SLOVENSKI STANDARD
SIST EN ISO 11855-2:2021/oprA1:2023

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Načrtovanje notranjega okolja v stavbah - Vgrajeni sevalni ogrevalni in hladilni sistemi - 2. del: Določanje načrtovane grelne in hladilne moči - Dopolnilo A1 (ISO 11855-2:2021/DAM 1:2023)

Building environment design - Embedded radiant heating and cooling systems - Part 2: Determination of the design heating and cooling capacity - Amendment 1 (ISO 11855-2:2021/DAM 1:2023)

Umweltgerechte Gebäudeplanung - Flächenintegrierte Strahlungsheiz- und -kühlsysteme - Teil 2: Bestimmung der Auslegungs-Heiz- und Kühlleistung (ISO 11855-2:2021/DAM 1:2023)

Conception de l'environnement des bâtiments - Systèmes intégrés de chauffage et de refroidissement par rayonnement - Partie 2: Détermination de la puissance calorifique et frigorifique à la conception - Amendement 1 (ISO 11855-2:2021/DAM 1:2023)

Ta slovenski standard je istoveten z: **EN ISO 11855-2:2021/prA1**

ICS:

91.140.10	Sistemi centralnega ogrevanja	Central heating systems
91.140.30	Prezračevalni in klimatski sistemi	Ventilation and air-conditioning systems

SIST EN ISO 11855-2:2021/oprA1:2023 **en,fr,de**

DRAFT AMENDMENT
ISO 11855-2:2021/DAM 1

ISO/TC **205** Secretariat: **ANSI**

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Building environment design — Embedded radiant heating and cooling systems —

Part 2: Determination of the design heating and cooling capacity

AMENDMENT 1

Conception de l'environnement des bâtiments — Systèmes intégrés de chauffage et de refroidissement par rayonnement —

Partie 2: Détermination de la puissance calorifique et frigorifique à la conception

AMENDEMENT 1

ICS: 91.040.01

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Building environment design — Embedded radiant heating and cooling systems —

Part 2: Determination of the design heating and cooling capacity

AMENDMENT 1

Foreword

Modify to the following:

The main changes compared to the previous edition are as follows:

— the type systems have been redefined

— update of the figures for system types based on the amendment,

— editorial corrections.

4 Symbols

Table 1- Symbols

Modify to the following:

Table 1 — Symbols

Symbol	Unit	Quantity
s_h	m	In system type II thickness of thermal insulation from the outward edge of the insulation to the inward edge of the pipes (see Figure 2)
s_l	m	In system type II thickness of thermal insulation from the outward edge of the insulation to the outward edge of the pipes (see Figure 2)
S	m	Thickness of the screed (excluding the pipes in system type I)

7 Simplified calculation methods for determining heating and cooling capacity or surface temperature

Section 7

Modify to the following:

A given system construction can only be calculated with one of the simplified methods. The correct method to apply depends on the system type I to IV (position of pipes, concrete or wooden construction) and the boundary conditions listed in Table 2.

Delete Note.

Table 2 -Criteria for selection of simplified calculation method

Modify to the following:

Table 2 — Criteria for selection of simplified calculation method

Pipe position	New system type	Old system type	Figure	Boundary conditions	Reference to method
In screed Thermally decoupled from the structural base of the building by thermal insulation	I	A, C, H, I, J	2 a)	$W \geq 0{,}050$ m $s_u \geq 0{,}01$ m 0,008 m ≤ d ≤ 0,03 m $s_u/\lambda_e \geq 0{,}01$	7.1 A.2.2
In insulation, conductive devices Not wooden constructions except for weight bearing and thermal diffusion layer	II	B	2 b)	0,05 m ≤ W ≤ 0,45 m 0,014 m ≤ d ≤ 0,022 m 0,01 m ≤ s_u/λ_e ≤ 0,18 m	7.1 A.2.3
~~Plane section system~~		~~D~~	~~2 c)~~	-	~~7.1,~~ ~~A.2.4~~
In concrete slab	V	E	4	$S_T/W \geq 0{,}3$	7.2, B.1
Capillary tubes in concrete surface	III	F	5	$d_a/W \leq 0{,}2$	7.2, B.2
Wooden constructions, pipes in sub floor or under sub floor, conductive devices	IV	G	6	$\lambda_{wl} \geq 10\,\lambda$ $S_{WL\lambda} \geq 0{,}01$	7.2, Annex C

