BS EN 15518-3:2023

BSI Standards Publication

Winter maintenance equipment — Road weather information systems

Part 3: Requirements on measured values of stationary equipment

bsi.

National foreword

This British Standard is the UK implementation of EN 15518-3:2023. It supersedes BS EN 15518-3:2011, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/513, Construction equipment and plant and site safety.

A list of organizations represented on this committee can be obtained on request to its committee manager.

Contractual and legal considerations

Published by BSI Standards Limited 2023

ISBN 978 0 539 19312 1

ICS 07.060; 13.030.40; 35.240.99

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 November 2023.

Amendments/corrigenda issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 15518-3

November 2023

ICS 07.060; 13.030.40; 35.240.99

Supersedes EN 15518-3:2011

English Version

Winter maintenance equipment - Road weather information systems - Part 3: Requirements on measured values of stationary equipment

Matériels de viabilité hivernale - Systèmes d'information météorologique routière - Partie 3 : Exigences relatives aux valeurs mesurées par des matériels fixes

Winterdienstausrüstung - Straßenzustands- und Wetterinformationssysteme - Teil 3: Anforderungen an gemessene Werte der stationären Anlagen

This European Standard was approved by CEN on 18 September 2023.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN 15518-3:2023 E

Contents

Page

European foreword

This document (EN 15518-3:2023) has been prepared by Technical Committee CEN/TC 337 “Road operation equipment and products”, the secretariat of which is held by AFNOR.

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 May 2024, and conflicting national standards shall be withdrawn at the latest by May 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 EN 15518-3:2011.

EN 15518-3:2023 includes the following significant technical changes with respect to EN 15518-3:2011:

— added definition and requirements for:

  — freezing temperature;

  — ice;

  — hoar frost;

  — ice film thickness;

  — snow layer thickness;

— differentiation between embedded and remote (non-invasive) road sensors and specific requirements for:

  — road surface temperature;

  — road surface condition;

  — water film thickness;

  — ice film thickness (only for remote sensors);

  — snow layer thickness (only for remote sensors);

— adaptation of the definition and differentiation between active and passive measurement methods in the requirements for freezing temperature;

— added requirements for:

  — amount of de-icing agent;

  — amount of precipitation;

— adaption of requirements for:

  — road body temperature;

- air temperature;
- relative humidity;
- precipitation intensity;

— removed requirements for snow height (on and next to the road).

EN 15518, *Winter maintenance equipment — Road weather information systems*, is currently composed with the following parts:

— *Part 1: Global definitions and components*;

— *Part 2: Road weather — Recommended observation and forecast*;

— *Part 3: Requirements on measured values of stationary equipment*;

— *Part 4 (CEN/TS): Test methods for stationary equipment*.

A list of all parts in a series can be found on the CEN website: https://www.cencenelec.eu/.

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

Road Weather Information Systems (RWIS) are complex structures used for road maintenance decision support, which feature as a rule the following components: meteorological sensors and instruments, road condition sensors (embedded or remote), transmission technology, computer systems for processing, representation and storing of information, road weather forecasts and alarms, in relation to traffic control and traffic information systems and more.

A stationary road weather station performs the acquisition of road and meteorological information at a fixed location.

This document lays down the requirements for the recommended sensor components of a road weather station of a Road Weather Information System (RWIS). In the description of requirements, a distinction is made between the sensor components forming a basis road weather station for winter use and the recommended complementary optional sensor components.

Parameters which are not in the standard but offered on the market could be useful but are left out of this minimum standard due to the fact that there are currently no professional methods available to verify these parameters.

The aim is to ensure extensive combination and interchangeability within the systems.

With a set terminology for the components and the meteorological expressions an attempt is made to counteract a diversity of terms and designations for identical phenomena.

1 Scope

This document specifies the terminology and performance requirements for all sensor components of stationary equipment within a Road Weather Information System (RWIS).

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 15144, *Winter maintenance equipment — Terminology — Terms for winter maintenance*

CEN/TS 15518-4, *Winter maintenance equipment — Road weather information systems — Part 4: Test methods for stationary equipment*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15144 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

NOTE The following definitions have been established specifically for the RWIS domain.

3.1 Road parameters

3.1.1
pavement surface temperature
<remote measurements> effective radiation temperature of a pavement surface and the contaminant layer; <embedded measurements> conductive temperature on the pavement surface

3.1.2
road body temperature
temperature of the road in a specific depth in the construction layers

3.1.3
amount of de-icing agent
mass of de-icing agent on a road surface per square metre

3.1.4
freezing temperature
temperature at which a liquid begins to freeze on a road surface

Note 1 to entry: The requirement specifications for freeze temperature in this document are valid under well-known and reproducible laboratory environment conditions. The real environment condition on a road under traffic result in high variations due to the highly variable distribution of water film and de-icing agent concentration over the pavement surface and a lot of other influences like traffic, solar radiation, surface slope, etc.

3.1.5
road surface condition
qualification of the status of road surface affected by road weather phenomenon