
Higrotermalne karakteristike stavb – Računanje in predstavitev klimatskih podatkov – 3. del: Računanje indeksa padavin za navpične površine glede na hitrost vetra in količino dežja (ISO/DIS 15927-3:2003)

Hygrothermal performance of buildings - Calculation and presentation of climatic data - Part 3: Calculation of a driving rain index for vertical surfaces from hourly wind and rain data (ISO/DIS 15927-3:2006)

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English Version

Hygrothermal performance of buildings - Calculation and presentation of climatic data - Part 3: Calculation of a driving rain index for vertical surfaces from hourly wind and rain data (ISO/DIS 15927-3:2006)

Performance hygrothermique des bâtiments - Calcul et présentation des données climatiques - Partie 3: Calcul d'un index de pluie battante pour les surfaces verticales à partir de données horaires de vent et de pluie (ISO/DIS 15927-3:2006)

Wärme- und feuchteschutztechnisches Verhalten von Gebäuden - Berechnung und Darstellung von Klimadaten - Teil 3: Berechnung des Schlagregenindex für senkrechte Oberflächen aus stündlichen Wind- und Regendaten (ISO/DIS 15927-3:2006)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/TC 89.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This document (prEN ISO 15927-3 :2006) has been prepared by Technical Committee CEN/TC 89 " Thermal performance of buildings and building components", the secretariat of which is held by SIS, in collaboration with Technical Committee ISO/TC 163 " Thermal insulation".

This document is currently submitted to the parallel Enquiry

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Hygrothermal performance of buildings - Calculation and presentation of climatic data —

Part 3:

Calculation of a driving rain index for vertical surfaces from hourly wind and rain data

Performance hygrothermique des bâtiments — Calcul et présentation des données climatiques —

Partie 3: Calcul d'un index de pluie battante pour les surfaces verticales à partir de données horaires de vent et de pluie

ICS 07.060; 91.120.10

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In accordance with the provisions of Council Resolution 15/1993 this document is circulated in the English language only.

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Pour accélérer la distribution, le présent document est distribué tel qu'il est parvenu du secrétariat du comité. Le travail de rédaction et de composition de texte sera effectué au Secrétariat central de l'ISO au stade de publication.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15927-3 was prepared by Technical Committee CEN/TC 89, *Thermal performance of buildings and building components*, in cooperation with Technical Committee ISO/TC 163, *Thermal performance and energy use in the built environment*, Subcommittee SC 2, *Calculation methods*.

ISO 15927 consists of the following parts, under the general title *Hygrothermal performance of buildings — Calculation and presentation of climatic data*:

- *Part 1: Monthly means of single meteorological elements;*
- *Part 2: Hourly data for design cooling load;*
- *Part 3: Calculation of a driving rain index for vertical surfaces from hourly wind and rain data;*
- *Part 4: Hourly data for assessing the annual energy use for heating and cooling;*
- *Part 5: Data for design heat load for space heating;*
- *Part 6: Accumulated temperature differences (degree days).*

Introduction

This standard specifies two procedures for analysing data derived from hourly observations of wind and rainfall so as to provide an estimate of the quantity of water likely to impact on a wall of any given orientation in terms of both an annual average and short term spells.

The first method, which uses hourly observations of wind and rainfall, is based closely on the British Standard method (see [1] in the Bibliography), which originated from a long series of measurements of driving rain on buildings in a wide range of locations within the UK. As such, the method will apply to climates similar to the UK; in other regions, with very different climates, it is recommended that confirmation of its applicability is obtained by measurements of driving rain on representative buildings.

Where hourly observations of wind and rain are not available, the second procedure, based on the present weather code for rain and average wind speeds may be used.

In all cases, especially in mountainous areas, direct measurements of the rain impacting on building facades should be made wherever possible.

Rain penetration around the edges of doors and windows or similar cracks in building façades, depends on shorter periods of heavy rain and strong winds.

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Hygrothermal performance of buildings — Calculation and presentation of climatic data — Part 3: Calculation of a driving rain index for vertical surfaces from hourly wind and rain data

1 Scope

This standard specifies two procedures for providing an estimate of the quantity of water likely to impact on a wall of any given orientation. It takes account of topography, local sheltering and the type of building and wall.

The first method, given in Clause 4 and based on coincident hourly rainfall and wind data, defines the method of calculation of:

- the annual average index, which influences the moisture content of masonry;
- the spell index, which influences the likelihood of rain penetration through masonry.

The second method, given in Clause 5 and based on average wind data and a qualitative recording of the presence and intensity of rain (the present weather code for rain), defines a method for calculating the spell length during which masonry is moistened, having a 10 % probability of being exceeded in any year (commonly referred to having a mean return period of 10 years).

A comparison between the two methods is given in informative Annex D.

Procedures are given to correct the results of both methods for topography, local sheltering and the type of building and wall.

The methods included in this standard do not apply in:

- a) mountainous areas with sheer cliffs or deep gorges;
- b) areas in which more than 25 % of the annual rainfall comes from severe convective storms.

2 Normative references

This standard contains no normative references.

3 Definitions, symbols and units

3.1 Definitions

3.1.1 spell

period, or sequence of periods, of wind driven rain on a vertical surface of given orientation

NOTE Further information about spells is given in Annex B.