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Railway applications - Infrastructure - Demountable machines, trailers and associated equipment - Part 2: General safety requirements

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 15955-2:2025 sisaldab Euroopa standardi EN 15955-2:2025 ingliskeelset teksti.	This Estonian standard EVS-EN 15955-2:2025 consists of the English text of the European standard EN 15955-2:2025.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 28.05.2025.	Date of Availability of the European standard is 28.05.2025.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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This European Standard was approved by CEN on 7 March 2025.

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European foreword

This document (EN 15955-2:2025) 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of an identical text or by endorsement, at the latest by November 2025, and conflicting national standards shall be withdrawn at the latest by November 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 15954-2:2013 and EN 15955-2:2013.

Principal amended clauses compared to EN 15954-2:2013 and EN 15955-2:2013:

— General: all references updated to latest issue;

— 4.3: attachments with rail wheels clarified to be a trailer;

— Clause 5: all of Part 5 renumbered and each clause revised;

— 6.4: additional clause added for machines that profile rails;

— Clause 7: requirements for machine marking revised (was previously 8.3 and 8.4);

— Clause 8: documentation requirements completely revised (was previously called ‘Information for Use’);

— Annex A: revised to suit new format and numbering;

— Annex B: revised to suit new format and numbering;

— Annex C: revised and updated;

— Annex: new Annexes D to H added.

EN 15955, *Railway applications — Infrastructure — 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*.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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 second 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 specifies 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 specifies 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.

This document was prepared to meet the basic requirements of EU Directives to facilitate an open market for goods and services.

This document deals with railway specific risks of the demountable machines and trailers as defined in 3.1, 3.2 and 3.3 when travelling and working on railway infrastructures.

This document is a type C standard as defined in EN ISO 12100:2010.

When provisions of this type C standard are different from those which are stated in type B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built in accordance with the provisions of this type C standard.

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.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

— machine manufacturers (small, medium and large enterprises);

— health and safety bodies (regulators, accident prevention organizations, market surveillance etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

— machine users/employers (small, medium and large enterprises);

— machine users/employees (e.g. trade unions, organizations for people with special needs);

— service providers, e.g. for maintenance (small, medium and large enterprises);

— consumers (in case of machinery intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate at the drafting process of this document.

1 Scope

This document specifies the general safety requirements for demountable machines and trailers, including road-rail trailers – henceforward referred to as 'machines', for use when travelling and working on railway track.

NOTE 1 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 will not run on railway lines open to normal traffic.

NOTE 2 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 include requirements for:

— quality of the work or performance of the machine;

— use of separate equipment temporarily mounted on machines;

— machines that utilize external power supplies such as 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 2:1992,[1] *Classification of fires*

EN 3-7:2004+A1:2007, *Portable fire extinguishers - Part 7: Characteristics, performance requirements and test methods*

EN 280-1:2022, *Mobile elevating work platforms - Part 1: Design calculations - Stability criteria - Construction - Safety - Examinations and tests*

EN 280-2:2022, *Mobile elevating work platforms - Part 2: Additional safety requirements for load lifting appliances on the extending lifting structure and work platform*

EN 402:2003, *Respiratory protective devices - Lung governed demand self-contained open-circuit compressed air breathing apparatus with full face mask or mouthpiece assembly for escape - Requirements, testing, marking*

EN 403:2004, *Respiratory protective devices for self-rescue - Filtering devices with hood for escape from fire - Requirements, testing, marking*

EN 474-1:2022, *Earth-moving machinery - Safety - Part 1: General requirements*

EN 547-1:1996+A1:2008, *Safety of machinery - Human body measurements - Part 1: Principles for determining the dimensions required for openings for whole body access into machinery*

EN 547-2:1996+A1:2008, *Safety of machinery - Human body measurements - Part 2: Principles for determining the dimensions required for access openings*

EN 547-3:1996+A1:2008, *Safety of machinery - Human body measurements - Part 3: Anthropometric data*

EN 614-1:2006+A1:2009, *Safety of machinery - Ergonomic design principles - Part 1: Terminology and general principles*

EN 614-2:2000+A1:2008, *Safety of machinery - Ergonomic design principles - Part 2: Interactions between the design of machinery and work tasks*

EN 618:2002+A1:2010, *Continuous handling equipment and systems - Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed belt conveyors*

EN 619:2022, *Continuous handling equipment and systems - Safety requirements for equipment for mechanical handling of unit loads*

EN 620:2021, *Continuous handling equipment and systems - Safety requirements for fixed belt conveyors for bulk materials*

[1] As impacted by EN 2:1992/A1:2004.

