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Standards

Irish Standard  
I.S. EN 15827:2011

# Railway applications - Requirements for bogies and running gears

## I.S. EN 15827:2011

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## Railway applications - Requirements for bogies and running gears

Applications ferroviaires - Exigences pour bogies et organes de roulement

Bahnanwendungen - Anforderungen für Drehgestelle und Fahrwerke

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## **Foreword**

This document (EN 15827:2011) 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of an identical text or by endorsement, at the latest by September 2011, and conflicting national standards shall be withdrawn at the latest by September 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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 2008/57/EC, see informative Annex ZA, which is an integral part of this document.

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

## Introduction

The objective of this European Standard is to bring all the separate requirements related to the design and validation of bogies and running gear into one document. Since bogies and running gear are frequently produced by a different organisation to that responsible for the overall rail vehicle it starts by identifying the essential information needed to produce the required design.

The performance requirements for bogies and running gear fall into two related areas, covering functionality and safety, as required by TSI Essential requirements. Functionality relates to such things as speed, load capacity, ride quality and operating life. Safety covers gauging, structural integrity, dynamic performance, resistance to derailment and maintenance, etc.

Taking the requirements as a whole they involve three particular areas of expertise and discipline. Since each of these areas form a different part of the engineering process they have been addressed individually in the following main clauses of this standard, namely:

- structural requirements; Clause 6;
- dynamic requirements; Clause 7;
- maintenance requirements; Clause 11.

These clauses provide details of how the overall objectives are to be achieved in these important specific areas. This document structure is typical of the engineering process for the design, validation and maintenance support of bogies.

A bogie or running gear designed and validated in accordance with this standard will satisfy the Essential Requirements of the rolling stock TSIs.

## 1 Scope

This European Standard consolidates all the separate requirements specified in rolling stock TSIs and European Standards relating to bogies and running gear together into an overall requirement and process that ensures a functional and safe design is achieved for a defined operating envelope.

There are many European Standards that specify the design requirements and associated processes of bogie and running gear components and sub-assemblies. There are also European standards that specify vehicle performance and validation requirements that depend directly on the bogies or running gear. The objective of this standard is to bring all these separate design criteria together. This is accomplished by specifying the design and validation processes to be used for bogies and running gear with particular focus on the two key disciplines of dynamic behaviour and structural integrity. To ensure that safe operation can be continued throughout the product life the definition of a maintenance plan is also required.

This European Standard is applicable to bogies and running gear intended for vehicles that will operate under the Interoperability Directives on designated TEN routes. The requirements, however, can be used in other applications at the discretion of the interested parties. It specifies the requirements to achieve a satisfactory design of bogie or running gear and to validate the design against the relevant performance and safety criteria. Technical requirements are specified directly or by making reference to the relevant European standards and include the nature and content of an auditable record that should be produced of the design and validation processes.

The requirements address only the design and validation of bogies and running gear. No requirements are set for other systems components that are attached to the bogies or running gear, except to establish that a satisfactory interface has been provided.

**NOTE** Specifications that relate to bogies and running gear can only be considered in the context of a specific vehicle application. Therefore the performance, both safety and otherwise, can relate only to the bogies and running gear as part of a vehicle configuration and not to the individual elements of the bogies or running gear.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 473, *Non-destructive testing — Qualification and certification of NDT personnel — General principles*

EN 12080, *Railway applications — Axleboxes — Rolling bearings*

EN 12081, *Railway applications — Axleboxes — Lubricating greases*

EN 12082, *Railway applications — Axleboxes — Performance testing*

EN 12299, *Railway applications — Ride comfort for passengers — Measurement and evaluation*

EN 12663-1, *Railway applications — Structural requirements of railway vehicle bodies — Part 1: Locomotives and passenger rolling stock (and alternative methods for freight wagons)*

EN 12663-2, *Railway applications — Structural requirements of railway vehicle bodies — Part 2: Freight wagons*

EN 13103, *Railway applications — Wheelsets and bogies — Powered axles — Design method*

EN 13104, *Railway applications — Wheelsets and bogies — Non-powered axles — Design method*

EN 13260, *Railway applications — Wheelsets and bogies — Wheelsets — Products requirements*



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