

Ruukki Roof sensor

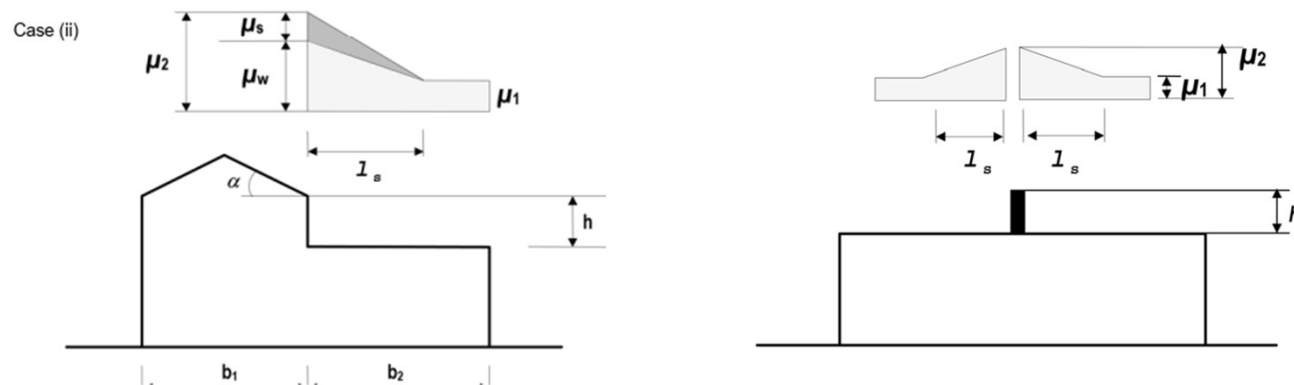
Poimu Designer's guide

How to define sensors in Poimu program

1. Make normal Poimu roof calculation
2. Define number and location of sensors
3. Calculate sensor calibration values for installer
4. Print Poimu report
+
5. Print whole roof drawing with sensor locations

Number of sensors and locations

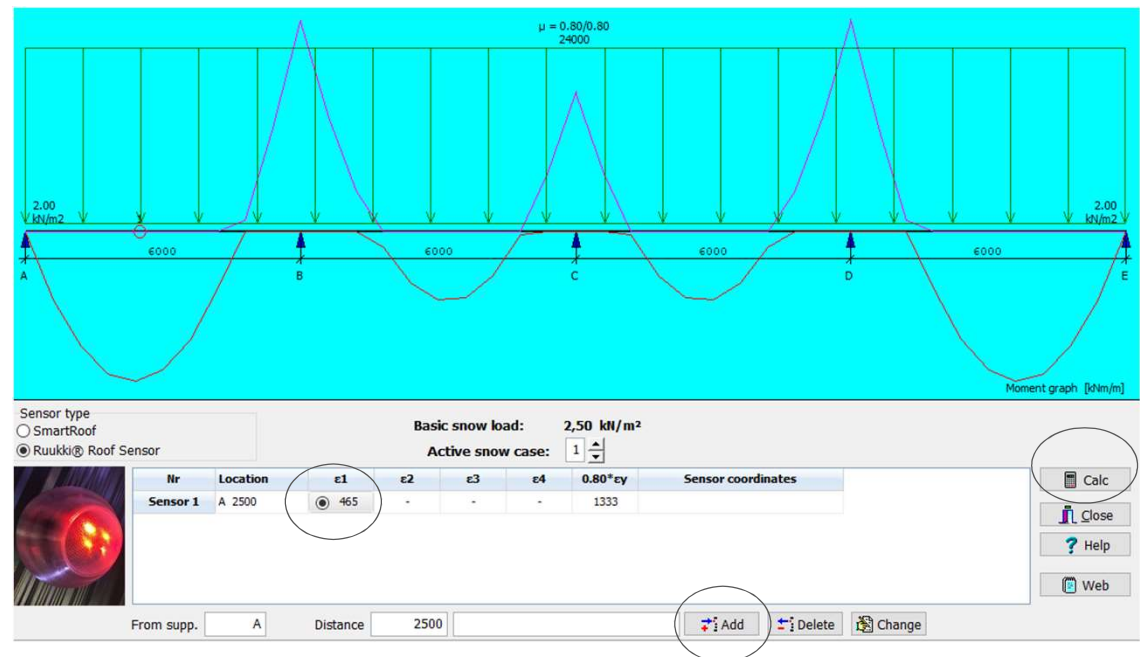
- Number of sensors is depending on the size and complexity of the roof
- Consider especially drifting at projections and obstructions
- At least one sensor should be located on the normal snow load area
- One package includes 2 sensors, so 4 is normally enough even for large roofs



