

CEN/TC 256/SC 1

“Infrastructure”

Zagreb, 2012-10-12



CEN/TC 256/SC 1

Railway applications / Infrastructure

Organization

Title

Railway applications – Infrastructure

Scope

Standardisation on general requirements for infrastructure design, installation and maintenance (bridges and tunnels are excluded). The standards also cover materials, components, assemblies, works and machines associated with railway infrastructure.

Chairman

Mr. Francisco de Melo PARENTE (PT) – Railway Engineering Consultant

Secretary

Mr. Eduardo CORREIA (PT) – IPQ/APNCF

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Organizations in liaison (4)

EFRTC – European Federation of Railway Trackworks Contractors

EIM – European Railway Infrastructure Managers

UIC – International Union of Railways

UITP – International Union of Public Transport



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Working Groups (12)

- **WG 4** *Rails*
- **WG 5** *Track construction and maintenance machines*
- **WG 15** *Track alignment design parameters*
- **WG 16** *Sleepers and bearers*
- **WG 17** *Fastening systems*
- **WG 18** *Switches and crossings*
- **WG 21** *Acceptance of trackwork after renewal and/or maintenance work*
- **WG 28** *Track geometry quality*
- **WG 34** *Qualification of trackworks contractors*
- **WG 39** *Safety protection on the track during work*
- **WG 40** *Noise barriers*
- **WG 46** *Ballastless track*



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Meetings

Two plenary meetings per year

The 1st meeting of CEN/TC 256/SC 1 “*Track*” took place in Brussels, 1991-12-14

The 42nd meeting of CEN/TC 256/SC 1 “*Infrastructure*” took place in Zagreb, 2012-10-12

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WG 4 RAILS



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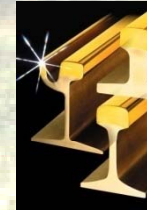
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CEN/TC 256/SC 1

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WG 4 “Rails”

Scope: All railway rails: manufacturing, welding and jointing.

Convenor: Mr. Ruiz, V. (ES)

Secretary: Mr. Frank, N. (AT)

Published standards: 10

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Published standards

EN 13674-1:2011	Railway applications – Track – Rail – Part 1: Vignole railway rails 46 kg/m and above
EN 13674-2:2006 + A1:2010	Railway applications – Track – Rail – Part 2: Switch and crossing rails used in conjunction with Vignole railway rails 46 kg/m and above
EN 13674-3:2006 + A1:2010	Railway applications – Track – Rail – Part 3: Check rails
EN 13674-4:2006 + A1:2009	Railway applications – Track – Rail – Part 4: Vignole railway rails from 27 kg/m to, but excluding 46 kg/m
EN 14811:2006 + A1:2009	Railway applications – Track – Special purpose rail – Grooved and associated construction



CEN/TC 256/SC 1

Railway applications / Infrastructure



EN 14587-1:2007	Railway applications – Track – Flash butt welding of rails – Part 1: New R220, R260, R260Mn and R350HT grade rails in a fixed plant
EN 14587-2:2009	Railway applications – Track – Flash butt welding of rails – Part 2: New R220, R260, R260Mn and R350HT grade rails by mobile welding machines at sites other than a fixed plant
EN 14730-1:2006 + A1:2010	Railway applications – Track – Aluminothermic welding of rails – Part 1: Approval of welding processes
EN 14730-2:2006	Railway applications – Track – Aluminothermic welding of rails – Part 2: Qualification of aluminothermic welders, approval of contractors and acceptance of welds
EN 15594:2009	Railway applications – Track – Restoration of rails by electric arc welding



CEN/TC 256/SC 1

Railway applications / Infrastructure



Under development

EN 13674-1:2011/prA1
(WI 00256599)

**Railway applications – Track – Rail – Part 1:
Vignole railway rails 46 kg/m and above**

prEN 13674-2 REVIEW
(WI 00256600)

**Railway applications – Track – Rail – Part 2: Switch
and crossing rails used in conjunction with Vignole
railway rails 46 kg/m and above**

prEN 13674-4 REVIEW
(WI 00256610)

**Railway applications – Track – Rail – Part 4:
Vignole railway rails from 27 kg/m to, but excluding
46 kg/m**

prEN 14811 REVIEW
(WI 00256603)

