- *Part 1: Technical requirements for travelling and working;*
- *Part 2: General safety requirements.*

Introduction

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

This document is the first of a series of two parts of the European Standard: *Railway applications — Track — Demountable machines, trailers and associated equipment*, dealing with railway specific risks of the demountable machines and trailers when travelling and working on railway infrastructures:

- Part 1 covers the safety and technical requirements for the machines in travelling and working modes, and is applicable for all machines, including those in operation on urban rail;
- Part 2 covers the safety requirements for the machines in travelling and working modes; this is a document harmonized with the European Machinery Directive 2006/42/EC.

Part 1 defines requirements for approval of the machine for use on the railway. Depending on the decision of the Infrastructure Manager, Urban Rail Manager or the requirements in National rules the assessment of conformance could be undertaken by the Infrastructure/Urban Rail Manager concerned, by a third party assessor or by the manufacturer as a declaration of conformity.

Part 2 defines requirements for the machine to be declared conformant by the manufacturer, except in the case of machines classified under Annex 4 of the Machinery Directive, which require a conformity check in conjunction with a notified body.

The hazards which exist in all mechanical, electrical, hydraulic, pneumatic and other components of machines and which are dealt with in the relevant European standards are not within the scope of this document. Where necessary, references are made to appropriate standards of this type.

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1 Scope

This document specifies the requirements for demountable machines and trailers, including road-rail trailers – henceforward referred to as ‘machines’.

NOTE Trailers, including road-rail trailers, are considered as machines because they are moved along the track by powered machines.

This document specifies the requirements to deal with the common hazards presented by their use on the railway during transport, assembly and installation, commissioning, travelling and working on track, use including setting, programming, and process changeover, operation, cleaning, fault finding, maintenance and de-commissioning of the machines and associated equipment when they are used as intended and under conditions of misuse which are reasonably foreseeable.

These machines are not designed nor intended to operate signalling and control systems and are only designed and intended to work and travel under special operating conditions in accordance with those permitted by the infrastructure managers. These machines are not permitted to run on railway lines open to normal traffic.

NOTE Other rail mounted railway maintenance and infrastructure inspection machines are dealt with in other European standards, see Technical Report CEN/TR 17498:2020.

This document is also applicable to machines and associated equipment that in working mode are partly supported on the ballast or the formation.

The requirements in this document are based on the assumption that the machines are used, operated and maintained by skilled person(s).

This document does not apply to the following:

- requirements for quality of the work or performance of the machine;
- use of separate equipment temporarily mounted on machines;
- machines that utilize the overhead contact line system for traction purposes or as a power source;
- hazards due to air pressure caused by the passing of high-speed trains at more than 200 km/h;
- operation subject to special rules, e.g. potentially explosive atmospheres;
- hazards due to natural causes, e.g. earthquake, lightning, flooding;
- working methods;
- operation in severe working conditions requiring special measures, e.g. corrosive environments, contaminating environments, strong magnetic fields;
- hazards occurring when used to handle suspended loads which may swing freely.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 14033-1:2017, *Railway applications — Track — Railbound construction and maintenance machines — Part 1: Technical requirements for running*

EN 14033-2:2017, *Railway applications — Track — Railbound construction and maintenance machines — Part 2: Technical requirements for travelling and working*

EN 15273-2:2013+A1:2016, *Railway applications — Gauges — Part 2: Rolling stock gauge*

EN 15746-1:2020, *Railway applications — Track — Road-rail machines and associated equipment — Part 1: Technical requirements for travelling and working*

EN 15746-2:2020, *Railway applications — Track — Road-rail machines and associated equipment — Part 2: General safety requirements*

EN 15877-1:2012+A1:2018, *Railway applications — Marking on railway vehicles — Part 1: Freight wagons*

prEN 15955-2:2022, *Railway applications — Infrastructure — Demountable machines, trailers and associated equipment — Part 2: General safety requirements*

EN 50121-3-1:2017,¹ *Railway applications — Electromagnetic compatibility — Part 3-1: Rolling stock — Train and complete vehicle*

EN 50122-1:2011,² *Railway applications — Fixed installations — Electrical safety, earthing and the return circuit — Part 1: Protective provisions against electric shock*

EN 60529:1992,³ *Degrees of protection provided by enclosures (IP code)*

EN 62262:2002, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

EN ISO 13766-1:2018, *Earth-moving and building construction machinery — Electromagnetic compatibility (EMC) of machines with internal electrical power supply — Part 1: General EMC requirements under typical electromagnetic environmental conditions (ISO 13766-1:2018)*

¹ As impacted by EN 50121-3-1:2017/A1:2019.

