

TECHNICAL REPORT

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## Railway applications - Environmental conditions - Design guidance for rolling stock

Applications ferroviaires - Conditions d'environnement  
- Lignes directrices pour la conception du matériel  
roulant

Bahnanwendungen - Umweltbedingungen -  
Konstruktionsempfehlungen für Schienenfahrzeuge

This Technical Report was approved by CEN on 15 January 2015. It has been drawn up by the Technical Committee CEN/TC 256.

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## European foreword

This document (CEN/TR 16251:2016) has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN.

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## Introduction

In this Technical Report, environmental conditions are related to climate and big animals. Separately and in combination environmental conditions can represent considerable challenges to the railway sector as availability, economy, reputation and safety can be severely affected. Both severe summer and winter conditions occur, and more intense weather is predicted for the future.

The intention of this Technical Report is to help reduce technical risks related to environmental conditions.

All tests of the different clauses in this Technical Report can be performed either in a climate chamber or on track, if the corresponding test conditions are given.

## 1 Scope

This Technical Report gives guidance for designing rolling stock for its specified ranges of environmental conditions according to EN 50125-1. This guidance covers environmental conditions in Europe.

The relevant clauses for the particular vehicle should be chosen and described in the vehicle specification. Depending on the ranges selected, design and/or testing provisions described in this Technical Report should be taken into account. This Technical Report is a collection of existing test descriptions and design guidance based on long lasting experience of operators, test centres and industry.

## 2 Normative references

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

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

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1 environmental conditions

physical, chemical or biological conditions external to a product to which it is subject at a certain time

[SOURCE: EN 50125-1]

### 3.2 winter conditions

conditions with temperatures below freezing point of water, where snow and ice can accumulate on the vehicle

### 3.3 summer conditions

conditions with temperatures above 35 °C in addition to intensive solar radiation and hot ballast effect