EN 894-1:1997+A1:2008, *Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 1: General principles for human interactions with displays and control actuators*

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EN 894-3:2000+A1:2008, *Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 3: Control actuators*

EN 894-4:2010, *Safety of machinery - Ergonomics requirements for the design of displays and control actuators - Part 4: Location and arrangement of displays and control actuators*

EN 981:1996+A1:2008, *Safety of machinery - System of auditory and visual danger and information signals*

EN 1032:2003+A1:2008, *Mechanical vibration - Testing of mobile machinery in order to determine the vibration emission value*

EN 1837:2020, *Safety of machinery - Integral lighting of machines*

EN 12077-2:2024, *Cranes safety - Requirements for health and safety - Part 2: Limiting and indicating devices*

EN 12663-1:2010+A2:2023, *Railway applications - Structural requirements of railway vehicle bodies - Part 1: Locomotives and passenger rolling stock (and alternative method for freight wagons)*

EN 12999:2020, *Cranes - Loader cranes*

EN 13000:2010+A1:2014, *Cranes - Mobile cranes*

EN 13001-1:2015, *Cranes - General design - Part 1: General principles and requirements*

EN 13135:2013+A1:2018, *Cranes - Safety - Design - Requirements for equipment*

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 14363:2016+A2:2022, *Railway applications - Testing and Simulation for the acceptance of running characteristics of railway vehicles - Running Behaviour and stationary tests*

EN 15566:2022, *Railway applications - Railway rolling stock - Draw gear and screw coupling*

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

EN 15877-1:2024, *Railway applications - Markings of railway vehicles - Part 1: Freight wagons*

EN 15955-1:2025, *Railway applications - Infrastructure - Demountable machines, trailers and associated equipment — Part 1: Technical requirements for travelling and working*

EN 45545-2:2020+A1:2023, *Railway applications - Fire protection on railway vehicles - Part 2: Requirements for fire behaviour of materials and components*

EN 50121-3-1:2017,[2] *Railway applications - Electromagnetic compatibility - Part 3-1: Rolling stock - Train and complete vehicle*

EN 50121-3-2:2016,[3] *Railway applications - Electromagnetic compatibility - Part 3-2: Rolling stock - Apparatus*

EN 50153:2014,[4] *Railway applications - Rolling stock - Protective provisions relating to electrical hazards*

EN 50155:2021, *Railway applications - Rolling stock - Electronic equipment*

EN 50206-1:2010, *Railway applications - Rolling stock - Pantographs: Characteristics and tests - Part 1: Pantographs for main line vehicles*

EN 50206-2:2010, *Railway applications - Rolling stock - Pantographs: Characteristics and tests - Part 2: Pantographs for metros and light rail vehicles*

EN 50317:2012,[5] *Railway applications - Current collection systems - Requirements for and validation of measurements of the dynamic interaction between pantograph and overhead contact line*

EN 50318:2018,[6] *Railway applications - Current collection systems - Validation of simulation of the dynamic interaction between pantograph and overhead contact line*

EN 50367:2020,[7] *Railway applications - Fixed installations and rolling stock - Criteria to achieve technical compatibility between pantographs and overhead contact line*

EN 50405:2015,[8] *Railway applications - Current collection systems - Pantographs, testing methods for contact strips*

EN 60529:1991,[9] *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN 60204-1:2018, *Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:2016, modified)*

EN 60204-32:2008, *Safety of machinery - Electrical equipment of machines - Part 32: Requirements for hoisting machines (IEC 60204-32:2008)*

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

[3] As impacted by EN 50121-3-2:2016/A1:2019.

[4] As impacted by EN 50153:2014/A1:2017 and EN 50153:2014/A2:2020.

[5] As impacted by EN 50317:2012/A1:2022.

[6] As impacted by EN 50318:2018/A1:2022.

[7] As impacted by EN 50367:2020/A1:2022.

