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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Údarás um Chaighdeáin Náisiúnta na hÉireann

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

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN/TS 13979-2

September 2011

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 - Technische Zulassungsverfahren - Teil 2: Gussräder

This Technical Specification (CEN/TS) was approved by CEN on 3 January 2011 for provisional application.

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Ref. No. CEN/TS 13979-2:2011: E

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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.