VEEPÕHISED PINNASISESED KÜTTE- JA JAHUTUSSÜSTEEMID. OSA 2: PÕRANDKÜTE: SOOJUSVÕIMSUSE KINDLAKSMÄÄRAMISE MEETODID, KASUTADES ARVUTUSI JA EKSPERIMENTAALSEID KATSEID

Water based surface embedded heating and cooling systems - Part 2: Floor heating: Methods for the determination of the thermal output using calculations and experimental tests

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 1264-2:2021 sisaldab Euroopa standardi EN 1264-2:2021 ingliskeelset teksti.	This Estonian standard EVS-EN 1264-2:2021 consists of the English text of the European standard EN 1264-2:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 19.05.2021.	Date of Availability of the European standard is 19.05.2021.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD

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English Version

Water based surface embedded heating and cooling systems - Part 2: Floor heating: Methods for the determination of the thermal output using calculations and experimental tests

Systèmes de surfaces chauffantes et rafraîchissantes hydrauliques intégrées - Partie 2: Chauffage par le sol: Méthodes de démonstration pour la détermination de l'émission thermique utilisant des méthodes par le calcul et à l'aide de méthodes d'essai

Raumflächenintegrierte Heiz- und Kühlsysteme mit Wasserdurchströmung - Teil 2: Fußbodenheizung: Prüfverfahren für die Bestimmung der Wärmeleistung unter Benutzung von Berechnungsmethoden und experimentellen Methoden

This European Standard was approved by CEN on 12 April 2021.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

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European foreword

This document (EN 1264-2:2021) 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 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 November 2021 and conflicting national standards shall be withdrawn at the latest by November 2021.

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

This document supersedes EN 1264-2:2008+A1:2012.

The main changes compared to the previous edition are listed below:

a) Modification of the Title;

b) Clarification of the Scope;

c) Improved wording, especially the term “prove method”;

d) Modification of Clause 9;

e) Deletion of Clause 10, Test procedure for the determination of the effective thermal resistance of carpets and all references to this Clause;

f) Deletion of Figures A.9, A.10 and A.11;

g) Table A.13, Heat conductivities for materials was moved to the new Annex C and was modified;

h) Deletion of Annex B, Test procedure for the determination of parameters for application in the EN 15377 series;

i) Addition of new Clause 12, Calculation of the specific heat capacity of the system (C-Value).

EN 1264, *Water based surface embedded heating and cooling systems*, consists of the following parts:

— *Part 1: Definitions and symbols;*

— *Part 2: Floor heating: Methods for the determination of the thermal output using calculations and experimental tests;*

— *Part 3: Dimensioning;*

— *Part 4: Installation;*

— *Part 5: Determination of the thermal output for wall and ceiling heating and for floor, wall and ceiling cooling.*

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The EN 1264 series is based on the realization that in the field of commercial trade, the thermal output of heating and cooling systems represents the basis of rating. In order to be able to evaluate and compare different heating and/or cooling systems, it is therefore necessary to refer to values determined using one single, unambiguously defined method. The basis for doing so is the test methods for the determination of the thermal output of floor heating systems specified in EN 1264-2. In analogy to EN 442-2, *Radiators and convectors — Part 2: Test methods and rating*, these test methods provide characteristic partial load curves under defined boundary conditions as well as the characteristic output of the system represented by the standard thermal output together with the associated standard temperature difference between the heating medium and the room temperature.

1 Scope

The EN 1264 series gives guidelines for surface embedded heating and cooling systems installed in buildings, residential and non-residential (e.g. office, public, commercial and industrial buildings) and focuses on systems installed for the purpose of thermal comfort.

The EN 1264 series gives guidelines for water based heating and cooling systems embedded into the enclosure surfaces of the room to be heated or to be cooled. It also specifies the use of other heating media instead of water, as appropriate.

The EN 1264 series specifies standardized product characteristics by calculation and testing the thermal output of heating for technical specifications and certification. For the design, construction and operation of these systems, see EN 1264-3 and EN 1264-4 for the types A, B, C, D, H, I and J. For the types E, F and G, see the EN ISO 11855 series.

The systems specified in the EN 1264 series are adjoined to the structural base of the enclosure surfaces of the building, mounted directly or with fixing supports. The EN 1264 series does not specify ceiling systems mounted in a suspended ceiling with a designed open air gap between the system and the building structure which allows the thermally induced circulation of the air. The thermal output of these systems can be determined according to the EN 14037 series and EN 14240.

EN 1264-2 specifies hot water floor heating systems. The application of EN 1264-5 requires the prior use of EN 1264-2. EN 1264-5 specifies the conversion of the thermal output of floor heating systems determined in EN 1264-2 into the thermal output of heating surfaces embedded in walls and ceilings as well as into the thermal output of cooling surfaces embedded in floors, walls and ceilings.

EN 1264-2 specifies the boundary conditions and the test methods for the determination of the thermal output of hot water floor heating systems as a function of the temperature difference between the heating medium and the room temperature.

The thermal output is tested by a calculation method and by a measurement method. The calculation method is applicable to systems corresponding to the definitions in EN 1264-1 (type A, B, C, D, H, I and J). The measurement method gives guidance for systems not corresponding to these definitions. The calculation method and the measurement method are consistent with each other and provide correlating and adequate test results.

The test results, expressed depending on further parameters, are the standard specific thermal output and the associated standard temperature difference between the heating medium and the room temperature as well as fields of characteristic curves showing the relationship between the specific thermal output and the temperature difference between the heating medium and the room.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1264-1, *Water based surface embedded heating and cooling systems — Part 1: Definitions and symbols*

EN 1264-3:2021, *Water based surface embedded heating and cooling systems — Part 3: Dimensioning*