



Institut luxembourgeois de la normalisation  
de l'accréditation, de la sécurité et qualité  
des produits et services

## ILNAS-EN 1264-5:2021

### **Water based surface embedded heating and cooling systems - Part 5: Determination of the thermal output for wall and ceiling heating and for**

Systèmes de surfaces chauffantes et  
rafraîchissantes hydrauliques intégrées -  
Partie 5 : Détermination de l'émission  
thermique des surfaces chauffantes et

Raumflächenintegrierte Heiz- und  
Kühlsysteme mit Wasserdurchströmung -  
Teil 5: Bestimmung der Wärmeleistung  
von Wand- und Deckenheizung sowie

05/2021



## National Foreword

This European Standard EN 1264-5:2021 was adopted as Luxembourgish Standard ILNAS-EN 1264-5:2021.

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- Participate in the design of standards
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English Version

**Water based surface embedded heating and cooling  
systems - Part 5: Determination of the thermal output for  
wall and ceiling heating and for floor, wall and ceiling  
cooling**

Systèmes de surfaces chauffantes et rafraîchissantes  
hydrauliques intégrées - Partie 5 : Détermination de  
l'émission thermique des surfaces chauffantes et  
rafraîchissantes intégrées dans les sols, les plafonds et  
les murs

Raumflächenintegrierte Heiz- und Kühlsysteme mit  
Wasserdurchströmung - Teil 5: Bestimmung der  
Wärmeleistung von Wand- und Deckenheizung sowie  
Kühlleistung von Fußboden-, Wand- und  
Deckenkühlung

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 1264-5:2021) 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 1264-5:2008.

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”.

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 cooling systems, it is therefore necessary to refer to values determined using one single, unambiguously defined method. The basis for doing so are 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*, this test method provides 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 1264-5 specifies the recalculation of values determined in EN 1264-2 for the system in question. It enables the conversion of the calculation and measurement results of EN 1264-2 into results for other surface orientations in the room, i.e. for ceiling and wall heating, as well as for the application as cooling surfaces, i.e. for floor, ceiling and wall cooling. The test results of EN 1264-2 are the basis of all calculation, whether or not the system in question is used for heating or cooling application.

## 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 1264-2:2021, *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*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1264-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>