



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

## ILNAS-EN ISO 12241:2022

### **Thermal insulation for building equipment and industrial installations - Calculation rules (ISO 12241:2022, Corrected version 2022-11)**

Isolation thermique des équipements de  
bâtiments et des installations  
industrielles - Méthodes de calcul (ISO  
12241:2022, Version corrigée 2022-11)

Wärmedämmung für haus- und  
betriebstechnischen Anlagen -  
Berechnungsregeln (ISO 12241:2022,  
korrigierte Fassung 2022-11)

06/2022



## National Foreword

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ILNAS-EN ISO 12241:2022

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Anlagen - Berechnungsregeln (ISO 12241:2022,  
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This European Standard was approved by CEN on 29 May 2022.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

Contents	Page
European foreword.....	3

## European foreword

This document (EN ISO 12241:2022) has been prepared by Technical Committee ISO/TC 163 "Thermal performance and energy use in the built environment" in collaboration with Technical Committee CEN/TC 89 "Thermal performance of buildings and building components" the secretariat of which is held by SIS.

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of an identical text or by endorsement, at the latest by December 2022, and conflicting national standards shall be withdrawn at the latest by December 2022.

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 ISO 12241:2008.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association.

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## Endorsement notice

The text of ISO 12241:2022, Corrected version 2022-11 has been approved by CEN as EN ISO 12241:2022 without any modification.

Third edition  
2022-06

Corrected version  
2022-11

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## **Thermal insulation for building equipment and industrial installations — Calculation rules**

*Isolation thermique des équipements de bâtiments et des installations  
industrielles — Méthodes de calcul*



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# Contents

Page

<b>Foreword</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>1 Scope</b> .....	<b>1</b>
<b>2 Normative references</b> .....	<b>1</b>
<b>3 Terms, definitions and symbols</b> .....	<b>1</b>
3.1 Terms and definitions .....	1
3.2 Symbols.....	1
3.3 Subscripts.....	3
<b>4 Calculation rules and formulae of heat transfer</b> .....	<b>4</b>
4.1 Fundamental formulae for heat transfer .....	4
4.1.1 General.....	4
4.1.2 Thermal conduction .....	4
4.1.3 Surface coefficient of heat transfer.....	9
4.1.4 External surface resistance.....	16
4.1.5 Thermal transmittance.....	16
4.1.6 Heat flow rate.....	18
4.1.7 Temperatures of the layer boundaries.....	18
4.2 Determination of the influence of thermal bridges .....	19
4.2.1 General.....	19
4.2.2 Insulation system related thermal bridges .....	19
4.2.3 Installation related thermal bridges .....	19
4.3 Determination of total heat flow rate for plane walls, pipes and spheres .....	20
4.4 Surface temperature .....	20
4.5 Prevention of surface condensation .....	21
<b>5 Calculation of the temperature change in pipes, vessels, and containers</b> .....	<b>22</b>
5.1 General.....	22
5.2 Longitudinal temperature change in a pipe .....	23
5.3 Temperature change and cooling times in pipes, vessels, and containers.....	23
<b>6 Calculation of cooling and freezing times of stationary liquids</b> .....	<b>24</b>
6.1 Calculation of the cooling time to prevent the freezing of water in a pipe .....	24
6.2 Calculation of the freezing time of water in a pipe .....	25
<b>7 Calculation of heat loss for underground pipelines</b> .....	<b>26</b>
7.1 General.....	26
7.2 Single line without channels .....	26
7.2.1 Uninsulated pipe .....	26
7.2.2 Insulated pipe .....	27
7.3 Other cases.....	28
<b>Annex A (informative) Thermal bridges</b> .....	<b>29</b>
<b>Annex B (informative) Examples</b> .....	<b>43</b>
<b>Bibliography</b> .....	<b>52</b>



## 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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

This third edition cancels and replaces the second edition (ISO 12241:2008), which has been technically revised.

The main changes are as follows:

- how to calculate the convective part of the external surface coefficient of heat transfer;
- how to introduce thermal bridges in the general heat loss calculation;
- provides detailed data along with the method for calculating fittings (thermal bridges), only informative.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

This corrected version of ISO 12241:2022 incorporates the following corrections:

Table 4, page 2: The header (Free convection/Nusselt number) has been removed as the information on page 2 belongs to the "Forced convection" element of the table.

Table A.2: The three instances of "to" were corrected to minus "-".

B.2: In the following formula, 101,510 was corrected to 101,595

$$Nu_{\text{free}} = (0,752 + 0,303 \cdot (8,51 \cdot 10^8)^{1/6})^2 = 101,595.$$