Ministry of the Environment, Finland
Unofficial translation. Legally binding only in Finnish and Swedish

8/16

Ministry of the Environment Decree

concerning national choices for thermal actions, when applying standard SFS-EN 1991-1-5

By decision of the Ministry of the Environment, the following is laid down under Section 117a of the Land Use and Building Act (132/1999), as it stands in Act 958/2012:

Section 1

Scope

This Decree is applied when selecting thermal actions and is used together with the latest version of standard SFS-EN 1991-1-5.

Section 2

Indicative temperatures of the inner environment

T_1= 25 ℃ (summer) and T_2= 23 ℃ (winter) are used as temperature values in accordance with the values in Table 5.1 of clause 5.3(2) of the standard.

Section 3

Indicative temperatures for buildings above ground level

The values in Table 5.2 of clause 5.3(2) of the standard for indicative temperatures for buildings above ground level shall apply as follows.

The temperature values specified in the isotherm maps in Figures 1 and 2 are used for maximum shade air temperature (T_{max}) and minimum shade air temperature (T_{min}).

For values of solar radiation effects T_3, T_4 and T_5, T_3 = 5 ℃, T_4 = 10 ℃ and T_5 =15 ℃ are used for structural elements facing north and east.

The following values are used for structural elements facing south and west or for horizontal structural elements:

1) T_3 = 10 °C, T_4 = 20 °C and T_5 = 30 °C for structures with a large outer insulation mass (e.g. concrete sandwich structures); or

2) T_3 = 18 °C, T_4 = 30 °C and T_5 = 42 °C for structures with a small outer insulation mass (e.g. sandwich structure with a sheet metal surface).

When the absorption factor has been determined, the temperature may be selected on the basis of the absorption factor, regardless of the surface colour.

Section 4

Indicative temperatures for underground parts of buildings

For indicative temperatures for underground parts of buildings, the values in Table 5.3 of clause 5.3(2) of the standard shall be applied, where $T_6 = 6$ °C, $T_7 = 4$ °C, $T_8 = -7$ °C and $T_9 = -4$ °C.

Section 5

Isotherms of minimum and maximum shade air temperatures

Data on annual minimum and annual maximum shade air temperature, in accordance with A.1(1) of the standard, are given in Figures 1 and 2.
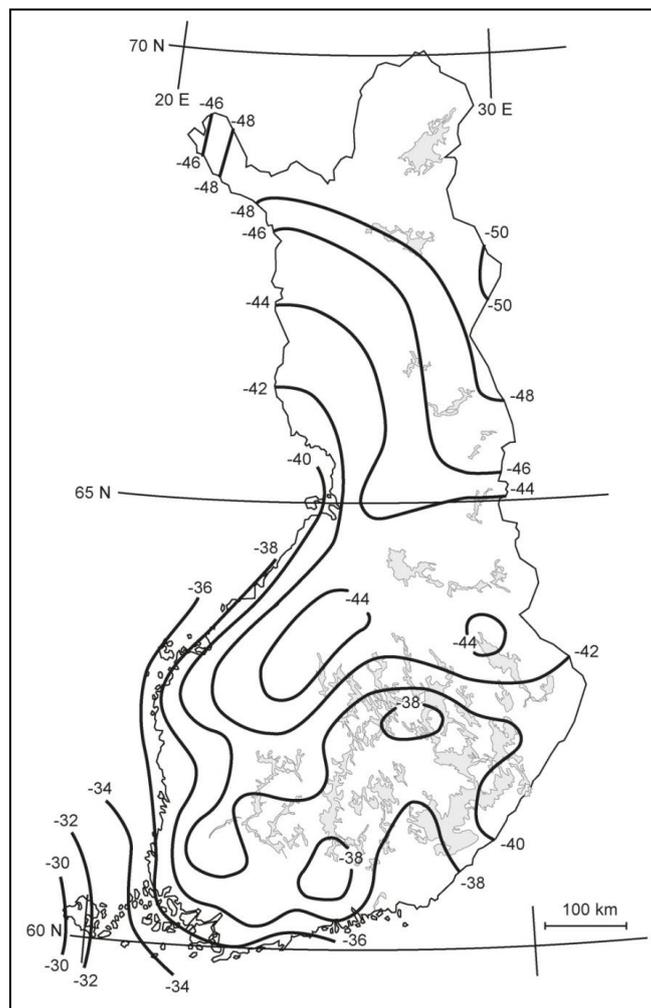

Figure 1. Isotherms of the minimum shade air temperature (°C). Considerable local deviations may occur depending on the topography and the built environment.

Figure 2. Isotherms of the maximum shade air temperature (°C). Considerable local deviations may occur depending on the topography and the built environment.

The minimum shade air temperatures represent values with an annual probability of falling below of 0.02, and the maximum shade air temperatures represent values with an annual probability of being exceeded of 0.02.

The values of shade air temperature may be adjusted for height above sea level by subtracting 0.5 °C per 100 m height for minimum shade air temperatures and 1.0 °C per 100 m height for maximum shade air temperatures.

Unless other information is available, the value of 10 °C is used for the initial temperature T_0, as specified in A.1(3) of Annex A to the standard.

_____

This Decree enters into force on 1 January 2017.

This Decree shall apply to projects initiated after the Decree enters into force.

This Decree repeals the National Annex to standard SFS-EN 1991-1-5 concerning the application of Eurocodes in building construction, issued by the Ministry of the Environment on 5 November 2010.

In Helsinki on 7 November 2016

The Minister of Agriculture and the Environment Kimmo Tiilikainen

Senior Engineer Jukka Bergman