

COMPANY NAME		Calculation No.		
CALCULATION SHEET		CALCULATION NO.		
onlinestructuraldesign.com		Project No.		
		PROJECT NUMBER		
Project Title:	Project Name	Calc. By	Date	Rev.
Subject:	Snow load on pitched roofs (Eurocode 1)	Author	today	0
		Checked By	Date	
		Checker	today	

Snow load calculation

per EN 1991-1-3

Input	Output
Roof slope	Snow load on roof (kN / sqm)
Characteristic value of snow on ground	

- μ_i - snow load shape coefficient;
- C_e - exposure coefficient;
- C_t - thermal coefficient;
- s_k - characteristic value of snow load on the ground;

Roof type: Pitched roofs

$\alpha_1 = 36$ deg roof slope

$\alpha_2 = 15$ deg roof slope

Characteristic value of snow:

$s_k = 2$ kN/m²

The National Annex specifies the characteristic values to be used. To cover unusual local conditions the National Annex may additionally allow the client and the relevant authority to agree upon a different characteristic value from that specified for an individual project.

Exposure and thermal coefficients:

$C_e = 1$ Normal topography

$C_t = 1$

per EN 1991-1-3

Section 5.2 Table 5.1

The National Annex may give the values of C_e for different topographies.

per EN 1991-1-3

Section 5.2 (8)

Based on the thermal insulating properties of the material and the shape of the construction work, the use of a reduced C_t value may be permitted through the National Annex.

Roof shape coefficients:

Pitched roof:

$\mu_1(\alpha_1) = 0.640$

$\mu_1(\alpha_2) = 0.800$

per EN 1991-1-3

Section 5.2 Table 5.2

Load on roof (for the persistent/ transient design situation):

$s = \mu_i * C_e * C_t * s_k$

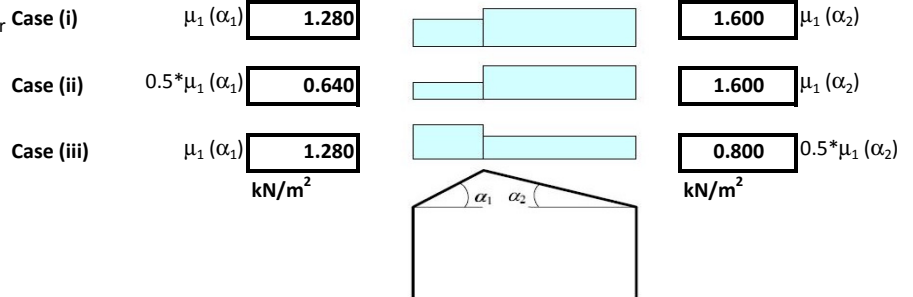
per EN 1991-1-3

Section 5.2.3 (a) eq. 5.1

*The values given in Table 5.2 apply when the snow is not prevented from sliding off the roof.

Snow loads on roof:

Where snow fences or other obstructions exist or where the lower edge of the roof is terminated with a parapet, then the snow load shape coefficient should not be reduced below 0.8.



References:

EN 1991-1-3:2003 - Eurocode 1: Actions on structures - Part 1-3: General actions - Snow loads