ANNEX 4

NATIONAL ANNEX

TO STANDARD

SFS-EN 1991-1-3 EUROCODE 1: ACTIONS ON STRUCTURES

Part 1–3: General Actions. Snow loads

Preface

This National Annex is used together with standard SFS-EN 1991-1-3: 2003.

This National Annex sets out:

a) the national parameters for the following paragraphs in Standard EN 1991-1-3 where national selection is permitted:

- 1.1(2) - 1.1(4)
- 2(3), 2(4)
- 3.3(1), 3.3(3),
- 4.1(1), 4.1(2)
- 4.2(1)
- 4.3(1)
- 5.2(2), 5.2(5) - 5.2(8)
- 5.3.3(4), 5.3.4(3), 5.3.4(4), 5.3.5(1), 5.3.5(3), 5.3.6(1), 5.3.6(3)
- 6.2(2)
- 6.3(1), 6.3(2)
- Annex A

b) Guidance for the use of the informative annexes B, C, D and E.

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1.1 Scope

1.1(2)

This clause does not apply to Finland.

1.1(3)

Areas referred to herein are not determined in Finland.

1.1(4)

Annex B is not used in Finland.

2 Classification of actions

2(3)

In Finland there are no particular conditions meant in this clause, and thus Annex B is not used in Finland.

2(4)

In Finland there are no exceptional snow drifts meant in this clause.

3.3 Exceptional conditions

3.3(1)

In Finland there are no exceptional conditions meant in this clause, and thus Annex B is not used in Finland.

3.3(3)

This paragraph does not apply to Finland for the reason referred to above in paragraph 3.3(1).

4.1 Characteristic values

4.1(1)

In Finland Annex C is not used. The characteristic values of snow load on the ground in Finland are given in figure 4.1 (FI) below. The values are in kN/m^2. The values given in the figure are minimum values. Greater values can be agreed upon for individual projects.