Clause 7.1 Universal single power functions

Modify to the following:

This calculation method is given in Annex A for the following five types of systems:

— System type I Pipes directly included in a thermal diffusion layer (see Figure 2)

— System type II Pipes included in thermal insulation layer with additional thermal conduction layer (see Figure 3)

— System type III Capillary tubes directly included in a thermal diffusion layer (see Figure 4)

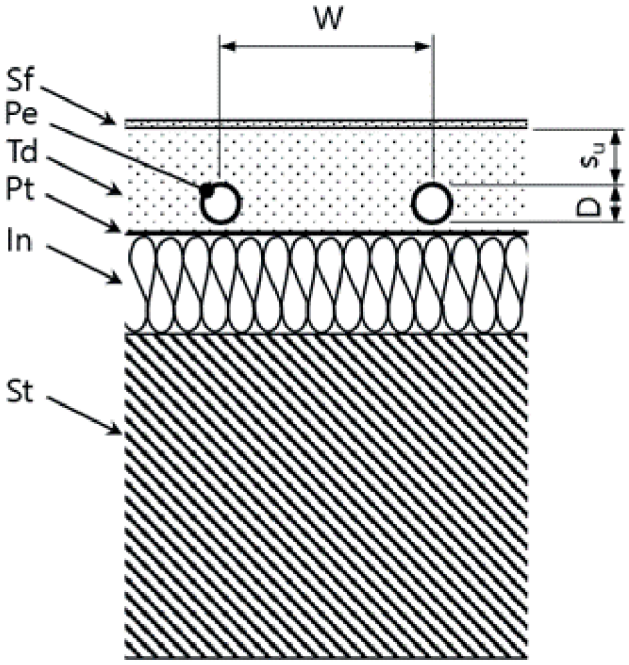
— System type IV Pipes with a thermal reflection layer and an air gap to floor covering (see Figure 4)

— System type V Pipes included directly in the structural construction (TABS) (see Figure 6)

Figure 3 shows the types as embedded in the floor, but the methods can also be applied for wall and ceiling systems with a corresponding position of the pipes.

Figure 2 a) Type A and C

Modify with the following:



Key

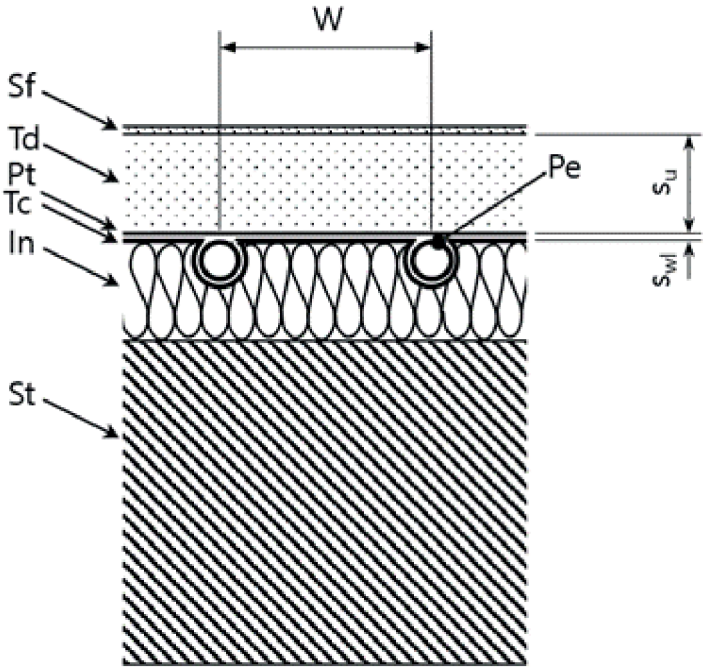
D external diameter of the pipe
ln thermal insulation layer
Pe pipes or electric cables
Pt protection layer
Sf surface layer
St structural layer
s_u thickness of the layer above the pipe
Td thermal diffusion layer
W pipe spacing

Figure 2 — System types I, pipes directly included in a thermal diffusion layer

Figure 2 b) Type B

Modify with the following:

Replace Figure 2 b) with the new figure 3.



