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Railway applications - Braking - Wheel slide protection

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This standard includes the English version of the European Standard.

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Railway applications - Braking - Wheel slide protection

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This European Standard was approved by CEN on 3 August 2018 and includes the Corrigendum issued by CEN on 17 February 2021 and Amendment 1 approved by CEN on 23 July 2023.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 15595:2018+A1:2023) 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of an identical text or by endorsement, at the latest by April 2024, and conflicting national standards shall be withdrawn at the latest by April 2024.

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

This document supersedes [A1] EN 15595:2018 and EN 15595:2018/AC:2021 [/A1].

This document includes the corrigendum EN 15595:2018/AC:2021 which corrects the wording of the 1st sentence of 8.3.3.3.1, the 2nd sentence of 8.3.3.3.2 and the 2nd sentence of 8.3.3.3.3.

The start and finish of text introduced or altered by corrigendum is indicated in the text by tags [AC] [/AC].

This document includes Amendment 1 approved by CEN on 23 July 2023.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [/A1].

[A1] *deleted text* [/A1]

The rationale behind the changes between Revision 1 and this Revision of this standard is given in Annex H.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Introduction

A Wheel Slide Protection (WSP) system is designed to make the best use of available adhesion and to improve adhesion by a controlled reduction and restoration of the brake force to prevent wheel sets from locking and uncontrolled sliding due to low adhesion. Thus the braking performance is optimized and the occurrence of wheelset damage is minimized.

The Wheel Rotation Monitoring (WRM) system is designed to detect locked wheels and to give immediate information in this case.

Trains fitted with WSP systems may consist of single vehicles, locomotive and trailing vehicles or may be high speed trains, multiple units, commuter trains, Light Rail Vehicles (LRV) and Tram Trains of any track gauge, etc.

Such trains will be equipped with friction brakes and may also be equipped with additional braking systems, e.g. dynamic brakes, wheel/rail adhesion independent brakes, and may also be fitted with adhesion improving systems, e.g. sanding.

This European Standard is not intended to be used to determine the stopping performance of a WSP equipped train under all environmental conditions.

1 Scope

This document specifies the criteria for system acceptance and type approval of a wheel slide protection (WSP) system. It also specifies criteria for the implementation of WSP to specific vehicle applications and specific operating conditions, as well as requirements for wheel rotation monitoring (WRM). This includes the design, testing and quality assessment of the WSP and WRM systems and their components.

This European Standard does not apply to vehicles on rubber tyred wheels or vehicles equipped with hydraulic brakes.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 14478:2017, *Railway applications — Braking — Generic vocabulary*

EN 15663, *Railway applications — Vehicle reference masses*

〚A1〛 EN 16834:2019, *Railway applications — Braking — Brake performance* 〚A1〛

EN 45545 (all parts), *Railway applications — Fire protection on railway vehicles*

EN 50121-3-2, *Railway applications — Electromagnetic compatibility — Part 3-2: Rolling stock — Apparatus*

EN 50125-1, *Railway applications — Environmental conditions for equipment — Part 1: Rolling stock and on-board equipment*

EN 50126-1, *Railway Applications — The Specification and Demonstration of Reliability, Availability, Maintainability and Safety (RAMS) — Part 1: Generic RAMS Process*

EN 50128, *Railway applications — Communication, signalling and processing systems — Software for railway control and protection systems*

EN 50129, *Railway applications — Communication, signalling and processing systems — Safety related electronic systems for signalling*

EN 50155, *Railway applications — Rolling stock — Electronic equipment*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN 61373, *Railway applications — Rolling stock equipment — Shock and vibration tests (IEC 61373)*

EN ISO 228-2, *Pipe threads where pressure-tight joints are not made on the threads — Part 2: Verification by means of limit gauges (ISO 228-2)*

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025)*

ISO 8573-1, *Compressed air — Part 1: Contaminants and purity classes*