**Railway applications – Track – Special purpose rail
– Grooved rail and associated construction**



CEN/TC 256/SC 1

Railway applications / Infrastructure



prEN 14730-1 REVIEW
(WI 00256601)

Railway applications – Track – Aluminothermic welding of rails – Part 1: Approval of welding processes

prEN 14587-1 REVIEW
(WI 00256605)

Railway applications – Track – Flash butt welding of rails – Part 1: New R220, R260, R260Mn and R350HT grade rails in a fixed plant

prEN 14587-3
(WI 00256339)

Railway applications – Track – Flash butt welding of rails – Part 3: Welding in association with crossing construction



CEN/TC 256/SC 1

Railway applications / Infrastructure



prEN 16273
(WI0256522)

Railway applications – Track – Forged rail transitions

(WI0256606)

Railway applications – Track – Restoration and repair of manganese crossings

Railway applications – Track – Aluminothermic welding of grooved rails

Railway applications – NDT on rails in track – Part 1: Requirements for ultrasonic inspection and evaluation principles

Railway applications – NDT on rails in track – Part 2: Requirements for describing and identifying internal and surface rail defects



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WG 5 Track construction and maintenance machines



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WG 5 “Track construction and maintenance machines”

Scope: Running and/or working conditions for track construction and maintenance machines.

Convenor: Mr. James, M. (UK)

Secretary: Mrs. Delaney, L. (UK)

Published standards: 6



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Railway applications / Infrastructure



Published standards

EN 13977:2011

Railway applications – Track – Safety requirements for portable machines and trolleys for construction and maintenance

EN 14033-1:2011

Railway applications – Track – Railbound construction and maintenance machines – Part 1: Technical requirements for running

**EN 14033-2:2008
+A1:2011**

Railway applications – Track – Railbound construction and maintenance machines – Part 2: Technical requirements for working

**EN 14033-3:2009
+A1:2011**

Railway applications – Track – Railbound construction and maintenance machines – Part 3: General safety requirements



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**EN 15746-1:2010
+A1:2011**

Railway applications – Track – Road-rail machines and associated equipment – Part 1: Technical requirements for running and working

**EN 15746-2:2010
+A1:2011**

Railway applications – Track – Road-rail machines and associated equipment – Part 2: General safety requirements

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Under development

prEN 14033-1 REVIEW
(WI 00256607)

Railway applications – Track – Railbound construction and maintenance machines – Part 1: Technical requirements for running

prEN 14033-2 REVIEW
(WI 00256608)

Railway applications – Track – Railbound construction and maintenance machines – Part 2: Technical requirements for working

prEN 14033-3 REVIEW

Railway applications – Track – Railbound construction and maintenance machines – Part 3: General safety requirements



CEN/TC 256/SC 1

Railway applications / Infrastructure



FprEN 15954-1
(WI 00256565)

Railway applications – Track – Trailers and associated equipment – Part 1: Technical requirements for running and working

FprEN 15954-2
(WI 00256566)

Railway applications – Track – Trailers and associated equipment – Part 2: General safety requirements



CEN/TC 256/SC 1

Railway applications / Infrastructure



FprEN 15955-1
(WI 00256567)

Railway applications – Track – Demountable machines and associated equipment – Part 1: Technical requirements for running and working

FprEN 15955-2
(WI 00256568)

Railway applications – Track – Demountable machines and associated equipment – Part 2: General safety requirements

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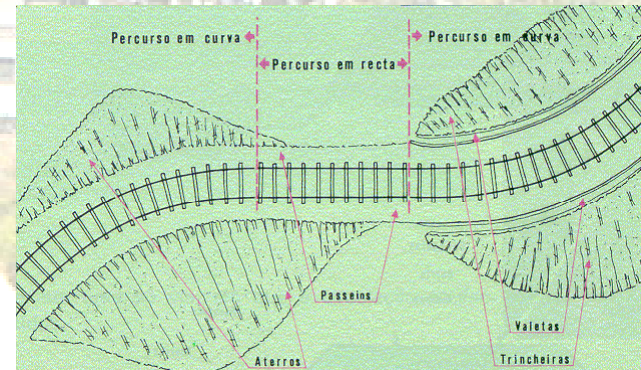
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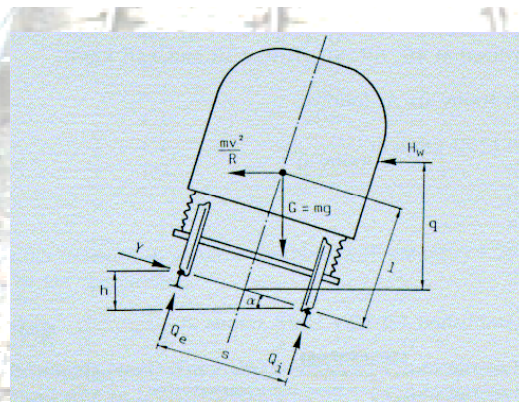