Key

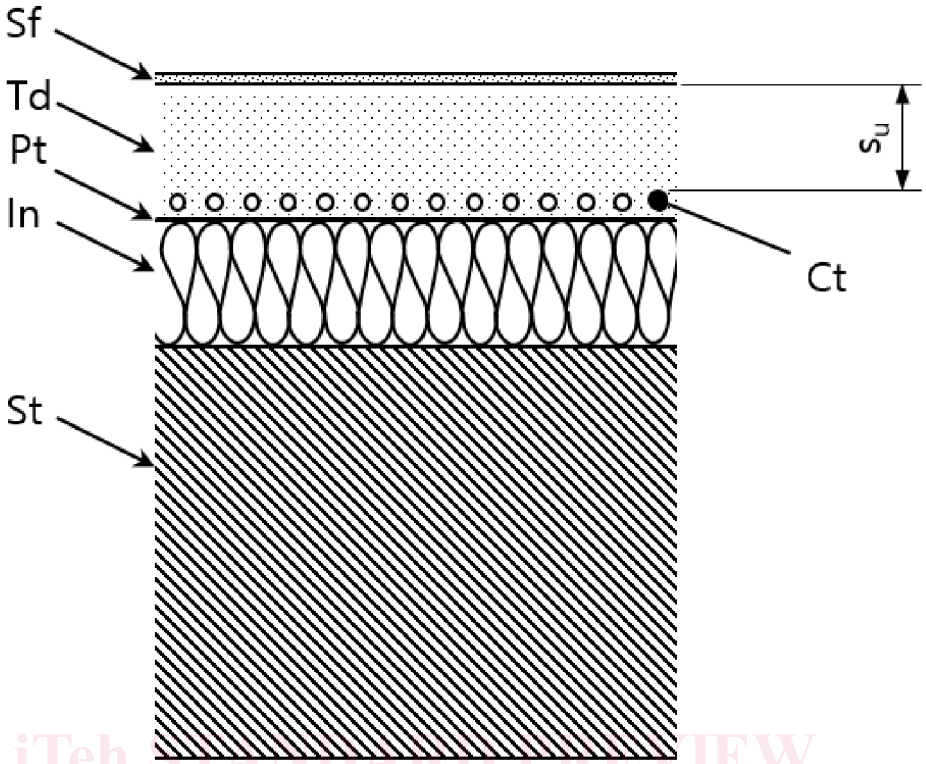
In	thermal insulation layer
Pe	pipes or electric cables
Pt	protection layer
Sf	surface layer
St	structural layer
s_u	thickness of the layer above the pipe
s_{wl}	thickness of heat conducting device
Tc	thermal conduction layer

Figure 3 — System types II, pipes included in a thermal insulation layer with additional thermal conduction layer

Figure 2 c) Type D

Modify with the following:

Replace Figure 2 c) with the new figure 4.



