

COMPANY NAME		Calculation No.		
CALCULATION SHEET		CALCULATION NO.		
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Project Title: Project Name		PROJECT NUMBER		
Subject/Feature: Snow load calculation on multi-span roofs		Calc. By	Date	Rev.
		Author	Date	0
		Checked By	Date	
		Checker	Date	

Snow load calculation on multispan roofs

per EN 1992-1-3

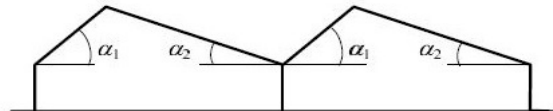
Input	Output
Roof slopes	Snow load on roof (kN / sqm)
Characteristic value of snow on ground	

- 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: Multi-span roofs

$\alpha_1 = 15$ deg roof slope

$\alpha_2 = 15$ deg roof slope



Characteristic value of snow:

$s_k = 2.5$ kN/sqm

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:

$C_e = 0.8$ Windswept topography

$C_t = 1$

per EN 1992-1-3
Section 5.2 Table 5.1

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

per EN 1992-1-3

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:

Multi-span roof:

$\mu_1(\alpha_1) = 0.800$

$\mu_1(\alpha_2) = 0.800$

$\mu_2(\alpha_m) = 1.200$

per EN 1992-1-3
Section 5.2 Table 5.2

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

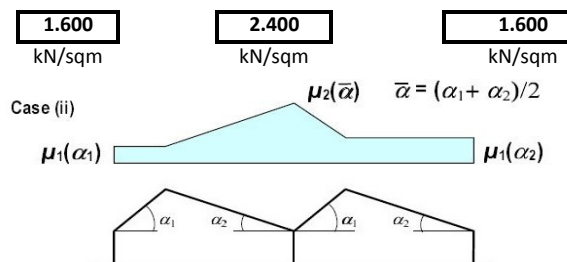
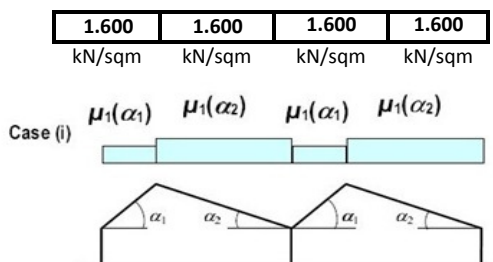
Load on roof (for the persistent/ transient design situation):

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

per EN 1992-1-3
Section 5.2.3 (a) eq. 5.1

Special consideration should be given to the snow load shape coefficients to be used where the roof has an external geometry which may lead to increases in snow load, that are considered significant in comparison with that of a roof with linear profile

Snow load cases:



References:

EN 1992-1-3:2003 - Eurocode 1: Actions on structures - Part 1-3: General actions - Snow loads