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WG 15 Track alignment design parameters



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WG 15 “Track alignment design parameters”

Scope: Limits for permissible speed on existing lines as a function of layout parameters. Limits of layout parameters for the planning of lines based on desired speed and other requirements. Speeds to be considered are 80 km/h to 300 km/h.

Convenor: Dr. Küfver, B. (SE)

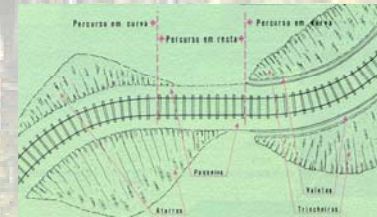
Secretary: Mr. Rydell, O. (SE)

Published standards: 2



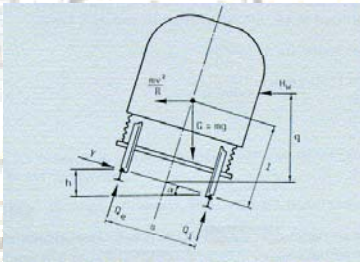
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Published standards

EN 13803-1:2010	Railway applications – Track – Track alignment design parameters – Track gauges 1435 mm and wider – Part 1: Plain line
EN 13803-2:2006 + A1:2009	Railway applications – Track – Track alignment design parameters – Track gauges 1435 mm and wider – Part 2: Switches and crossings and comparable alignment design situations with abrupt changes of curvature



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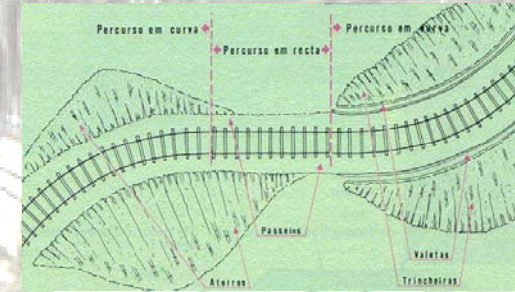


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Under development

prEN 13803 REVIEW

Railway applications – Track – Track alignment design parameters – Track gauges 1435 mm and wider

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WG 16 Sleepers and bearers



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WG 16 “Sleepers and bearers”

Scope: Concrete, wood and steel sleepers.

Convenor: Mr. Pouligny, P. (FR)

Secretary: Mr. Petit, C. (FR)

Published standards: 6

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Railway applications / Infrastructure



Published standards

**EN 13145:2001
+A1:2011**

Railway applications – Track – Wood sleepers and bearers

EN 13230-1:2009

Railway applications – Track – Concrete sleepers and bearers – Part 1: General requirements

EN 13230-2:2009

Railway applications – Track – Concrete sleepers and bearers – Part 2: Prestressed monoblock sleepers

EN 13230-3:2009

Railway applications – Track – Concrete sleepers and bearers – Part 3: Twin-block reinforced sleepers

EN 13230-4:2009

Railway applications – Track – Concrete sleepers and bearers – Part 4: Prestressed bearers for switches and crossings

EN 13230-5:2009

Railway applications – Track – Concrete sleepers and bearers – Part 5: Special elements