Key

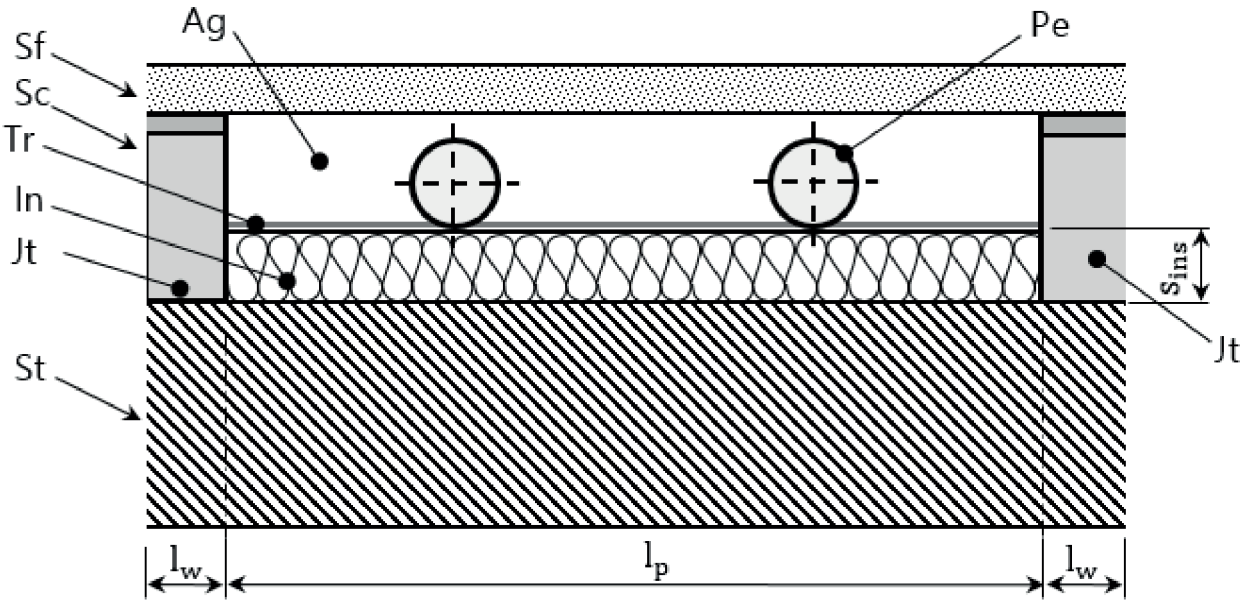
Ct capillary tubes
ln thermal insulation layer
Pt protection layer
Sf surface layer
St structural layer
s_u thickness of the layer above the pipe
Td thermal diffusion layer

Figure 4 — System types III, capillary tubes directly included in a thermal diffusion layer

Figure 2 d) Type H

Modify with the following:

Replace Figure 2 d) with the new figure 5.



Key

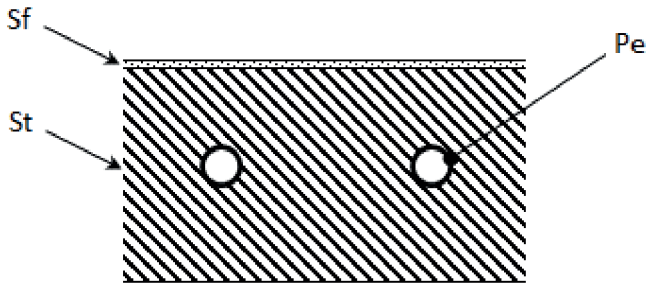
Ag	air gap
In	thermal insulation layer
Jt	joist
l_p	distance between the joists
l_w	thickness of the joist
Pe	pipes or electric cables
Sc	structural construction
Sf	surface layer (floor covering)
s_{ins}	thickness of thermal insulation
St	structural layer
Tr	thermal reflection layer

Figure 5 — System types IV, pipes with a thermal reflection layer and an air gap to floor covering

Figure 2 e) Type I

Modify the following:

Replace Figure 2 e) with the new figure 6.



Key

Pe pipes or electric cables

Sf surface layer

St structural layer\

Figure 6 — System types V, pipes included directly in the structure construction (TABS)

7.2 Thermal resistance methods

Modify with the following:

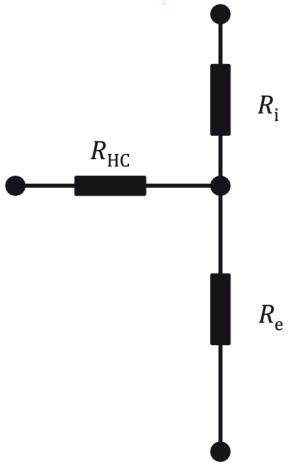
The concept is shown in Figure 7.

This calculation method, using the general resistance concept, is given in Annex B for the following two types of systems:

— system type V with pipes embedded in massive concrete slabs (see Figure 6);

— system type III with capillary pipes embedded in a layer at the inside surface (see Figure 4).

Insert the following Figure 7:



Key

R_e external resistance

R_{HC} equivalent resistance

R_i internal resistance

Figure 7 — Basic network of thermal resistance

Figure 4