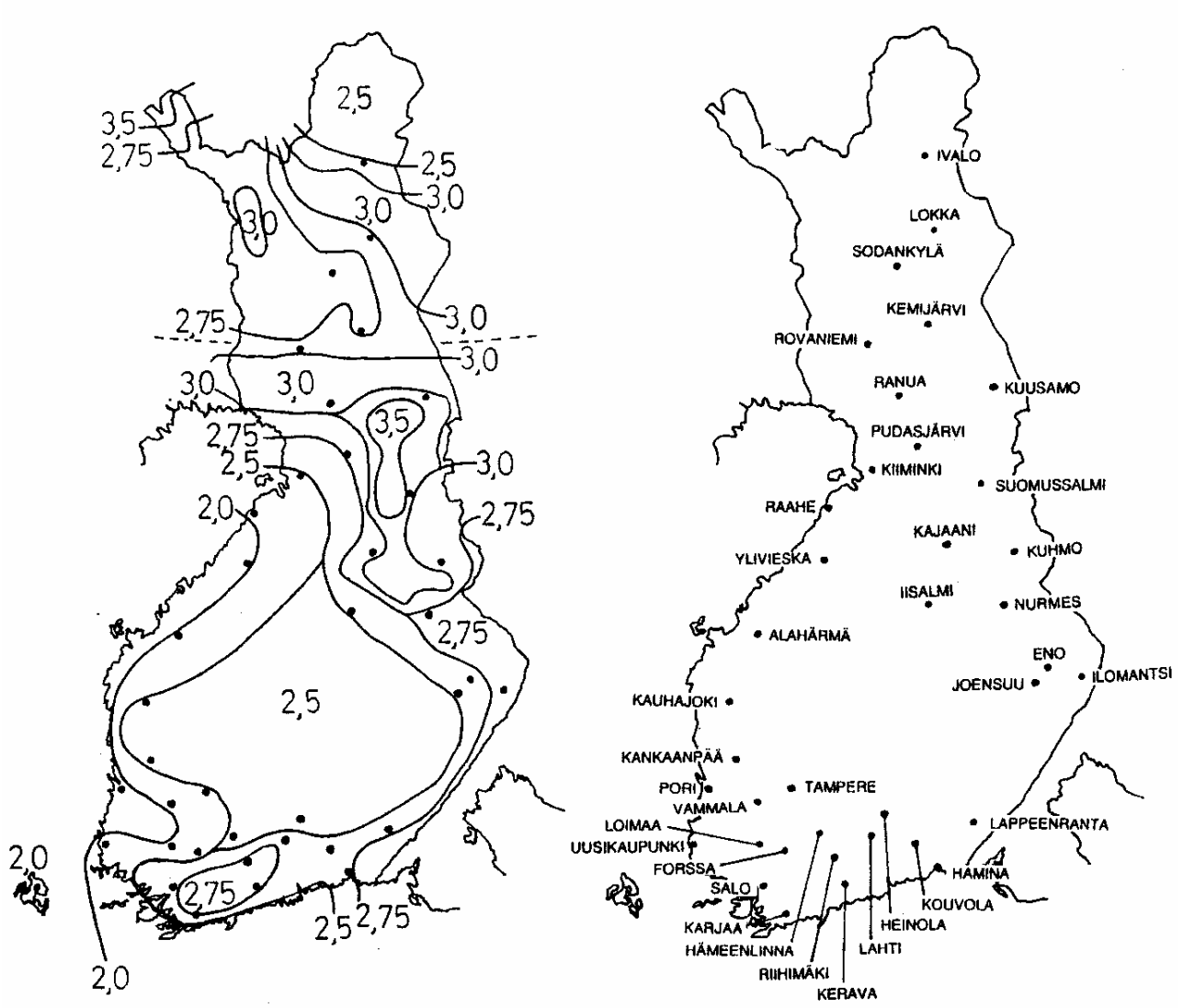

Figure 4.1 (FI): Snow loads on the ground in Finland. When the construction site is located in an area where the value is not constant, the intermediate values are obtained by linear interpolation in proportion to distances from the closest curves.

4.1(2)

In Finland no complementary guidance is given.

4.2 Other representative values

4.2(1)

The coefficients ψ_0, ψ_1 and ψ_2 are given in the National Annex for SFS-EN 1990:2002. They are copied in the table 4.1 (FI) below.

Table 4.1 (FI): Values of coefficients ψ for buildings

Snow load	ψ_0 *)	ψ_1	ψ_2
$s_k < 2{,}75$ kN/m^2	0,7	0,4	0,2
$s_k \geq 2{,}75$ kN/m^2	0,7	0,5	0,2
*) Outdoor locations and balconies $\psi_0 = 0$ combined with load classes A, B, F and G.			

4.3 Treatment of exceptional snow loads on the ground

4.3(1)

This clause does not apply to Finland according to clause 3.3(1).

5.2 Load arrangements

5.2(2)

Annex B is not used in Finland.

5.2(5)

No special guidance is given in Finland for the said load condition.

5.2(6)

No further complementary guidance is given for the said load condition.

5.2(7)

In Finland the values given in table 5.1 (FI) are used:

Table 5.1 (FI): Values of C_e for different topographies in Finland

Topography	C_e
Windswept [a]	0,8 *)
Normal [b]	1,0
Sheltered [c]	1,0

[a] Windswept topography: flat unobstructed areas exposed on all sides without, or little shelter afforded by terrain, higher construction works or trees.

b Normal topography: areas where there is no significant removal of snow by wind on construction work, because of terrain, other construction works or trees.

c Sheltered topography: areas in which the construction work being considered is considerably lower than the surrounding terrain or surrounded by high trees and/or surrounded by higher construction works.

*) However, for roofs with the smaller horizontal dimension more than 50 meters, the factor Ce is 1,0

5.2(8)

If the thermal insulation of the roof structure is insignificant, the coefficient C_t can be reduced on the basis of a more exact study. The snow load s_k shall however always be at least 0,5 kN/m^2.

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5.3.3 Pitched roofs

5.3.3(4)

Alternative drifting load arrangement is not given in Finland.

5.3.4 Multi-span roofs

5.3.4(3)

Annex B is not used in Finland.

5.3.4(4)

When the slope exceeds 60° value $\mu_2 = 1,6$ is used.

5.3.5 Cylindrical roofs

5.3.5(1)

NOTE 1
In Finland, the upper limit of the coefficient μ_3 is 2.0 in accordance with Fig. 5.5 of the standard.

NOTE 2
No special instructions concerning snow barriers are given in Finland.

5.3.5(3)

In Finland the load arrangement according to Figure 5.6 (FI) case (ii) is used.