CEN/TC 256/SC 1

Railway applications / Infrastructure

Under development



prEN 13230-1 REVIEW (WI 00256402)	Railway applications – Track – Concrete sleepers and bearers – Part 1: General requirements
prEN 13230-2 REVIEW (WI 00256405)	Railway applications – Track – Concrete sleepers and bearers – Part 2: Prestressed monoblock sleepers
prEN 13230-3 REVIEW (WI 00256407)	Railway applications – Track – Concrete sleepers and bearers – Part 3: Twin-block reinforced sleepers
prEN 13230-4 REVIEW (WI 00256408)	Railway applications – Track – Concrete sleepers and bearers – Part 4: Prestressed bearers for switches and crossings
prEN 13230-5 REVIEW (WI 00256410)	Railway applications – Track – Concrete sleepers and bearers – Part 5: Special elements



CEN/TC 256/SC 1

Railway applications / Infrastructure



Under development

prEN 13230-6
(WI 00256328)

Railway applications – Track – Concrete sleepers and bearers – Part 6: Design

prEN 16431
(WI 00256598)

Railway applications – Track – Hollow sleepers and bearers

(WI 00256597)

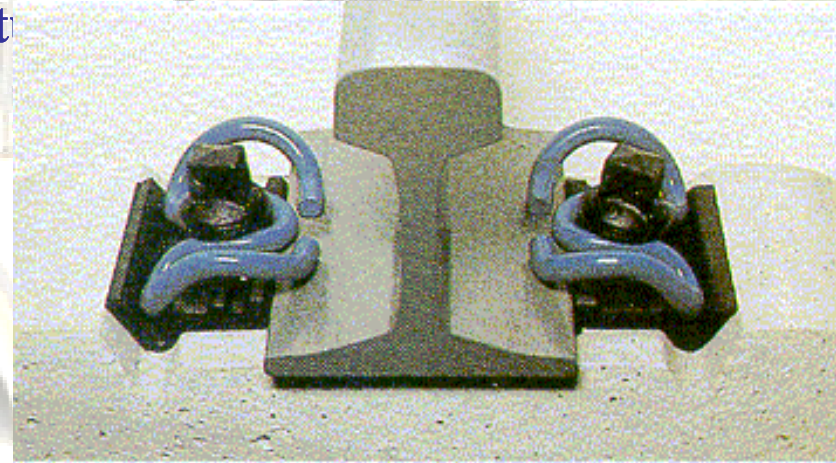
Railway applications – Track – Concrete sleepers and bearers with under sleeper pads

Railway applications – Track – Under ballast mats

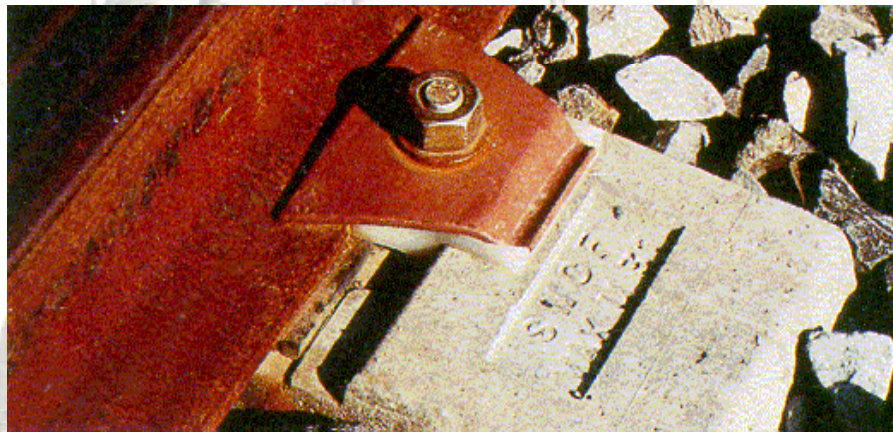


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WG 17 Fastening systems



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Railway applications / Infrastructure

WG 17 “Fastening systems”

Scope: Test methods and performance requirements for fastenings for concrete, wood and steel sleepers, for slab track, for vibration attenuation, for switches, crossings, guard and check rails.

