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Railway applications - Aerodynamics - Part 6: Requirements and test procedures for cross wind assessment

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Bahnanwendungen - Aerodynamik - Teil 6: Anforderungen und Prüfverfahren zur Bewertung von Seitenwind

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European foreword

This document (EN 14067-6:2018+A1:2022) 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of an identical text or by endorsement, at the latest by January 2023, and conflicting national standards shall be withdrawn at the latest by January 2023.

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 includes Amendment 1 approved by CEN on 6 June 2022.

This document supersedes A1 EN 14067-6:2018 A1.

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

This European Standard is part of the series “Railway applications — Aerodynamics” which consists of the following parts:

— *Part 1: Symbols and units*;

— *Part 3: Aerodynamics in tunnels*;

— *Part 4: Requirements and test procedures for aerodynamics on open track*;

— *Part 5: Requirements and test procedures for aerodynamics in tunnels*;

— *Part 6: Requirements and test procedures for cross wind assessment*.

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 organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Trains running on open track are exposed to cross winds. The cross wind safety of railway operations depends on vehicle and infrastructure characteristics and operational conditions. Important parameters are:

— aerodynamic characteristics of the vehicle;

— vehicle dynamics (e.g. mass, suspension, bump stops);

— track gauge;

— line characteristics (radius and cant of the track, height of embankments and bridges, walls near the track);

— wind exposure of the line;

— operating speed, mode of operation (non-tilting, tilting, running direction).

1 Scope

This document gives guidelines for the cross wind assessment of railways.
This document is applicable to all passenger vehicles, locomotives and power cars (with a maximum train speed above 140 km/h up to 360 km/h) and freight wagons (with a maximum train speed above 80 km/h up to 160 km/h) and track gauges from 1 435 mm to 1 668 mm inclusive. For passenger vehicles, locomotives and power cars with a maximum train speed between 250 km/h and 360 km/h, a requirement to demonstrate the cross wind stability is imposed. This document is not applicable to light rail and urban rail vehicles.

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 14067-4, *Railway applications – Aerodynamics – Part 4: Requirements and test procedures for aerodynamics on open track*

EN 14363, *Railway applications - Testing and Simulation for the acceptance of running characteristics of railway vehicles - Running Behaviour and stationary tests*

EN 15663, *Railway applications - Vehicle reference masses*