



NSAI
Standards

Standard Recommendation
S.R. CEN/TS 13979-2:2011

Railway applications - Wheelsets and bogies - Monobloc wheels - Technical approval procedure - Part 2: Cast wheels

S.R. CEN/TS 13979-2:2011

Incorporating amendments/corrigenda/National Annexes issued since publication:

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SWIFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:

This document is based on:
CEN/TS 13979-2:2011

Published:
23 September, 2011

This document was published under the authority of the NSAI and comes into effect on:
23 September, 2011

ICS number:

45.040

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ICS 45.040

English Version

Railway applications - Wheelsets and bogies - Monobloc wheels - Technical approval procedure - Part 2: Cast wheels

Applications ferroviaires - Essieux montés et bogies -
Roues monobloc - Procédure d'homologation technique -
Partie 2: Roues en acier moulé

Bahnanwendungen - Radsätze und Drehgestelle - Vollräder
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This Technical Specification (CEN/TS) was approved by CEN on 3 January 2011 for provisional application.

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Contents

Page

Foreword.....	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Parameters for the definition of the application covered.....	6
3.1 Parameters for geometric interchangeability	6
3.1.1 Functional requirements	6
3.1.2 Assembly requirements	7
3.1.3 Maintenance requirements	7
3.2 Parameters for thermomechanical assessment.....	7
3.3 Parameters for mechanical assessment	7
3.4 Parameters for acoustic assessment	8
4 Description of the wheel to be approved	8
5 Assessment of the geometric interchangeability.....	8
6 Assessment of the thermomechanical behaviour.....	8
6.1 General procedure	8
6.2 First stage – Braking bench test	9
6.2.1 Test procedure	9
6.2.2 Decision criteria	9
6.3 Second stage – Wheel fracture bench test	10
6.3.1 General.....	10
6.3.2 Test procedure	10
6.3.3 Decision criterion.....	10
6.4 Third stage – Field braking test.....	10
6.4.1 General.....	10
6.4.2 Test procedure	10
6.4.3 Decision criteria	10
7 Assessment of the mechanical behaviour.....	11
7.1 General procedure	11
7.2 First stage - Calculation	11
7.2.1 Applied forces	11
7.2.2 Calculation procedure	12
7.2.3 Preliminary assessment criterion	13
7.3 Second stage – Bench test	13
7.3.1 General.....	13
7.3.2 Definition of bench loading and of the test procedure	13
7.3.3 Decision criteria	13
8 Assessment of the acoustic behaviour	13
8.1 General procedure	13
8.2 Calculation procedure	14
8.3 Field measurements	14
8.4 Decision criteria	14
9 Technical approval documents	15
Annex A (normative) Assessment of the thermomechanical behaviour.....	16
A.1 Assessment flow chart.....	16
A.2 Braking bench test procedure.....	17

A.2.1	Principle of the test	17
A.2.2	Definition of braking	17
A.2.3	Method of measuring the decision criteria	17
A.2.4	Tests and measurements	18
A.2.5	Anomalies	19
A.3	Wheel fracture bench test procedure	19
A.3.1	Principle of the test	19
A.3.2	Definition of drag braking	19
A.3.3	Pre-cracking of the rim	20
A.3.4	Tests and measurements	20
A.3.5	Anomalies	21
A.4	Field braking test procedure	21
A.4.1	Principle of the test	21
A.4.2	Definition of braking	21
A.4.3	Method of measurement of the decision criteria	21
A.4.4	Tests and measurements	22
A.4.5	Anomalies	23
Annex B	(normative) Flow chart of the mechanical behaviour assessment	24
Annex C	(informative) Mechanical behaviour – Finite element code assessment	25
Annex D	(informative) Mechanical behaviour – Bench loading and test procedure	26
D.1	Principle of bench loading and test procedure	26
D.2	Definition of loading	27
D.2.1	General	27
D.2.2	Measurement of the stresses during field tests	27
D.3	Fatigue bench test	27
D.3.1	Method 1 – Random fatigue test	27
D.3.2	Method 2 – Single-stage fatigue test	29
Annex E	(informative) Assessment of the acoustic behaviour	31
E.1	Assessment flow chart	31
E.2	Calculation procedure	32
E.2.1	Preliminary comment	32
E.2.2	Calculation of the wheel modal basis	32
E.2.3	Selection of the reference track model	32
E.2.4	Definition of the calculation parameters	32
E.2.5	Power calculation	32
E.2.6	Insertion	33
E.2.7	Calculations of the decision criteria for acoustic technical approval of the wheel	34
E.2.8	Optional calculations	34
E.3	Field measurement procedure	34
E.3.1	Objective and preliminary remark	34
E.3.2	Recommendations for the operating conditions	35
E.3.3	Measurement procedure	38
E.3.4	Analysis of results	40
Annex F	(informative) Drag braking values for interoperability	44
Bibliography	45

Foreword

This document (CEN/TS 13979-2:2011) has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN.

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This document has been prepared as part of a mandate given to CEN by the European Commission and the European Free Trade Association and provides support for the main requirements of EU Directive 2008/57/CE.

This European Standard is part of a series *Railway applications — Wheelsets and bogies — Monobloc wheels — Technical approval procedure* which consists of the following parts:

- *Part 1: Forged and rolled wheels;*
- *Part 2: Cast wheels.*

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Introduction

Part 1 of this series applies to monobloc wheels manufactured by forging and rolling. This process was the only authorized process accepted in the UIC regulations that were applicable in the recent past in most of the European countries.

Cast wheels are commonly used by AAR networks and have been introduced into Europe on some applications for freight wagons. This standard defines the specified requirements linked to the casting process for the technical approval of a monobloc wheel. It follows the same methodology as Part 1.

As this standard applies only to freight wagons and supports European interoperability, this standard defines in the informative Annex F the specific parameters for the thermomechanical assessment of a freight wagon wheel designed for European interoperability.

The standard describes how to assess the wheel design. To be able to apply the specifications, it is essential to define the use of the wheel; this standard also states how to define this use.

At least four aspects are described with different purposes:

- a geometric aspect: to allow interchangeability of different solutions for the same application;
- a thermomechanical aspect: to manage wheel deformations and to ensure that braking will not cause wheels to break;
- a mechanical aspect: to ensure that no fatigue cracks occur in the web;
- an acoustic aspect: to ensure that the solution chosen is as good as the reference wheel, for the use in question.

For each of these three latter aspects, the rules proposed tend to limit the procedure; thus, the easier the objectives are to attain by the wheel under study.

This Technical Specification does not cover assessment of the hub nor of the static mechanical dimensioning of the wheel.

The main content of this standard is derived from Part 1. The only technical differences are linked to the needs of the cast process for the product.

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