



SLOVENSKI STANDARD
SIST EN 13481-1:2004
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**Železniške naprave – Zgornji ustroj – Zahteve za izdelavo pritrdilnih sistemov – 1.
del: Definicije**

Railway applications - Track - Performance requirements for fastening systems - Part 1:
Definitions

Bahnanwendungen - Oberbau - Leistungsanforderungen für
Schienenbefestigungssysteme - Teil 1: Definitionen

Applications ferroviaires - Voie - Prescriptions de performance pour les systemes de
fixation - Partie 1: Définitions

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English version

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This European Standard was approved by CEN on 11 March 2002.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This document EN 13481-1:2002 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of an identical text or by endorsement, at the latest by December 2002, and conflicting national standards shall be withdrawn at the latest by December 2002.

This document has been prepared under Mandates (M/024¹, M/275²) given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directives.

No existing European Standard is superseded.

This European Standard is one of the series EN 13481 “Railway applications — Track — Performance requirements for fastening systems” which consists of the following parts.

- Part 1: Definitions;
- Part 2: Fastening systems for concrete sleepers;
- Part 3: Fastening systems for wood sleepers;
- Part 4: Fastening systems for steel sleepers;
- Part 5: Fastening systems for slab track;
- Part 6: Special fastening systems for attenuation of vibration;
- Part 7: Special fastening systems for switches and crossings and check rails.

These are supported by the test methods in the series EN 13146 “Railway applications — Track — Test methods for fastening systems”.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

¹⁾ Railway Equipment

²⁾ Standardization in the field of Railway Equipment on the Interoperability of the Trans-European High-Speed Rail System

1 Scope

This European Standard defines the terms and definitions used in prEN 13146 and in EN 13481.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

prEN 13146-1, *Railway applications — Track — Test methods for fastening systems - Part 1: Determination of longitudinal rail restraint.*

prEN 13146-2, *Railway applications — Track — Test methods for fastening systems - Part 2: Determination of torsional resistance.*

prEN 13146-3, *Railway applications — Track — Test methods for fastening systems - Part 3: Determination of attenuation of impact loads.*

prEN 13146-4, *Railway applications — Track — Test methods for fastening systems - Part 4: Effect of repeated loading.*

prEN 13146-5, *Railway applications — Track — Test methods for fastening systems Part 5: Determination of electrical resistance.*

prEN 13146-6, *Railway applications — Track — Test methods for fastening systems - Part 6: Effect of severe environmental conditions.*

prEN 13146-7, *Railway applications — Track — Test methods for fastening systems Part 7: Determination of clamping force.*

prEN 13146-8, *Railway applications — Track — Test methods for fastening systems - Part 8: In service testing.*

EN 13481-2, *Railway applications — Track — Performance requirements for fastening systems — Part 2: Fastening systems for concrete sleepers.*

EN 13481-3, *Railway applications — Track — Performance requirements for fastening systems — Part 3: Fastening systems for wood sleepers.*

EN 13481-4, *Railway applications — Track — Performance requirements for fastening systems — Part 4: Fastening systems for steel sleepers.*

EN 13481-5, *Railway applications — Track — Performance requirements for fastening systems — Part 5: Fastening systems for slab track.*

prENV 13481-6, *Railway applications — Track — Performance requirements for fastening systems — Part 6: Special fastening systems for attenuation of vibration.*

prEN 13481-7, *Railway applications — Track — Performance requirements for fastening systems — Part 7: Special fastening systems for switches and crossings and check rails.*

3 Terms and definitions

For the purposes of prEN 13146 and EN 13481, the following terms and definitions apply.

3.1

metro system

passenger carrying railway system operating in urban areas, characterized by medium speed (up to about 100 km/h) and frequent stopping and starting

3.2

ballasted track

track in which the sleepers are supported in ballast

3.3

slab track

track in which the structure supporting the rails and transmitting the track forces into the sub-base consists of a slab supported directly on a formation without ballast. The slab may be an asphalt or reinforced concrete pavement laid insitu, precast concrete units or a combination of precast concrete and insitu concrete or asphalt

3.4

sleeper

beam, which may be composite in construction, which supports running rails, guard rails and check rails at right angles to its axis. Normally the beam supports two running rails to form one track

3.5

baseplate

non elastic component which supports the rail and is secured to the supporting structure

3.6

baseplate pad

non-metallic pad placed between baseplate and sleeper

3.7

rail pad

non-metallic pad placed between rail and baseplate or rail and sleeper

3.8

active area of a rail pad

area of the pad surface that is in contact with a rail

3.9

running rail

rail which supports the wheels of vehicles moving along the track

3.10

embedded rail

rail which is installed with its running surface approximately at the same level as the surrounding surface. A flangeway is maintained alongside the gauge face of the rail

3.11

check rail

rail laid close to the gauge face of a running rail which takes part in lateral guidance of the wheel and prevents derailment in small radius curved track and switches and crossings

3.12

guard rail

rail, laid parallel to a running rail, which is intended to control the lateral movement of derailed wheels

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3.13

fastening system

assembly of components which secures a rail to the supporting structure and retains it in the required position whilst permitting any necessary vertical, lateral and longitudinal movement. Such an assembly includes components to distribute the loads from the rail into the supporting structure, and where necessary to prevent wear of the contact surfaces on the supporting structure and to electrically insulate the rail from the supporting structure

3.14

direct fastening system

assembly in which a rail is directly secured to the supporting structure with or without a baseplate

3.15

indirect fastening system

assembly in which a rail is secured to a baseplate independently of the fastening of the baseplate to the supporting structure

3.16

rigid fastening system

assembly which is designed to clamp the rail tightly to the sleeper and does not incorporate a resilient component apart from any rail pad

NOTE A fully compressed spring washer is not a resilient component.

3.17

reference fastening system

assembly which complies with prEN 13481 and has a record of satisfactory performance in the user's track

3.18

clamping force

vertical force applied to the upper surface of one rail foot by the fastening assembly clips

3.19

static stiffness

deflection per unit force measured under a uniaxial static force

3.20

vertical stiffness

vertical deflection measured normal to the base of the sleeper between specified minimum and maximum applied loads

3.21

dynamic stiffness

deflection per unit force measured under a cyclic uniaxial force over the frequency range (3 – 5) Hz

3.22

transfer stiffness

frequency dependent ratio of the force on the blocked output side of a vibration isolator to the displacement on the input side during simple harmonic vibration in the range (25 – 400) Hz

3.23

vibration attenuation

reduction in transmission of vibration from running and check rails into the supporting structure

3.24

noise attenuation

reduction in emission of audible vibration into the surroundings