Convenor: Dr. Rhodes, D. (UK)

Secretary: Mr. Buekett, J. (UK)

Published standards: 17



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Railway applications / Infrastructure

Published standards

EN 13146-1:2012	Railway applications – Track – Test methods for fastening systems – Part 1: Determination of longitudinal rail restraint
EN 13146-2:2012	Railway applications – Track – Test methods for fastening systems – Part 2: Determination of torsional resistance
EN 13146-3:2012	Railway applications – Track – Test methods for fastening systems – Part 3: Determination of attenuation of impact loads
EN 13146-4:2012	Railway applications – Track – Test methods for fastening systems – Part 4: Effect of repeated loading
EN 13146-5:2012	Railway applications – Track – Test methods for fastening systems – Part 5: Determination of electrical resistance
EN 13146-6:2012	Railway applications – Track – Test methods for fastening systems – Part 6: Effect of severe environmental conditions
EN 13146-7:2012	Railway applications – Track – Test methods for fastening systems – Part 7: Determination of clamping force
EN 13146-8:2012	Railway applications – Track – Test methods for fastening systems – Part 8: In service testing
EN 13146-9:2009 +A1:2011	Railway applications – Track – Test methods for fastening systems – Part 9: Determination of stiffness



CEN/TC 256/SC 1

Railway applications / Infrastructure

Under development

EN 13481-1	Railway applications – Track – Performance requirements for fastening systems – Part 1: Definitions
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 with rail on the surface or rail embedded in a channel
EN 13481-7	Railway applications – Track – Performance requirements for fastening systems – Part 7: Special fastening systems for switches and crossings and check rails

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WG 18 Switches and crossings



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WG 18 “Switches and crossings”

Scope: Special definitions, design and tolerances of switches and crossings.

Convenor: Mr. Foan, A. (UK)

Secretary: Mr. Apps, J. (UK)

Published standards: 10

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Published standards

EN 13232-1:2003	Railway applications – Track – Switches and crossings – Part 1: Definitions
EN 13232-2:2003 +A1:2011	Railway applications – Track – Switches and crossings – Part 2: Requirements for geometric design
EN 13232-3:2003 +A1:2011	Railway applications – Track – Switches and crossings – Part 3: Requirements for wheel/rail interaction
EN 13232-4:2005 +A1:2011	Railway applications – Track – Switches and crossings – Part 4: Actuation, locking and detection
EN 13232-5:2005 +A1:2011	Railway applications – Track – Switches and crossings – Part 5: Switches
EN 13232-6:2005 +A1:2011	Railway applications – Track – Switches and crossings – Part 6: Fixed common and obtuse crossings
EN 13232-7:2006 +A1:2011	Railway applications – Track – Switches and crossings – Part 7: Crossings with moveable parts
EN 13232-8:2007 +A1:2011	Railway applications – Track – Switches and crossings – Part 8: Expansion devices
EN 13232-9:2006 +A1:2011	Railway applications – Track – Switches and crossings – Part 9: Layouts



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EN 15689:2009

Railway applications – Track – Switches and crossings – Crossing components made of cast austenitic manganese steel

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Railway applications / Infrastructure



Under development

prEN 13232-1 REVIEW	Railway applications – Track – Switches and crossings for Vignole rails – Part 1: Definitions
prEN 13232-2 REVIEW	Railway applications – Track – Switches and crossings for Vignole rails – Part 2: Requirements for geometric design
prEN 13232-3 REVIEW	Railway applications – Track – Switches and crossings for Vignole rails – Part 3: Requirements for wheel/rail interaction
prEN 13232-4 REVIEW	Railway applications – Track – Switches and crossings for Vignole rails – Part 4: Actuation, locking and detection

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prEN 13232-5 REVIEW

Railway applications – Track – Switches and crossings for Vignole rails – Part 5: Switches

prEN 13232-6 REVIEW

Railway applications – Track – Switches and crossings for Vignole rails – Part 6: Fixed common and obtuse crossings

prEN 13232-7 REVIEW

Railway applications – Track – Switches and crossings for Vignole rails – Part 7: Crossings with moveable parts

prEN 13232-8 REVIEW

Railway applications – Track – Switches and crossings for Vignole rails – Part 8: Expansion devices

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Railway applications / Infrastructure



prEN 13232-9 REVIEW

Railway applications – Track – Switches and crossings for Vignole rails – Part 9: Layouts

Railway applications – Track – Mechanical requirements for joints in running rails

(WI 00256602)

Railway applications – Track – Switches and crossings – Mechanical requirements for actuation, locking and detection systems

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WG 21 Acceptance of track work after renewal and maintenance



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Railway applications / Infrastructure



WG 21 “Acceptance of track work after renewal and maintenance”

Scope: Acceptance of trackwork after renewal and maintenance work in switches, crossings and plain track.

