

SNOWGUARDS CALCULATION

SNOW RETENTION SYSTEM

Snow guards must be installed along the entire length of the roof:

- Even distribution of snow load over the roof
- Protection against snow falling along the entire length of the roof

The maximum distance between the brackets of snow guards is 1.2 m.

Snow guards withstand a snow load of 500 kg/m (5 kN/m), each bracket can withstand a load of 300 kg (based on static tests according to Swedish standard SS 831367).

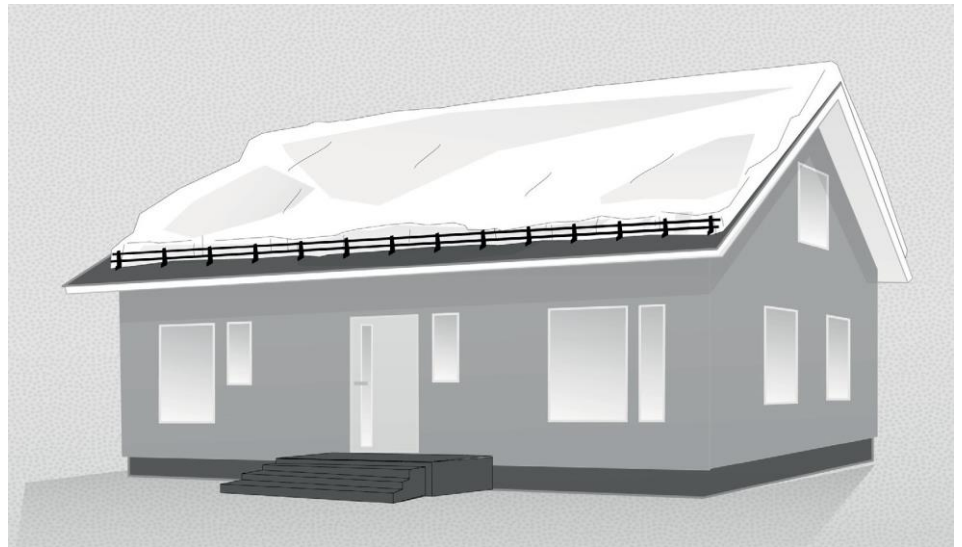
Snow retention system is installed above the load-bearing wall or higher. When installing snow retention close to the eaves, it is important to make sure that the structure can withstand the possible load.



Snow guards are installed on each slope of multi-level roofs

CORRECT INSTALLATION OF THE SNOW RETENTION SYSTEM

Protection along the full roof length



WE DO NOT RECOMMEND USING SHORT LINES OF SNOW GUARDS

Excessive snow load can lead to serious damage to the roof structure and injury!

With this kind of installation, brackets load can exceed the calculated indicators by more than 4 times (up to 2000 kg).

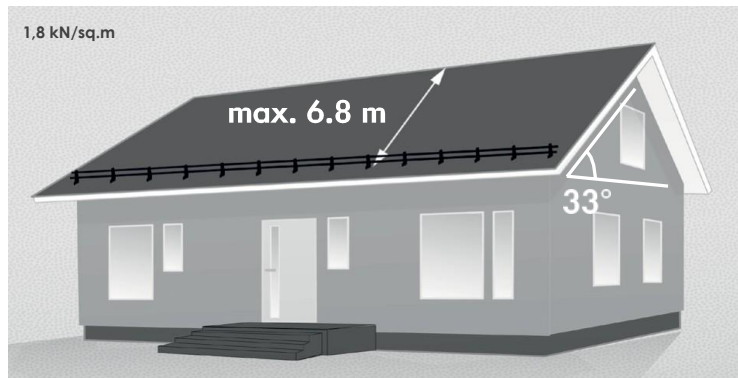


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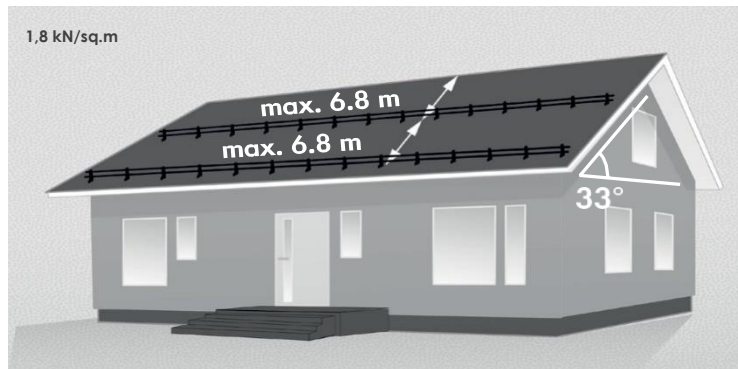
According to the estimates in the table, long slopes may require installation of several rows of snow guards.

Calculation example:














The roof slope is 1:1,5 (~33°)
Installation of one row of snow guards, if the distance from the snow guard to the ridge does not exceed **6.8 m**



If the roof slope is longer, a second row of snow guards is installed at the level of half the slope length, **but not more than 6.8 m between the lines of snow retention system.**



Distance to snow retention system at the maximum 1.2m distance between brackets

Roof slope, /			Snow load kN/sq.m. (~100 kg/sq.m.)							
angle	slope		1	1.5	2	2.5	3	3.5	4.5	5.5
6°	~1:10		60 m	40 m	30 m	24 m	20 m	17 m	13 m	11 m
10°	~1:5		37 m	24 m	18 m	15 m	12 m	10 m	8.1 m	6.6 m
14°	1:4		27 m	18 m	13 m	11 m	8.9 m	7.6 m	5.9 m	4.8 m
18°	1:3		21 m	14 m	11 m	8.5 m	7.1 m	6.1 m	4.7 m	3.9 m
23°	~1:2.5		17 m	12 m	8.7 m	7.0 m	5.8 m	5.0 m	3.9 m	3.2 m
27°	1:2		15 m	10 m	7.7 m	6.2 m	5.2 m	4.4 m	3.4 m	2.8 m
33°	1:1.5		14 m	9.1 m	6.8 m	5.5 m	4.6 m	3.9 m	3 m	2.5 m
38°			13 m	8.6 m	6.4 m	5.2 m	4.3 m	3.7 m	2.9 m	2.3 m
42°			13 m	8.4 m	6.3 m	5.0 m	4.2 m	3.6 m	2.8 m	2.3 m
45°	1:1		13 m	8.3 m	6.3 m	5.0 m	4.2 m	3.6 m	2.8 m	2.3 m
50°			13 m	8.5 m	6.3 m	5.1 m	4.2 m	3.6 m	2.8 m	2.3 m
55°			13 m	8.9 m	6.7 m	5.3 m	4.4 m	3.8 m	3.0 m	2.4 m
60°			14 m	9.6 m	7.2 m	5.8 m	4.8 m	4.1 m	3.2 m	2.6 m

Snow guards are manufactured according to SS 831335: 2014 and are tested with a snow load of 5 kN/m

If the actual snow load on the roof exceeds the calculated values, you should additionally remove the excessive snow.