² As impacted by EN 50122-1:2011/A1:2011, EN 50122-1:2011/AC:2011, EN 50122-1:2011/A2:2016, EN 50122-1:2011/A3:2016 and EN 50122-1:2011/A4:2017.

³ As impacted by EN 60529:1992/corrigendum May 1993, EN 60529:1992/A1:2000, EN 60529:1992/A2:2013, EN 60529:1992/A2:2013/AC:2019-02 and EN 60529:1992/AC:2016-02.

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EN ISO 13766-2:2018, *Earth-moving and building construction machinery — Electromagnetic compatibility (EMC) of machines with internal electrical power supply — Part 2: Additional EMC requirements for functional safety (ISO 13766-2:2018)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply. ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

demountable machine

self-propelled machine that can travel and work on rail only, and is not intended to operate signalling and control systems

Note 1 to entry: Such a machine is designed to get on and off track by its own means or with other lifting equipment. In the case of demounting by its own means, these are not intended for general movement on the ground.

Note 2 to entry: Such a machine is permitted to work and travel on the railway only under special operating conditions granted by the infrastructure manager.

3.2

trailer

non-self-propelled machine that can be towed on rail wheels and not intended to operate signalling and control systems

3.3

road-rail trailer

trailer that can be towed on rails and ground

Note 1 to entry: Towed also includes when the trailer is being pushed in front of a powered machine.

Note 2 to entry: It does not imply that the trailer is suitable for use on the public road.

3.4

mobile elevating work platform

MEWP

mobile machine that is intended to move persons to working positions where they are carrying out work from the work platform with the intention that persons are getting on and off the work platform at one defined access position and which consists as a minimum of a work platform with controls, an extending structure and a chassis

3.5

host vehicle

basic road vehicle or item of machinery which is converted to operate additionally on rails, this vehicle is either EU road permissible or CE marked

3.6

manufacturer

entity that designs, constructs or converts the original item of machinery/vehicle to a demountable machine or trailer

3.7**operator**

person who handles the controls of a machine in order to perform the functions of the machine in travelling and working mode

3.8**working place**

driving cabs, working cabs, combined working and driving cabs, operator positions situated outside cabs, platforms and places situated at control or maintenance locations including areas for conveyance of personnel

3.9**travelling mode**

machine configuration that allows movement along the track, all parts stowed with everything within the applicable gauge, the machine does not require to interrelate with the signalling and control systems (in this condition there is no need to ensure operation of signalling systems or for cab-based signalling equipment), this mode also includes shunting

Note 1 to entry: A machine in travelling mode does not need to meet the operational requirements for the movement of trains on the railway network.

Note 2 to entry: The mode only relates to the technical configuration of the machine independent of the operational mode (e.g. movements during shunting and regular train running).

3.10**working mode**

mode by which the machine is used to perform any of its permitted intended tasks, as soon as any part of the machine is un-stowed it is in working mode

3.11**operating track**

track corresponding to the criteria of the Infrastructure Manager on which vehicles may run under normal signalling arrangements (with or without a speed limit)

3.12**working track**

track not open for normal traffic

3.13**degraded working track**

track being maintained for which the geometrical parameters may reach the limiting values and for which special operational restrictions may apply

Note 1 to entry: The limiting values as specified in EN 14033-2:2017, Annex F.

3.14**railway infrastructure**

all installations required for the running of railway vehicles

EXAMPLE Tracks, overhead contact line system, signals.

3.15**rail level**

datum point corresponding to the top of the rail