Convenor: Mr. Cruz, A. (PT)

Secretary: Mr. Correia, E. (PT)

Published standards: 3



CEN/TC 256/SC 1

Railway applications / Infrastructure



Published standards

EN 13231-1:2006	Railway applications – Track – Acceptance of works – Part 1: Works on ballasted track – Plain line
EN 13231-2:2006	Railway applications – Track – Acceptance of works – Part 2: Works on ballasted track – Switches and crossings
EN 13231-3:2011	Railway applications – Track – Acceptance of works – Part 3: Acceptance of reprofiling rails in track



CEN/TC 256/SC 1

Railway applications / Infrastructure

Under development



prEN 13231-1 REVIEW
(WI 00256533)

**Railway applications – Track – Acceptance of works
– Part 1: Works on ballasted track – Plain line,
switches and crossings**

prEN 13231-4
(WI 00256479)

**Railway applications – Track – Acceptance of works
–Part 4: Acceptance of reprofiling rails in switches
and crossings**

prEN 13231-5
(WI 00256604)

**Railway applications – Track – Acceptance of works
– Part 5: Applications of rail reprofiling in plain line,
switches, crossings and expansion devices**



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WG 28 Track geometry quality



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WG 28 “Track geometry quality”

Scope: To consider the two following subjects, characterization of the track geometry, and specification for measurement devices.

Convenor: Mr. Coudert, F. (FR)

Secretary: Mr. Vicol, T. (FR)

Published standards: 5

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Published standards

EN 13848-1:2003 +A1:2008	Railway applications – Track – Track geometry quality Part 1: Characterisation of track geometry
EN 13848-2:2006	Railway applications – Track – Track geometry quality Part 2: Measuring systems – Track recording vehicles
EN 13848-3:2009	Railway applications – Track – Track geometry quality Part 3: Measuring systems – Track construction and maintenance machines
EN 13848-4:2011	Railway applications – Track – Track geometry quality Part 4: Measuring systems – Manual and lightweight devices
EN 13848-5:2008 + A1:2010	Railway applications – Track – Track geometry quality Part 5: Geometric quality levels – Plain line



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Under development

prEN 13848-5 REVIEW
(WI 00256614)

Railway applications – Track – Track geometry quality – Part 5: Geometric quality levels – Plain line

prEN 13848-6
(WI 00256611)

Railway applications – Track – Track geometry quality – Part 6: Characterisation of track geometry quality

(WI 00256613)

Railway applications – Track – Survey on track geometric quality



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WG 34 Qualification of railway trackwork contractors

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WG 34 “Qualification of railway trackwork contractors”

Scope: To establish a qualification system of construction and maintenance railway trackwork contractors.

Convenor: Mr. Petit, C. (FR)

Secretary: Mr. Maatjes, E. (NL)

Published standards: 1



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Published standard

EN 14969:2006

Railway applications – Track – Qualification system for railway trackwork contractors

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WG 39 Safety protection on the track during work

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WG 39 “Safety protection on the track during work”

Scope: To establish the supplementary prescriptions and competences required in order to minimize the risks on a railway work site, especially when trains are circulating on the adjacent track.

Convenor: Mr. H.L.G. van den TWEEL (NL)

Secretary: Mr. Carlebur, A. (NL)

Published standards: 0



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Railway applications / Infrastructure

Under development

(WI 00256399)	Railway applications – Track – Safety protection on the track during work – Part 1: Railway risks and common principles for protection of fixed and mobile work sites
(WI 00256403)	Railway applications – Track – Safety protection on the track during work – Part 2: Common solutions and technology – Technical requirements for Track Warning Systems (TWS)
(WI 00256404)	Railway applications – Track – Safety protection on the track during work – Part 3: Competences of personnel working near or on tracks
	Railway applications – Track – Safety protection on the track during work – Part 4: Safety barriers



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WG 40 Noise barriers



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Railway applications / Infrastructure



WG 40 “Noise barriers”

Scope: Noise barriers for railway applications.

