SLOVENSKI STANDARD
SIST EN ISO 15927-4:2005

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Higrotermalne značilnosti stavb - Izračun in predstavitev podnebnih podatkov - 4. del: Urni podatki za izračun letne rabe energije za ogrevanje in hlajenje (ISO 15927-4:2005)

Hygrothermal performance of buildings - Calculation and presentation of climatic data - Part 4: Hourly data for assessing the annual energy use for heating and cooling (ISO 15927-4:2005)

Wärme- und feuchtetechnisches Verhalten von Gebäuden - Berechnung und Darstellung von Klimadaten - Teil 4: Stündliche Daten zur Abschätzung des Jahresenergiebedarfs für Heiz- und Kühlsysteme (ISO 15927-4:2005)

Performance hygrothermique des bâtiments - Calcul et présentation des données climatiques - Partie 4: Données horaires pour l'évaluation du besoin énergétique annuel de chauffage et de refroidissement (ISO 15927-4:2005)

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ICS:

07.060	Geologija. Meteorologija. Hidrologija	Geology. Meteorology. Hydrology
91.120.10	Toplotna izolacija stavb	Thermal insulation of buildings

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EUROPÄISCHE NORM

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English Version

Hygrothermal performance of buildings - Calculation and presentation of climatic data - Part 4: Hourly data for assessing the annual energy use for heating and cooling (ISO 15927-4:2005)

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This European Standard was approved by CEN on 27 June 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN ISO 15927-4:2005) 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 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 January 2006, and conflicting national standards shall be withdrawn at the latest by January 2006.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

INTERNATIONAL STANDARD

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

Part 4: Hourly data for assessing the annual energy use for heating and cooling

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

Partie 4: Données horaires pour l'évaluation du besoin énergétique annuel de chauffage et de refroidissement

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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 15927-4 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 89, *Thermal performance of buildings and building components,* in collaboration with Technical Committee ISO/TC 163, *Thermal performance and energy use in the built environment*, Subcommittee SC 2, *Calculation methods* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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 4: Hourly data for assessing the annual energy for heating and cooling*

— *Part 5: Data for design heat load for space heating*

— *Part 6: Accumulated temperature differences (degree days)*

Future parts are planned on the following subjects:

— *Hourly data for design cooling load*

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

Introduction

This standard covers the selection of appropriate meteorological data for the assessment of the long-term mean energy use for heating and cooling of buildings. Means of selecting data to assess the maximum heating demand are specified in ISO 15927-5.

Correct simulation of building performance depends not only on the appropriate mean values of the meteorological parameters, but also on the frequency distributions of individual parameters and the cross correlations between them. As these can be difficult to retain in the type of artificially constructed reference year discussed in this part of ISO 15927, the use of long periods (at least ten years but preferably more) of hourly meteorological data is preferred where possible. This also takes into account long spells of unusually warm or cold weather, lasting several months, which is eliminated in the construction of a reference year. In practice, however, long runs of hourly data containing all the necessary parameters are very expensive and can be difficult to obtain for many areas. There is, therefore, still a need for annual sets of data that can be used to represent the long-term mean performance of buildings. These can be generated once from long runs of expensive data and then distributed more cheaply.

This part of ISO 15927 specifies a method for the construction of a reference year from a longer meteorological record. Other methods are possible for constructing reference years for specific purposes, including those methods that are based on an analysis of general weather situations.