Sensors-tab in Poimu

Example 1: One snow load case (equally distributed) calculated

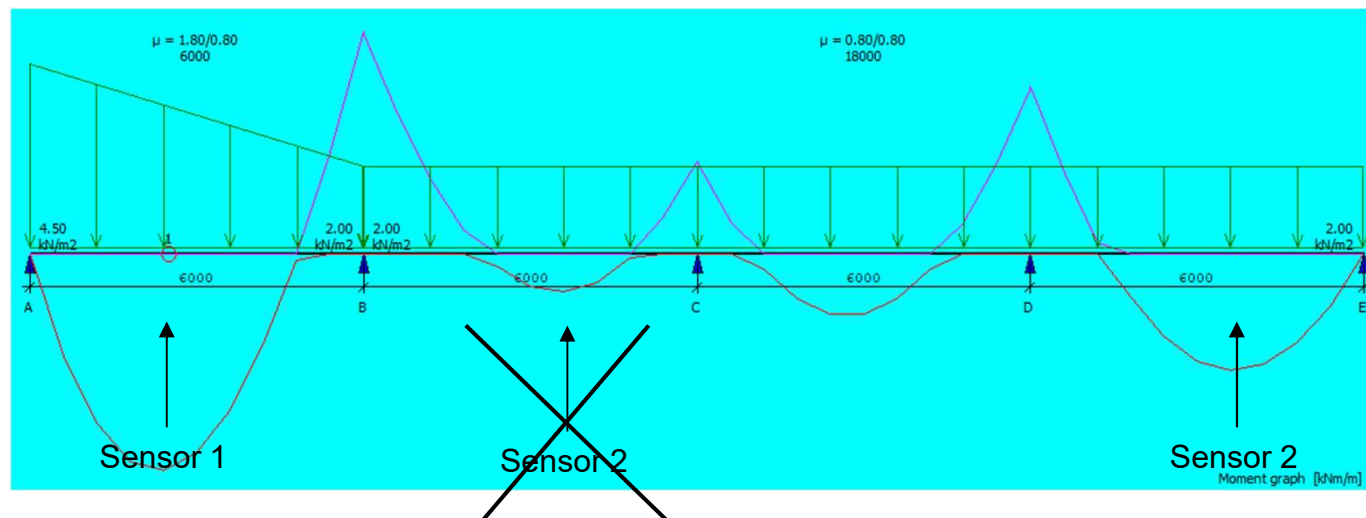
- Make normal dimensioning first
 - Sensor calculation is found in “Dimensioning” tab
- 1) “Add” sensors from the bottom : Add Sensor near the bending moment 0-value
 - 2) ”Calc” button in the right
 - 3) ϵ –values for calibration of roof sensor system: Take value for from $\epsilon 1$ –column = 465



Sensors-tab in Poimu

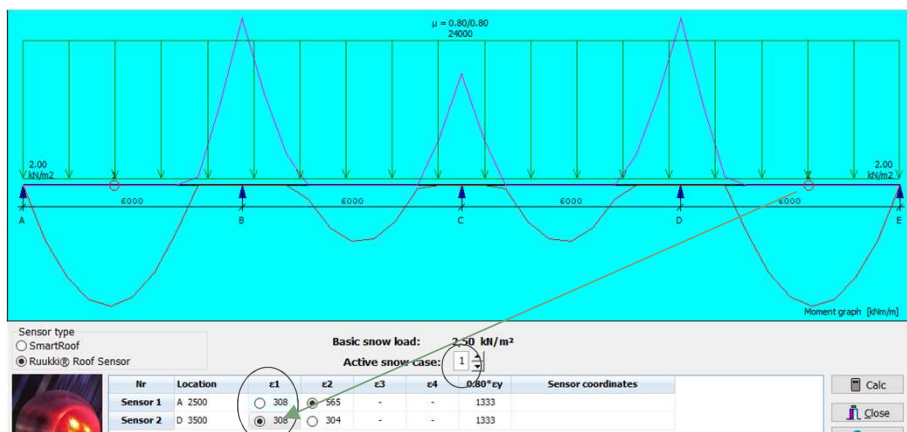
Example 2: One drifted snow load case calculated

- It is recommended that in drifted snow roofs, one sensor is located in the drifted snow load area and other sensors far enough so that drifted area does not have “positive” influence on the adjacent span area strain values