Convenor: Prof. Garai, M. (IT)

Secretary: -

Published standards: 0

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Under development

<p>FprEN 16272-1 (WI 00256406)</p>	<p>Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Test method for determining the acoustic performance – Part 1: Intrinsic characteristics – Sound absorption in the laboratory under diffuse sound field conditions</p>
<p>FprEN 16272-2 (WI 00256438)</p>	<p>Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Test method for determining the acoustic performance – Part 2: Intrinsic characteristics – Airborne sound insulation in the laboratory under diffuse sound field conditions</p>
<p>FprEN 16272-3-1 (WI 00256409)</p>	<p>Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Test method for determining the acoustic performance – Part 3-1: Normalized railway noise spectrum and single number ratings for diffuse field applications</p>



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Railway applications / Infrastructure



prEN 16272-3-2
(WI 00256571)

Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Test method for determining the acoustic performance – Part 3-2: Normalized railway noise spectrum and single number ratings calculation for direct field applications

prEN 16272-4

Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Test method for determining the acoustic performance – Part 4: Intrinsic characteristics – In situ values of sound diffraction under direct sound field conditions



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Railway applications / Infrastructure



prCEN/TS 16272-5
(WI 00256572)

Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Test method for determining the acoustic performance – Part 5: Intrinsic characteristics – In situ values of sound reflection under direct sound field conditions

prEN 16272-6
(WI 00256569)

Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Test method for determining the acoustic performance – Part 6: Intrinsic characteristics – In situ values of airborne sound insulation under direct sound field conditions

CEN/prTS 16272-7

Railway applications – Noise barriers and related devices acting on airborne sound propagation – Test method for determining the acoustic performance – Part 7: Extrinsic characteristics – In situ values of insertion loss



CEN/TC 256/SC 1

Railway applications / Infrastructure



	Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Non-acoustic performance – Part 1: Mechanical performance under static loadings – Calculation and test methods
	Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Non-acoustic performance – Part 2-1: Mechanical performance under dynamic loadings caused by passing trains – Test methods
(WI 00256612)	Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Non-acoustic performance – Part 2-2: Mechanical performance under dynamic loadings caused by passing trains – Calculation method



CEN/TC 256/SC 1

Railway applications / Infrastructure



Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Non-acoustic performance – Part 3: General safety and environmental requirements

Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Procedures for assessing long term performance – Part 1: Acoustic characteristics

Railway applications – Track – Noise barriers and related devices acting on airborne sound propagation – Procedures for assessing long term performance – Part 2: Non-acoustic characteristics



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WG 46 Ballastless track



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CEN/TC 256/SC 1

Railway applications / Infrastructure

WG 46 “Ballastless track”

Scope: Ballastless track systems.

Convenor: Mr. Kleeberg. J. (DE)

Secretary: Mrs. Grams. H. (DE)

Published standards: 0

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Under development

prEN 16432-1
(WI 00256619)

**Railway applications – Ballastless track systems – Part 1:
General requirements**

prEN 16432-2

**Railway applications – Ballastless track systems – Part 2:
Subsystems and components**

prEN 16432-3

**Railway applications – Ballastless track systems – Part 3:
Acceptance**



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Railway applications / Infrastructure

Summary

Working Groups	EN's
WG 4 "Rails"	10
WG 5 "Track construction and maintenance machines"	6
WG 15 "Track alignment design parameters"	2
WG 16 "Sleepers and bearers"	6
WG 17 "Fastening systems"	17
WG 18 "Switches and crossings"	10



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Railway applications / Infrastructure

Summary

Working Groups	EN's
WG 21 "Acceptance of track work after renewal and/or maintenance work"	3
WG 28 "Track geometry quality"	5
WG 34 "Qualification of track works contractors"	1
WG 39 "Safety protection on the track during work"	0
WG 40 "Noise barriers"	0
WG 46 "Ballastless track"	0
Total	60



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60 Published standards

PRODUCTS

Rails:	05
Machines:	06
Sleepers:	06
Fastenings:	17
Switches:	10

44
73,3%

WORKS

Welding of rails:	05
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5
8,3%

SYSTEM

Track design:	02
Track quality:	05
Qualification:	01

8
13,3%

MAINTENANCE

Track acceptance:	03
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3
5%



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Railway applications / Infrastructure

