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Railway applications - Design requirements for steps, handrails and associated access for staff - Part 1: Passenger vehicles, vans and locomotives

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

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English Version

## Railway applications - Design requirements for steps, handrails and associated access for staff - Part 1: Passenger vehicles, vans and locomotives

Applications ferroviaires - Exigences pour la  
conception des marchepieds, mains courantes et accès  
destinés au personnel - Partie 1 : Véhicules voyageurs,  
fourgons et locomotives

Bahnanwendungen - Konstruktionsanforderungen an  
Tritte, Handgriffe und entsprechende Zugänge für das  
Personal - Teil 1: Passagierfahrzeuge, Gepäckwagen  
und Lokomotiven

This European Standard was approved by CEN on 20 June 2022.

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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.

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

**EN 16116-1:2022 (E)**

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## European foreword

This document (EN 16116-1:2022) 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of an identical text or by endorsement, at the latest by January 2023, and conflicting national standards shall be withdrawn at the latest by January 2023.

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 16116-1:2013.

This European standard is part of the series EN 16116, Railway applications — Design requirements for steps, handrails and associated access for staff, which consists of the following parts:

- Part 1: Passenger vehicles, vans and locomotives;
- Part 2: Freight wagons.

The technical changes with respect to the previous edition are listed below:

- a) New normative reference documents EN 16839:2017, EN 17343:2020 (Clause 2);
- b) requirements for free space for shunter during coupling are substituted by reference to EN 16839:2017 (6.2.1);
- c) requirements for free space around the draw hook are substituted by reference to EN 16839:2017 (6.2.3);
- d) alignment of terms and definitions to EN 17343:2020;
- e) clarification of requirements for movable steps (7.1, 7.4);
- f) Annex ZA updated.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For relationship with EU Directive(s) / Regulation(s), 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, Turkey and the United Kingdom.

**EN 16116-1:2022 (E)****Introduction**

Passenger vehicles, vans and locomotives are designed so that staff are not exposed to undue risk during coupling and access to the vehicle or to special equipment. It is therefore essential to define common requirements for rolling stock.

## 1 Scope

This document specifies the minimum ergonomic and structural integrity requirements for steps and handrails used by staff to access the following heavy rail vehicles:

- passenger vehicles;
- vans;
- locomotives;
- power units of rolling stock;
- passenger-rated car carriers.

This document defines the required spaces necessary for shunter handrails and shunter's stand and gives references for the required spaces necessary for handling of screw couplings with side buffers. For staff access, it defines footsteps, handrails and their dimensions and free spaces. To fulfil the requirements for loads which are applied by the staff, it defines dimensions and requirements for materials or design loads.

This document also defines the general requirements of steps and handrail for access to external equipment, for example windscreens, wipers or external lights.

## 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 131-1:2015+A1:2019, *Ladders - Part 1: Terms, types, functional sizes*

EN 131-2:2010+A2:2017, *Ladders - Part 2: Requirements, testing, marking*

EN 10025-2:2019, *Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels*

EN 14752:2019, *Railway applications — Bodyside entrance systems*

EN 15085-1:2007+A1:2013, *Railway applications - Welding of railway vehicles and components - Part 1: General*

EN 16116-2:2021, *Railway applications — Design requirements for steps, handrails and associated access for staff — Part 2: Freight wagons*

EN 16839:2017, *Railway applications - Rolling stock - Head stock layout*

EN 17343:2020, *Railway applications - General terms and definitions*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**