[8] As impacted by EN 50405:2015/A1:2016.

[9] 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.

EN 60825-1:2014,[10] *Safety of laser products - Part 1: Equipment classification and requirements (IEC 60825-1:2014)*

EN 61310-1:2008, *Safety of machinery - Indication, marking and actuation - Part 1: Requirements for visual, acoustic and tactile signals (IEC 61310-1:2007)*

EN 61310-2:2008, *Safety of machinery - Indication, marking and actuation - Part 2: Requirements for marking (IEC 61310-2:2007)*

EN 61310-3:2008, *Safety of machinery - Indication, marking and actuation - Part 3: Requirements for the location and operation of actuators (IEC 61310-3:2007)*

EN 61508-3:2010, *Functional safety of electrical/electronic/programmable electronic safety-related systems - Part 3: Software requirements (IEC 61508-3:2010)*

EN IEC 61496-1:2020, *Safety of machinery - Electro-sensitive protective equipment - Part 1: General requirements and tests (IEC 61496-1:2020)*

EN ISO 2860:2008, *Earth-moving machinery - Minimum access dimensions (ISO 2860:1992)*

EN ISO 2867:2011, *Earth-moving machinery - Access systems (ISO 2867:2011)*

EN ISO 3411:2007, *Earth-moving machinery - Physical dimensions of operators and minimum operator space envelope (ISO 3411:2007)*

EN ISO 3449:2008, *Earth-moving machinery - Falling-object protective structures - Laboratory tests and performance requirements (ISO 3449:2005)*

EN ISO 3471:2008, *Earth-moving machinery - Roll-over protective structures - Laboratory tests and performance requirements (ISO 3471:2008)*

EN ISO 3744:2010, *Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Engineering methods for an essentially free field over a reflecting plane (ISO 3744:2010)*

EN ISO 4413:2010, *Hydraulic fluid power - General rules and safety requirements for systems and their components (ISO 4413:2010)*

EN ISO 4414:2010, *Pneumatic fluid power - General rules and safety requirements for systems and their components (ISO 4414:2010)*

EN ISO 4871:2009, *Acoustics - Declaration and verification of noise emission values of machinery and equipment (ISO 4871:1996)*

EN ISO 5353:1998, *Earth-moving machinery, and tractors and machinery for agriculture and forestry - Seat index point (ISO 5353:1995)*

[10] As impacted by EN 60825-1:2014/A11:2021, EN 60825-1:2014/A11:2021/AC:2022-03 and EN 60825-1:2014/AC:2017-06.

EN ISO 6682:2008, *Earth-moving machinery - Zones of comfort and reach for controls (ISO 6682:1986, including Amd 1:1989)*

EN ISO 6683:2008, *Earth-moving machinery - Seat belts and seat belt anchorages - Performance requirements and tests (ISO 6683:2005)*

EN ISO 7096:2020, *Earth moving machinery - Laboratory evaluation of operator seat vibration (ISO 7096:2020)*

EN ISO 7731:2008, *Ergonomics - Danger signals for public and work areas - Auditory danger signals (ISO 7731:2003)*

EN ISO 11201:2010, *Acoustics - Noise emitted by machinery and equipment - Determination of emission sound pressure levels at a work station and at other specified positions in an essentially free field over a reflecting plane with negligible environmental corrections (ISO 11201:2010)*

EN ISO 11688-1:2009, *Acoustics - Recommended practice for the design of low-noise machinery and equipment - Part 1: Planning (ISO/TR 11688-1:1995)*

EN ISO 12001:2009, *Acoustics - Noise emitted by machinery and equipment - Rules for drafting and presentation of a noise test code (ISO 12001:2009)*

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

EN ISO 13732-1:2008, *Ergonomics of the thermal environment - Methods for the assessment of human responses to contact with surfaces - Part 1: Hot surfaces (ISO 13732-1:2006)*

EN ISO 13849-1:2023, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1:2023)*

EN ISO 13849-2:2012, *Safety of machinery - Safety-related parts of control systems - Part 2: Validation (ISO 13849-2:2012)*

EN ISO 13850:2015, *Safety of machinery - Emergency stop function - Principles for design (ISO 13850:2015)*