41 New standards under drafting

PRODUTS

28
68,3%

Rails:	01
Machines:	04
Sleepers:	04
Switches:	02
Noise:	14
Ballastless track:	03

WORKS

2
4,9%

Welding of rails:	02
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SYSTEM

1
2,4%

Track Quality:	01
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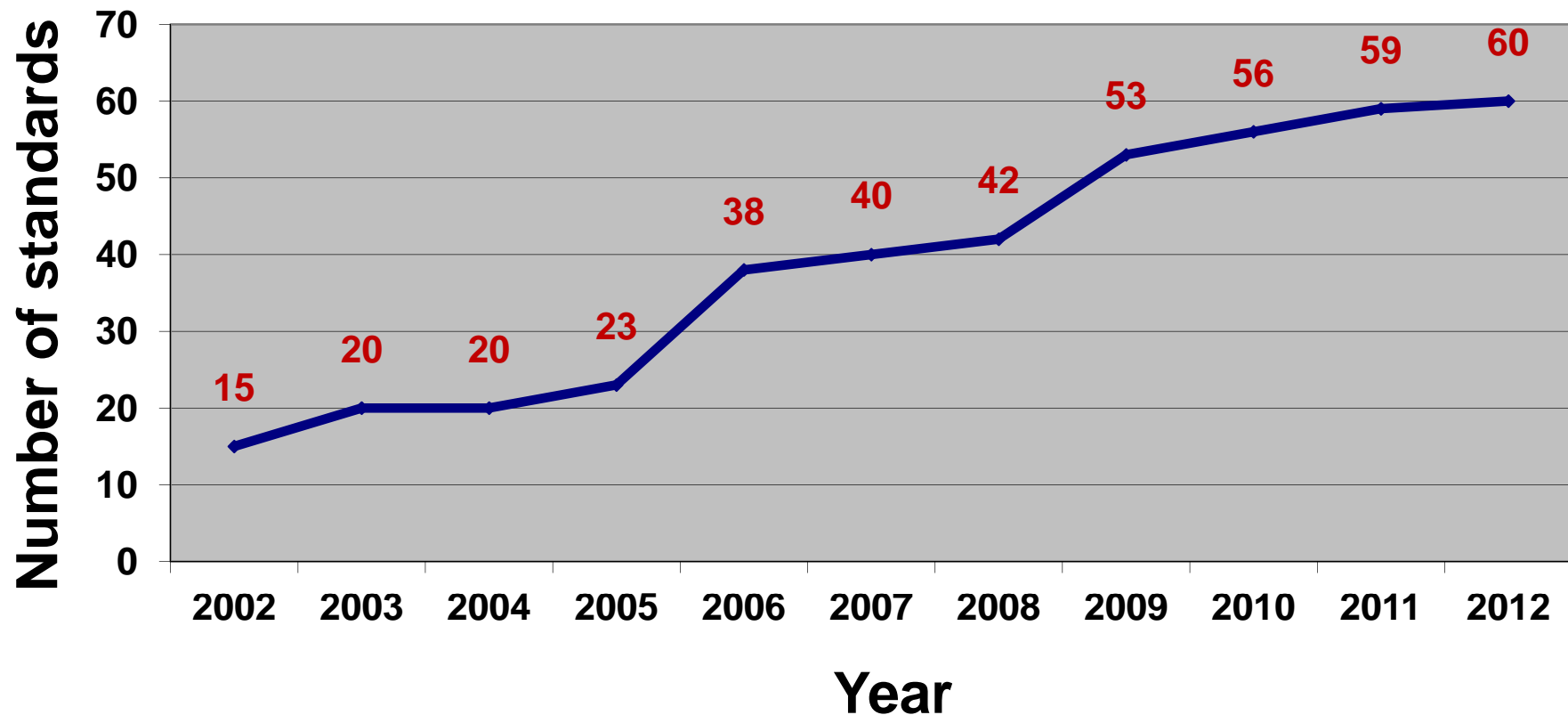
MAINTENANCE

10
24,4%

Track Quality:	01
Track Acceptance:	02
Restoration and repair of manganese crossings:	01
Ultrasonic rail tests:	01
Safety:	04



Evolution of published standards





CEN/TC 256/SC 1

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Summary

Some 73 Work Items are under progress in CEN/TC 256/SC 1.

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Thank you !

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