



BSI Standards Publication

Railway applications - Ballastless track systems

Part 2: System design, subsystems and components

National foreword

This British Standard is the UK implementation of EN 16432-2:2017. BSI, as a member of CEN, is obliged to publish EN 16432-2:2017 as a British Standard.

Attention is drawn to the fact that during the development of this European Standard, the UK committee identified several issues relevant to the UK implementation of the Standard.

It is the view of the UK committee that further clarity is necessary for designers and practitioners within the UK. The areas for clarification are:

- 1) This standard makes reference to a "Finite Element Method (FEM)" for analysis of ballastless track. FEM may be considered a generic term for validated numerical methods involving discretisation of the problem using shell, beam, brick or similar elements, and also incorporating the ground or substrate below, either explicitly using finite elements or using grounded springs with equivalent properties, so as to allow an appropriately accurate simulation of the track system structure together with its support medium. The emphasis here is that use of the most current, validated and industry-accepted numerical analysis methods is allowed according to this standard and such alternatives may represent the best, or acceptable, approaches for a specific project.
- 2) Regarding the use of the modulus of deformation (E_{v2}), there is no standardized methodology in the UK for determining this parameter from a static plate loading test. Reference can be made to other nations' Standards.
- 3) Recommendations concerning CEM I shall not be considered mandatory.
- 4) This standard makes reference to a track structure designed using the concept of a reinforced concrete road pavement, with reinforcement located at or near the neutral axis of the concrete section. Alternative design concepts may be considered, particularly where required for extended design life or other project requirements. These include reinforced concrete beams or slabs (continuous or otherwise) with reinforcement away from the neutral axis and designed using the concept of a reinforced concrete structure. These should follow guidance given in the relevant structures codes for reinforced concrete, covering aspects including exposure conditions, design life, reinforcement, concrete mix, cover to the reinforcement, maximum crack widths and other strength and durability requirements.

The UK participation in its preparation was entrusted to Technical Committee RAE/2, Railway Applications - Track. Membership of the subcommittee Ballastless Track included representation from: HS2, Network Rail, London Underground, UK Tram, Balfour Beatty, Amey, Rhomborg Sersa UK, Carillion, Beazley Sharp, Arup, Mott MacDonald, Schwihag, ERT, Pandrol, WSP, Tiflex and RSSB.

A list of organizations represented on this committee can be obtained on request to its secretary.

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© The British Standards Institution 2018
Published by BSI Standards Limited 2018

ISBN 978 0 580 99689 4

ICS 93.100

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2017.

Amendments/corrigenda issued since publication

Date	Text affected
31 January 2018	Missing pages added

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 16432-2

August 2017

ICS 93.100

English Version

**Railway applications - Ballastless track systems - Part 2:
System design, subsystems and components**

Applications ferroviaires - Systèmes de voies sans
ballast - Partie 2 : Conception du système, sous-
systèmes et composants

Bahnanwendungen - Feste Fahrbahn-Systeme - Teil 2:
Systementwurf, Untersysteme und Komponenten

This European Standard was approved by CEN on 28 May 2017.

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Contents

Page

European foreword.....	6
Introduction	7
1 Scope	8
2 Normative references	8
3 Terms and definitions	9
4 Symbols and abbreviations	10
5 General	15
5.1 Ballastless track system, subsystems and components	15
5.2 Subsystems configuration	16
5.2.1 Ballastless track system with continuous support and embedded rails	16
5.2.2 Ballastless track system with discrete rail seats	17
6 System design	18
6.1 Establishing the system criteria	18
6.2 System assurance plan	19
6.3 System integration	19
6.4 Vertical track stiffness	19
6.5 Track stability	19
6.6 Load distribution and load transfer by subsystems and components	20
6.6.1 Principles	20
6.6.2 Calculation steps	21
6.6.3 Determination of forces (rail seat loads) between subsystems fastening system and supporting structure (prefabricated element or pavement)	22
6.6.4 Prefabricated element loading and load distribution	22
6.6.5 Pavement design	23
6.7 Loading of substructure	25
6.8 Transitions	26
7 Rails	26
8 Rail fastening systems	26
8.1 General	26
8.2 Rail fastening spacing	26
8.3 Adjustment	26
9 Prefabricated elements	26
9.1 General	26
9.2 General design considerations	27
9.2.1 Data to be supplied for the general system design	27
9.2.2 Individual precast element design	27
9.3 Manufacturing process	27
9.3.1 General requirements	27
9.3.2 Curing	28
9.3.3 Surface finish	28
9.3.4 Marking	28
9.4 Quality control	28
9.4.1 General	28
9.4.2 Quality control during design approval tests	28