EN ISO 13854:2019, *Safety of machinery - Minimum gaps to avoid crushing of parts of the human body (ISO 13854:2017)*

EN ISO 13855:2010, *Safety of machinery - Positioning of safeguards with respect to the approach speeds of parts of the human body (ISO 13855:2010)*

EN ISO 13857:2019, *Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs (ISO 13857:2019)*

EN ISO 14118:2018, *Safety of machinery - Prevention of unexpected start-up (ISO 14118:2017)*

EN ISO 14119:2013, *Safety of machinery - Interlocking devices associated with guards - Principles for design and selection (ISO 14119:2013)*

EN ISO 14120:2015, *Safety of machinery - Guards - General requirements for the design and construction of fixed and movable guards (ISO 14120:2015)*

EN ISO 14122-2:2016, *Safety of machinery - Permanent means of access to machinery - Part 2: Working platforms and walkways (ISO 14122-2:2016)*

EN ISO 14122-3:2016, *Safety of machinery - Permanent means of access to machinery - Part 3: Stairs, stepladders and guard rails (ISO 14122-3:2016)*

EN ISO 16001:2017, *Earth-moving machinery - Object detection systems and visibility aids - Performance requirements and tests (ISO 16001:2017)*

EN ISO 20643:2008,[11] *Mechanical vibration - Hand-held and hand-guided machinery - Principles for evaluation of vibration emission (ISO 20643:2005)*

ISO 3864-1:2011, *Graphical symbols - Safety colours and safety signs - Part 1 Design principles for safety signs and safety markings*

ISO 3864-2:2016, *Graphical symbols - Safety colours and safety signs - Part 2 Design principles for product safety labels*

ISO 3864-3:2012, *Graphical symbols - Safety colours and safety signs - Part 3 Design principles for graphical symbols for use in safety signs*

ISO 3864-4:2011, *Graphical symbols - Safety colours and safety signs - Part 4 Colorimetric and photometric properties of safety sign material*

ISO 3795:1989, *Road vehicles, and tractors and machinery for agriculture and forestry - Determination of burning behaviour of interior materials*

ISO 4305:2014,[12] *Mobile cranes - Determination of stability*

ISO 4310:2009, *Cranes - Test code and procedures*

ISO 5006:2017, *Earth-moving machinery - Operator's field of view - Test method and performance criteria*

ISO 6405-1:2017, *Earth-moving machinery - Symbols for operator controls and other displays - Part 1: Common symbols*

ISO 7000:2019, *Guide to graphical symbols for use on equipment*

ISO 7010:2019, *Graphical symbols - Safety colours and safety signs - Registered safety signs*

ISO 8434-2:2007, *Metallic tube connectors for fluid power and general use - Part 2: 37° flared connectors*

ISO 10263-2:2009, *Earth-moving machinery - Operator enclosure environment - Part 2: Air filter element test method*

ISO 10263-3:2009, *Earth-moving machinery - Operator enclosure environment - Part 3: Pressurization test method*

[11] As impacted by EN ISO 20643:2008/A1:2012.

[12] As impacted by ISO 4305:2014/AMD 1:2016.

ISO 11112:1995,[13] *Earth-moving machinery - Operator's seat - Dimensions and requirements*

ISO 11926-1:1995, *Connections for general use and fluid power - Ports and stud ends with ISO 725 threads and O-ring sealing - Part 1: Ports with O-ring seal in truncated housing*

ISO 11926-2:1995, *Connections for general use and fluid power - Ports and stud ends with ISO 725 threads and O-ring sealing - Part 2: Heavy duty (S series) stud ends*

ISO 12117-2:2008,[14] *Earth-moving machinery - Laboratory tests and performance requirements for protective structures of excavators - Part 2: Roll-over protective structures (ROPS) for excavators of over 6 t*

ISO 12508:1994, *Earth-moving machinery - Operator station and maintenance areas - Bluntness of edges*

ISO 15817:2012, *Earth-moving machinery - Safety requirements for remote operator control systems*

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 move onto 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 hauled on rail wheels and is not intended to operate signalling and control systems

[13] As impacted by ISO 11112:1995/AMD 1:2001.

[14] As impacted by ISO 12117-2:2008/COR 1:2010 and ISO 12117-2:2008/AMD 1:2016.