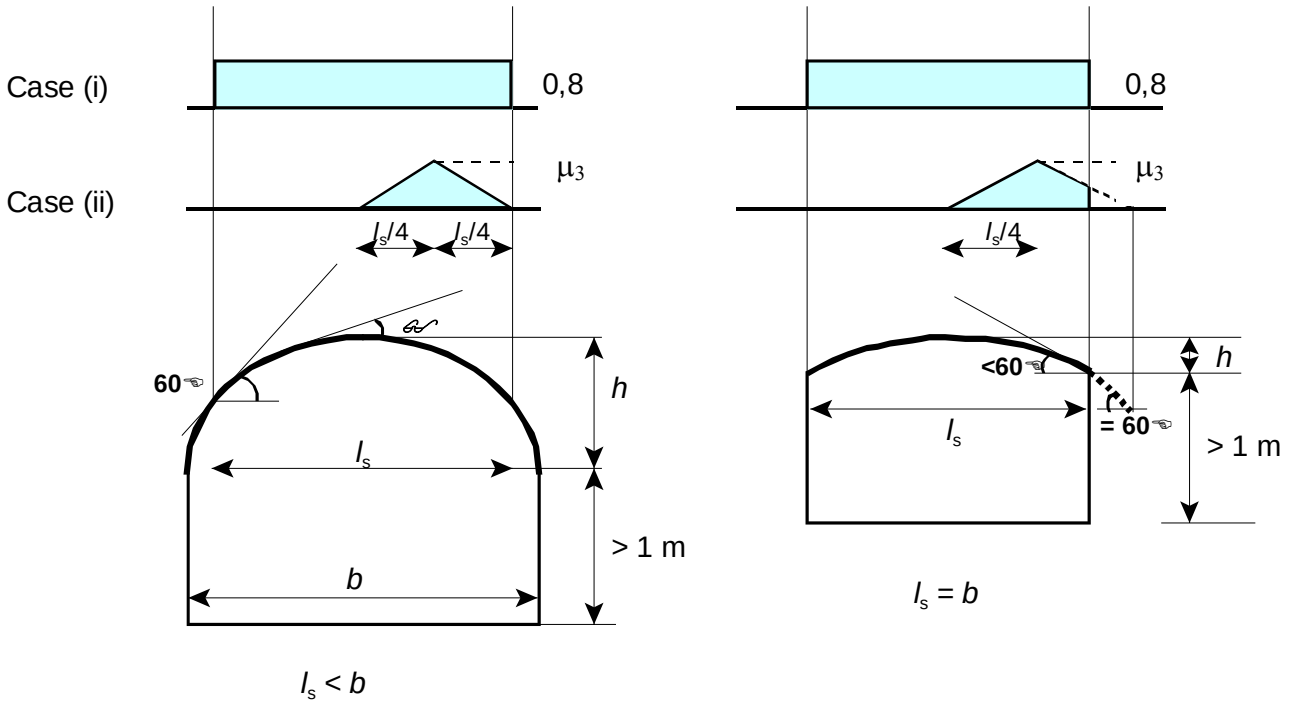

Figure 5.6 (FI): Snow load shape coefficients for cylindrical roof

5.3.6 Roof abutting and close to taller construction works

5.3.6(1)

In Finland the range for μ_w is:

$0,8 \leq \mu_w \leq 2,5$, if the area of the lower roof is ≥ 6 m^2

$0,8 \leq \mu_w \leq 1,5$, if the area of the lower roof is = 2 m^2

$\mu_w = 0,8$, if the area of the lower roof is ≤ 1 m^2

with intermediate upper values for factor μ_w obtained by linear interpolation when the area of the lower roof is < 6 m^2.

In Finland the restriction for l_s is 2 metres $\leq l_s \leq$ 6 metres.

5.3.6(3)

Annex B is not used in Finland.

6.2 Drifting at projections and obstructions

6.2(2)

In Finland the restriction for l_s is 2 metres $\leq l_s \leq$ 6 metres.

Annex B is not used in Finland.

6.3 Snow overhanging the edge of the roof

6.3(1)

This clause does not apply to Finland.

6.3(2)

This clause does not apply to Finland.

Annex A
Design situations and load arrangements to be used for different locations

In Finland only normal conditions according to clause 3.2(1) are applied. In persistent / transient design situations for undrifted and drifted snow the value $\mu_i C_e C_t s_k$ is used.

Cases B1, B2 and B3 for exceptional conditions are not used in Finland.

Annex B
Snow load shape coefficients for exceptional snow drift

Annex B is not used in Finland, because in Finland there are no exceptional situations meant in the Annex..

Annex C
European Ground Snow Load Maps

Annex C is not used in Finland.

Annex D
Adjustment of ground snow load according to return period

Annex D can be used in Finland.

Annex E
Bulk weight density of snow

Annex E can be used in Finland.