SLOVENSKI STANDARD
SIST EN 15518-3:2011

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Oprema za zimska vzdrževalna dela - Cestni vremensko-informacijski sistemi - 3. del: Zahteve za merjene vrednosti pri stacionarni opremi

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

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

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

Ta slovenski standard je istoveten z: **EN 15518-3:2011**

ICS:

07.060	Geologija. Meteorologija. Hidrologija	Geology. Meteorology. Hydrology
13.030.40	Naprave in oprema za odstranjevanje in obdelavo odpadkov	Installations and equipment for waste disposal and treatment
35.240.99	Uporabniške rešitve IT na drugih področjih	IT applications in other fields

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English Version

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Foreword

This document (EN 15518-3:2011) has been prepared by Technical Committee CEN/TC 337 “Winter maintenance and road service area maintenance equipment”, 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of an identical text or by endorsement, at the latest by August 2011, and conflicting national standards shall be withdrawn at the latest by August 2011.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.

EN 15518, *Winter maintenance equipment — Road weather information systems*, comprises of 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 equipments*

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 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, 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.

Stationary equipment performs the acquisition of road and meteorological information at a fixed location.

This part of EN 15518 lays down the requirements for the recommended components of a stationary equipment of a RWIS. In the description of requirements a distinction is made between the components forming a basis stationary equipment for winter use and the recommended complementary components.

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 European Standard specifies the terminology and performance requirements for all components of stationary equipment within a Road Weather Information Systems (RWIS).

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 15144:2007, *Winter maintenance equipment — Terminology — Terms for winter maintenance*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15144:2007 and the following apply.

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

3.1
surface

3.1.1
pavement surface temperature
effective radiation temperature of a pavement surface

3.1.2
road surface condition
qualification of the status of road surface affected by road weather phenomenon

3.1.3
water film thickness
mean thickness of the film of water present on a flat surface

3.2
aerial

3.2.1
relative humidity
filling rate of the mass of air with water vapour

NOTE It is determined in relation to water, in liquid phase, and recorded under a screen at a height between 1,5 m and 4,0 m from the ground.

3.2.2
precipitation
exclusion of falling water from the atmosphere in liquid and/or solid form which can be observed and measured on ground

3.2.3
rain
precipitation in liquid form

3.2.4
depth of precipitation
thickness of the layer of water obtained by precipitation or deposit on a horizontal surface if the precipitations falling in solid form were to melt

3.2.5
depth of snow
raw thickness of snow deposited on the ground

3.2.6
intensity of precipitation
depth of precipitations collected per unit of time

3.2.7
wind speed (instantaneous and mean wind)
ratio of the distance travelled by the air, per unit of time

3.2.8
gust of wind
brief, sudden increase in the speed of the wind in relation to its mean value

3.2.9
wind direction (instantaneous and mean wind)
direction from where the wind is blowing with respect to the magnetic north

3.2.10
visibility
distance defined by the meteorological optical range

3.2.11
total radiation
solar radiation received by a horizontal surface from the galactic centre, directed towards the ground, within a spectral range from 0,3 µm to 3 µm

3.2.12
atmospheric radiation
high wavelength infrared radiation emitted by the atmosphere, within a spectral range from 4 µm to 100 µm

3.2.13
total cloud cover
fraction of the galactic centre hidden by all of the visible clouds

NOTE It is defined by the International Meteorological Code 2 700. It is expressed in octa corresponding to the eighth of the galactic centre occupied by the clouds.

3.3
general

3.3.1
screen
shelter built in such a manner that it protects its contents against solar radiation, precipitations and condensation and contributes at the same time to ventilation

3.3.2
sampling interval
time between two readings meant for the elaboration of a value

3.3.3
measurement interval
time between two elaborated values

3.3.4
polling interval
time between two transmissions of elaborated values

4 Requirements

The requirements hereafter apply to sensors in road conditions. However, the accuracy requirements are meant for laboratory testing. Sensor set-up, calibration and special handling shall be specified by the manufacturer.

The first column of Table 1 hereafter states “B” for parameters recommended in a basic configuration, and “O” for parameters considered as optional according to specific applications.

a) Thermal resistance

1) sensors embedded in the pavement need to survive surface temperatures from – 40 °C to + 70 °C;

2) equipment placed in the air need to survive air temperatures from – 40 °C to + 60 °C.

b) Chemical resistance

All components of the road and weather information system installed on the pavement shall be resistant to the thawing agents and fuels to which roads are normally exposed.

c) Mechanical resistance

Sensors and other components embedded in the pavement shall withstand regular mechanical loads exerted by traffic, including rollovers by snow-clearing machines.

d) Electro-magnetic resistance

All components of the road and weather information system shall not be affected by conventional environing electro-magnetic conditions.

The equipment defined under this standard shall be considered as “Industrial equipment”.