9.4.3	Quality control during manufacturing.....	29
9.5	Concrete sleepers, bearers and blocks	29
9.6	Prefabricated slabs and frames.....	29
9.6.1	Classification	29
9.6.2	Design	30
9.6.3	Materials	31
9.6.4	Geometrical tolerances.....	32
9.6.5	Storage, handling, transport and on-site installation	32
9.7	Filling layer	33
10	Pavements (layered structure).....	33
10.1	General	33
10.2	Concrete pavements	34
10.2.1	Application.....	34
10.2.2	Materials	34
10.2.3	Functional requirements	34
10.3	Asphalt pavements.....	37
10.3.1	Application.....	37
10.3.2	Design	37
10.3.3	Geometrical requirements.....	37
10.3.4	Asphalt materials and mix design	38
10.3.5	Materials for surface layer	38
10.3.6	Requirements for layers	38
10.4	Unbound, hydraulically bound and bituminous bound base-layers.....	38
10.4.1	Application.....	38
10.4.2	Hydraulically bound base layer.....	39
10.4.3	Cement treated base layer (CTB)	39
10.4.4	Concrete base layer.....	39
10.4.5	Bituminous base layer	40
10.4.6	Unbound base layer	40
11	Intermediate layers	41
11.1	Functions of intermediate layers.....	41
11.2	Effects of intermediate layers on ballastless track system	41
Annex A	(informative) Vertical vehicle load.....	43
A.1	Distribution of vertical railway traffic load and calculation of rail seat loads.....	43
A.1.1	General	43
A.1.2	Rail seat load P_0 [N]	43
A.1.3	Rail seat loads P_j [N] due to wheel loads Q_i [N].....	45
A.2	Rail bending moment and bending stress at the rail foot.....	46
A.2.1	Rail bending moment M_0 [Nmm]	46
A.2.2	Bending stress at the rail foot σ_0 [N/mm ²]	46
Annex B	(informative) Thickness design calculations for slabs, pavements, frames, beams.....	47
B.1	General	47
B.1.1	Introduction.....	47
B.1.2	Effective pavement thickness h_1 [mm].....	48
B.1.3	Bedding modulus k [N/mm ³].....	49

B.1.4	Bearing capacity of beam or slab/pavement supported by cementitious or bituminous base layer	52
B.1.5	Slab on Winkler foundation (Westergaard): Longitudinal and lateral bending moments as well as tensile stresses activated by rail seat loads.....	54
B.1.6	Beam on Winkler foundation (Zimmermann): Longitudinal bending moment and tensile stress due to rail seat loads.....	60
B.1.7	Critical longitudinal bending tensile stress.....	64
B.1.8	Critical lateral bending tensile stress.....	64
B.2	Stresses in concrete slab/pavement due to thermal impact.....	64
B.2.1	General.....	64
B.2.2	Constant stresses σ_c due to temperature changes ΔT acting in concrete slabs or pavements.....	65
B.2.3	Linear stresses σ_w due to temperature changes Δt acting in concrete slabs or pavements.....	67
B.3	Determination of maximum allowable flexural fatigue stress due to railway traffic load σ_Q	68
B.3.1	Maximum allowable tensile flexural stress in winter (longitudinal stresses)	68
B.3.2	Maximum allowable tensile flexural stress in summer (lateral and longitudinal stresses).....	68
Annex C (informative) Vertical loading.....		69
Annex D (informative) Examples of calculations.....		70
D.1	First example (variant II: unbonded multiple layers) and second example (variant III: bonded layers).....	70
D.2	Distribution of vertical railway traffic loading and calculation of rail seat loads.....	70
D.2.1	Rail seat load P_0 [N]	70
D.2.2	Rail seat loads P_j [N] due to wheel loads Q_i [N]	72
D.2.3	Rail bending moment and bending stress at the rail foot	79
D.3	First example (variant II: unbonded multiple layers).....	80
D.3.1	General.....	80
D.3.2	Bending moment due to rail seat loads.....	82
D.3.3	Stresses due to thermal impact.....	91
D.3.4	Determination of maximum allowable flexural fatigue stress due to vehicle load σ_Q	92
D.4	Second example (variant III: bonded multiple layers).....	93
D.4.1	General.....	93
D.4.2	Bending moment due to rail seat loads.....	95
D.4.3	Stresses due to thermal impact.....	107
D.4.4	Determination of maximum allowable flexural fatigue stress due to vehicle load σ_Q	108
Annex E (informative) Quality control – Routine tests and frequency of testing		109

E.1 General 109

E.2 Data of the slabs to be checked 109

E.3 Examples for frequency of testing 111

Annex F (informative) Example of ballastless track system design calculation and analysis
based on analytical tools 112

Annex ZA (informative) Relationship between this European Standard and the Essential
Requirements of EU Directive 2008/57/EC 113

Bibliography 115

European foreword

This document (EN 16432-2:2017) 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 February 2018, and conflicting national standards shall be withdrawn at the latest by February 2018.

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This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2008/57/EC.

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

This European Standard is one of the series EN 16432 “*Railway applications — Ballastless track systems*” as listed below:

- *Part 1: General requirements;*
- *Part 2: System design, subsystems and components;*
- *Part 3: Acceptance (in preparation).*

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