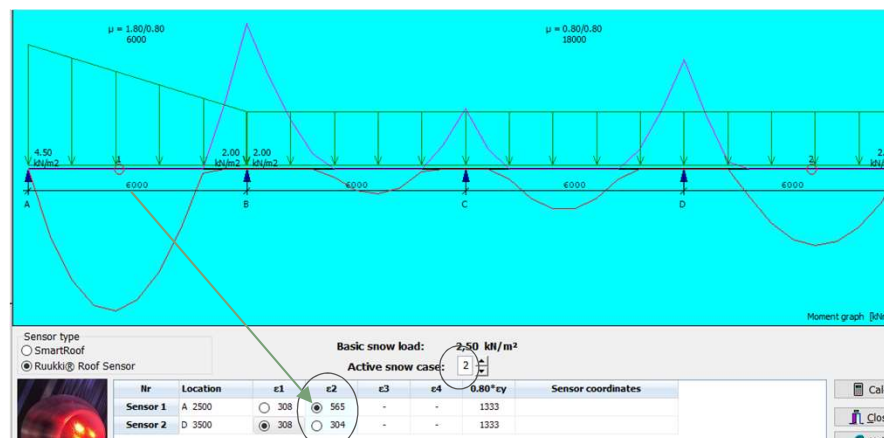


Sensors-tab in Poimu

Example 3: Two snow load cases calculated (equal + drifted)



Load case 1
 ϵ_1



Load case 2
 ϵ_2

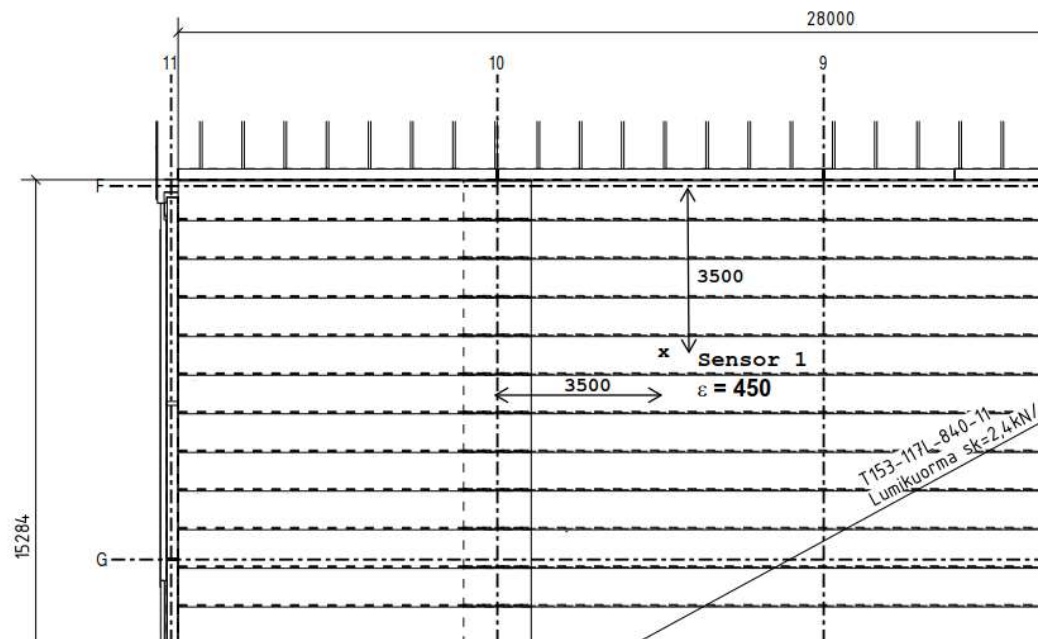
If you have several snow load cases in one calculation, remember to choose relevant ϵ -values linked to critical snow load case (You can change relevant case in picture by changing “Active snow case”)

In example

- Sensor 1 in drifted snow area (snow case 2): => Choose ϵ_2
- Sensor 2, for equal snow area (snow case 1): => Choose ϵ_1
 - In this case no remarkable difference for Sensor 2, because drift load is quite far ($\epsilon_1 = 308$ and $\epsilon_2 = 304$)

Print-outs

- Sensor information will be printed in the Poimu-report
 - snow load cases
 - sensor locations in sheet length
 - calibration values ($\varepsilon_1, \varepsilon_2, \varepsilon_3, \dots$) needed in the installation
- Furthermore, Poimu-reports should be annexed with floor plan with sensor location information (preferable with calibration values or reference to relevant Poimu-report)



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