SLOVENSKI STANDARD
oSIST prEN 14037-3:2012

01-januar-2012

Stropne sevalne plošče za ogrevanje in hlajenje površin za vodo s temperaturo pod 120°C - 3. del: Metoda razvrščanja in vrednotenja sevalne toplotne moči stropnih sevalnih plošč

Free hanging heating and cooling surfaces for water with a temperature below 120°C - Part 3: Rating method and evaluation of radiant thermal output of ceiling mounted radiant panels

An der Decke frei abgehängte Heiz- und Kühlflächen für Wasser mit einer Temperatur unter 120°C - Teil 3: Wärmetechnische Umrechnungen, Bewertungsmethoden und Festlegung der Strahlungs-Wärmeleistung für Deckenstrahlplatten

Panneaux rayonnants de plafond alimentés en eau à une température inférieure à 120°C - Partie 3: Méthode de conversion de la puissance thermique et évaluation de la puissance thermique radiative

Ta slovenski standard je istoveten z: prEN 14037-3

ICS:

91.140.10	Sistemi centralnega ogrevanja	Central heating systems

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EUROPEAN STANDARD

NORME EUROPÉENNE

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ICS 91.140.10

Will supersede EN 14037-3:2003

English Version

Free hanging heating and cooling surfaces for water with a temperature below 120°C - Part 3: Rating method and evaluation of radiant thermal output of ceiling mounted radiant panels

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 130.

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.

This draft European Standard was established by CEN 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.

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

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Contents

Foreword

This document (prEN 14037-3:2011) has been prepared by Technical Committee CEN/TC 130 “Space heating appliances without integral heat sources”, the secretariat of which is held by UNI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14037-3:2003.

The main changes are:

- the title has been changed,

- some editorial updates have been added.

Introduction

This European Standard results from the recognition that the ceiling mounted heating and cooling surfaces falling into the field of application hereinafter stated are traded of the basis of their thermal and cooling output. For evaluating and comparing different ceiling mounted radiant panels it is therefore necessary to refer to a single stipulated value.

The European Standard EN 14037, Free hanging heating and cooling surfaces for water with a temperature below 120°C consists of the following parts:

- Part 1: Technical specifications and requirements
- Part 2: Test method for thermal output of ceiling mounted radiant panels
- Part 3: Rating method and evaluation of radiant thermal output of ceiling mounted radiant panels
- Part 4: Test method for cooling capacity of ceiling mounted radiant panels
- Part 5: Test method for thermal output of open or closed heated ceiling surfaces

1 Scope

This European Standard describes the procedure to determine the rated thermal output (Φ_b) and the mean surface temperature (t_{rp}).

Ceiling mounted radiant panels exchange heat mainly by radiation.

The test methods for determining the thermal output of ceiling mounted radiant panels, as described in prEN 14037-2, give reliable results for comparing different products, but these results understate the output obtained under real operating conditions.

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.

prEN 14037-1, Free hanging heating and cooling surfaces for water with a temperature below 120°C - Part 1: Technical specifications and requirements

prEN 14037-2, Free hanging heating and cooling surfaces for water with a temperature below 120°C - Part 2: Test method for thermal output of ceiling mounted radiant panels

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in prEN 14037-1 apply.

4 Testing of the mean surface temperature and the emissivity of the panel

4.1 Determination of the mean surface temperature of the active length

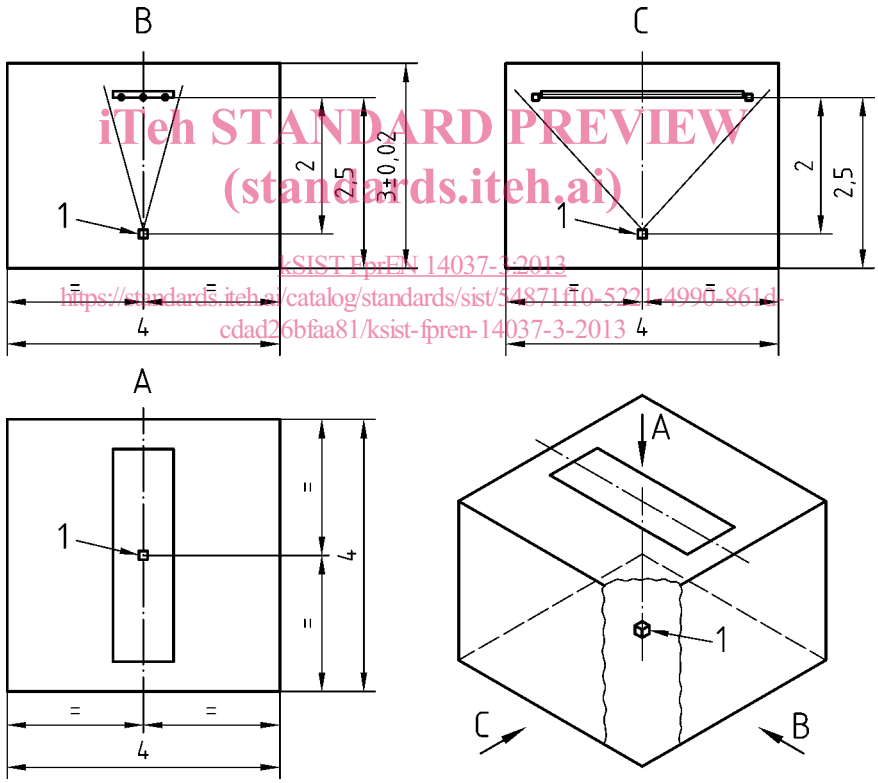
The mean surface temperature shall be determined by an Infra-Red (IR) system with the following features: automatic mean temperature of the measured surface including the emissivity, the distance and the ambient temperature.

The test is made in the same test booth and under the same test conditions described in prEN 14037-2, clauses 5, 7 and 8. While testing the mean surface temperature, the connecting components shall be insulated.

The mean surface temperature shall be determined with the IR system for each testing point according to prEN 14037-2, 8.9.

The IR system shall be installed with the sensitive probe directed towards the central vertical axis of the ceiling mounted radiant panel (see Figure 1).

Dimensions in millimetres



Key

1 IR system
A Top view
B Side view over the width of the ceiling panel
C Side view over the length of the ceiling panel

Figure 1 — Arrangement of the IR system and the ceiling panel in the test booth during determination with only one testing point

The distance between the surface of the ceiling mounted radiant panel and the sensor shall be two meters.