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English Version

Winter service equipment and products - De-icing agents - Part 3: Other solid and liquid de-icing agents - Requirements and test methods

Équipements de viabilité hivernale - Agents de dégivrage - Partie 3: Autres agents de dégivrage solides et liquides - Exigences et méthodes d'essai

Winterdienstausrüstung und Produkte - Enteisungsmittel - Teil 3: Andere feste und flüssige Enteisungsmittel - Anforderungen und Prüfverfahren

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (CEN/TS 16811-3:2015) has been prepared by Technical Committee CEN/TC 337 “Road operation equipment and products”, the secretariat of which is held by AFNOR.

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Introduction

De-icing agents are important for the winter maintenance of roads and other traffic areas. They can prevent or eliminate slippery conditions. The Technical Specification describes the requirements for de-icing agents with different properties from de-icing agents according EN 16811-1 and EN 16811-2, and which are used for specific services on roads. The testing methods are included in the Technical Specification.

The multitude of products which can be used in winter maintenance - liquid or solid, natural or industrial produced substances – requires the defining of performance criteria with which the products have to comply.

These criteria are used to assess the usability of the de-icing products while taking into consideration all aspects of the safety of the road user, of the protection of the environment and of the road conditions.

1 Scope

This Technical Specification defines general specifications and performance criteria of other solid and liquid de-icing agents than chlorides of sodium, calcium and magnesium, hereinafter referred to products, which are used with their particular properties for specific uses in winter service on roads and other traffic areas, with the exception of runways and parking areas of aircrafts. It establishes the test methods to control them. The products include inorganic and organic de-icing agents, and mixtures of chlorides of sodium, calcium, magnesium and potassium with organic and inorganic components which are intended for special properties like inhibition of corrosion, enhanced melting capacity or improved spreading pattern.

NOTE This Technical Specification defines specifications and performance criteria and offers for each a variation in the form of classes of requirements. This does not mean that there are products likely to respond to all the classes and criteria of the standard. Therefore, when defining the demand the user needs to make sure prior the appropriateness of his choice and the availability of suitable products.

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

prEN 16811-1:2015, *Winter service equipment — De-icing agents — Part 1: Sodium chloride — Requirements and test methods*

prEN 16811-2:2015, *Winter maintenance equipment — De-icing agents — Part 2: Calcium chloride and Magnesium chloride — Requirements and test methods*

EN 573-1, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 1: Numerical designation system*

EN 573-2, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 2: Chemical symbol based designation system*

EN 573-3, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 3: Chemical composition and form of products*

EN 573-5, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 5: Codification of standardized wrought products*

EN 932-1, *Tests for general properties of aggregates — Part 1: Methods for sampling*

EN 1236, *Fertilizers — Determination of bulk density (loose) (ISO 3944, modified)*

EN 10025-2, *Hot rolled products of structural steels — Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10025-5, *Hot rolled products of structural steels — Part 5: Technical delivery conditions for structural steels with improved atmospheric corrosion resistance*

EN 13036-1, *Road and airfield surface characteristics — Test methods — Part 1: Measurement of pavement surface macrotexture depth using a volumetric patch technique*

EN 14231, *Natural stone test methods — Determination of the slip resistance by means of the pendulum tester*

EN 1484, *Water analysis — Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC)*

EN 27888, *Water quality — Determination of electrical conductivity (ISO 7888)*

EN ISO 1461, *Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods (ISO 1461)*

EN ISO 1523, *Determination of flash point — Closed cup equilibrium method (ISO 1523)*

EN ISO 3104, *Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity (ISO 3104)*

EN ISO 9377-2, *Water quality — Determination of hydrocarbon oil index — Part 2: Method using solvent extraction and gas chromatography (ISO 9377-2)*

EN ISO 11130, *Corrosion of metals and alloys — Alternate immersion test in salt solution (ISO 11130)*

EN ISO 11885, *Water quality — Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (ISO 11885)*

ISO 649-2, *Laboratory glassware — Density hydrometers for general purposes — Part 2: Test methods and use*

ISO 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

ISO 758, *Liquid chemical products for industrial use — Determination of density at 20 degrees C*

ISO 2479, *Sodium chloride for industrial use — Determination of matter insoluble in water or in acid and preparation of principal solutions for other determinations*

ISO 2480, *Sodium chloride for industrial use — Determination of sulphate content — Barium sulphate gravimetric method*

ISO 5815-1, *Water quality — Determination of biochemical oxygen demand after n days (BODn) — Part 1: Dilution and seeding method with allylthiourea addition*

ISO 6060, *Water quality — Determination of the chemical oxygen demand*

ISO 2591-1, *Test sieving — Part 1: Methods using test sieves of woven wire cloth and perforated metal plate*

ISO 12846, *Water quality — Determination of mercury — Method using atomic absorption spectrometry (AAS) with and without enrichment*

ISO 15705, *Water quality — Determination of the chemical oxygen demand index (ST-COD) — Small-scale sealed tube method*