INTERNATIONAL STANDARD

ISO 11855-3

Second edition
2021-08

AMENDMENT 1

Building environment design — Embedded radiant heating and cooling systems —

Part 3: Design and dimensioning

AMENDMENT 1

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

Partie 3: Conception et dimensionnement

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5.1.4

Modify to the following:

The field of characteristic curves of a floor heating system with a specific pipe spacing W shall at least contain the characteristic curves for values of the thermal resistance of surface covering $R_{\lambda,B}$ = 0, $R_{\lambda,B}$ = 0,05, $R_{\lambda,B}$ = 0,10 and $R_{\lambda,B}$ = 0,15 (m^2K/W), in accordance with ISO 11855-2 (see Figure 1). In order to apply values of $R_{\lambda,B}$ > 0,15 (m^2K/W), it is possible only when the values are verified.

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5.1.5 Figure 1

Modify to the following:

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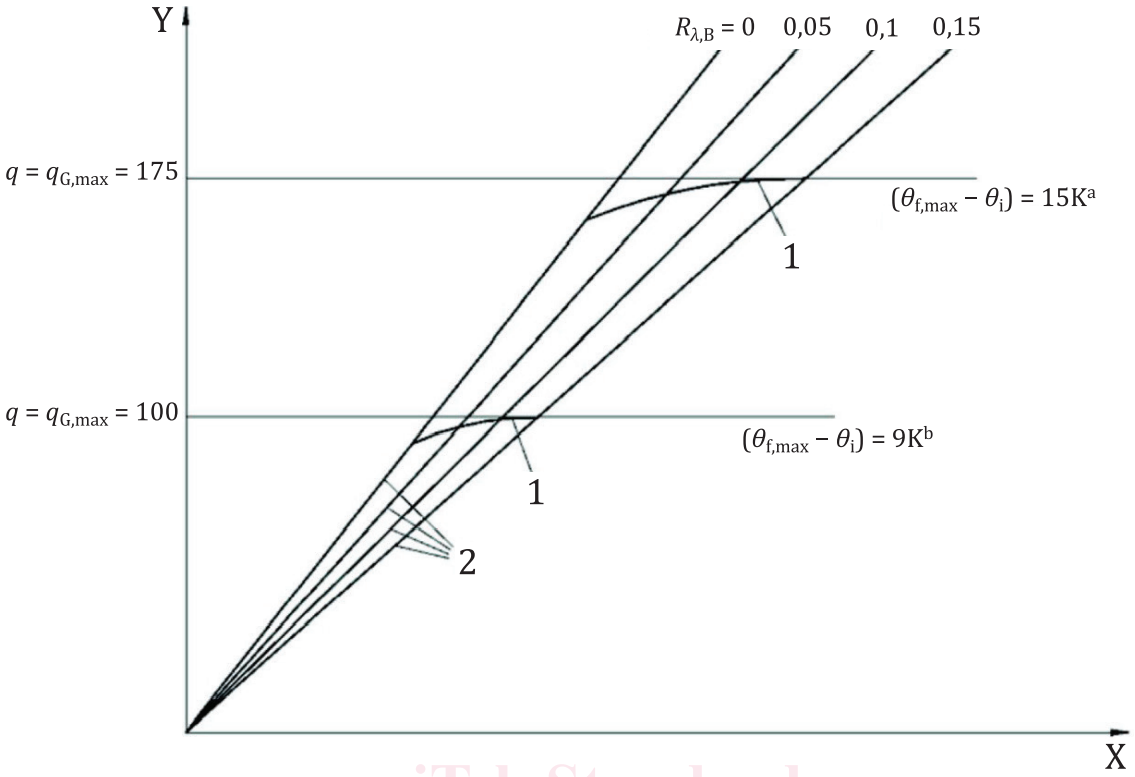

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Key

X $\Delta\theta_H$ K
Y q W/m^2
1 limit curves
2 performance characteristic curves
[a] Peripheral area.
[b] Occupied area.

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Figure 1 — Field of characteristic curves, including limit curves for floor heating, for constant pipe spacing

5.1.6

Modify to the following:

In order to limit the heat flow through the floor towards the space below, the required back-side thermal resistance of the insulating layer $R_{\lambda,ins}$ shall be specified in the design to be not lower than the value in ISO 11855-5:2021, 5.1.2.3.2.

For systems which have a flat insulating layer (system types I, II and IV in ISO 11855-1), the back-side thermal resistance of the insulating layer $R_{\lambda,ins}$ is calculated by Formula (7) where there is no stud and the effective thickness of thermal insulating layer s_{ins} is identical to the thickness of the thermal insulating panel and the effective thermal conductivity of the thermal insulation layer λ_{ins} is calculated by Formula (8) where there are studs.

$$R_{\lambda,ins} = \frac{s_{ins}}{\lambda_{ins}} \tag{7}$$

$$\lambda_{ins} = \lambda_i \frac{l_p - l_{ws}}{l_{ps}} + \lambda_{ws} \frac{l_{ws}}{l_{ps}} \tag{8}$$

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