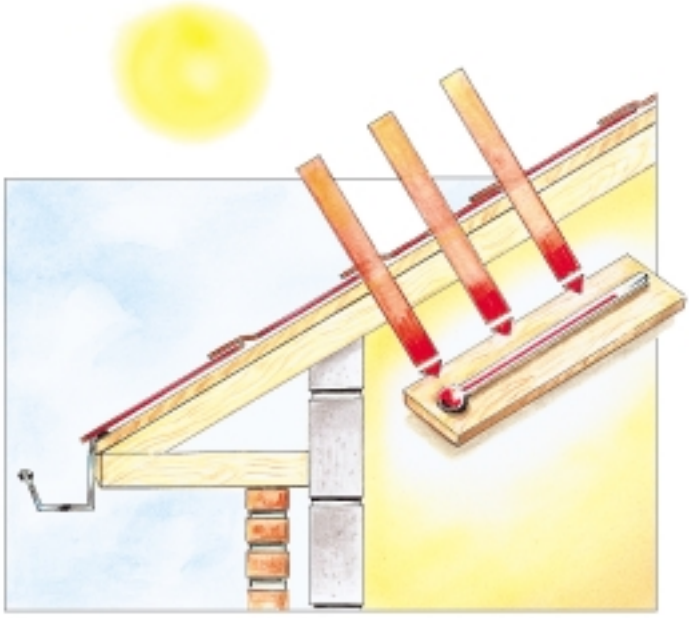
VENTILATION

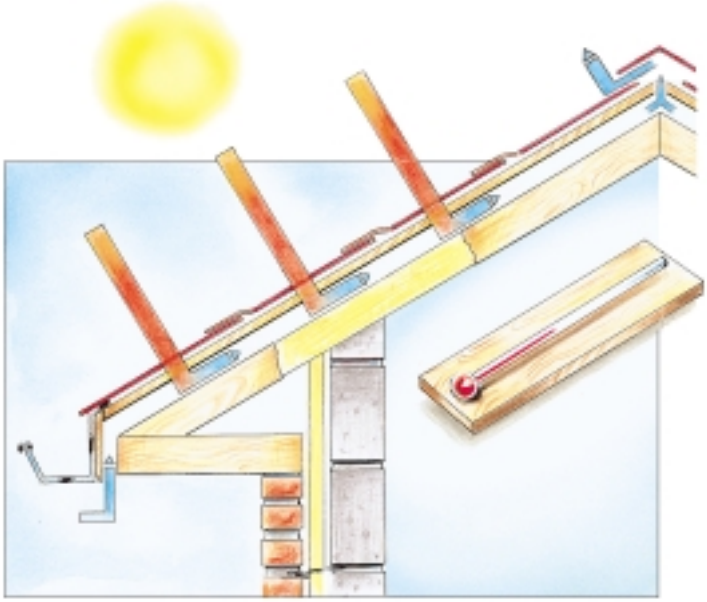
A GUIDE TO SMART ROOFING

Extend the life of your roof
Increase your living comfort
Regulate the moisture in your roof



Unventilated: high temperature inside.

Without air gap between insulation and roof deck: condensation forms and the roof structure is damaged.



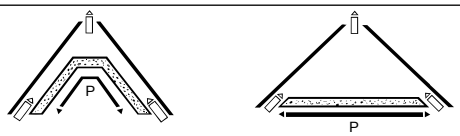
Ventilated: lower temperature inside.

With air gap between insulation and roof deck: air escapes via ridge vents, leaving the roof structure unaffected.

CALCULATING THE CROSS-SECTIONAL AREA OF THE VENT OPENINGS

The air gap between the insulation and the roof deck must be 4 to 6 cm. Air should flow in from the bottom of the roof (eaves) and out through the top of the roof (ridge). The air flow between the eaves and ridge vents must be unobstructed (by insulation or roof beams) to ensure cross-flow ventilation.

The total required cross sectional area (CSA) of vent openings is a function of the insulated roof area (P) and the slope of the roof.

SAMPLE ROOF STRUCTURES 	
Roof slope	Required CSA of vent openings
15° - 40°	P÷300
41° - 85°	P÷600
Ventilation should be equally divided among the number of vents at eaves and ridges.	

Example: P = 70m²
Roof slope = 35°
CSA vent = 322 cm²

Total required CSA of vent openings:
140÷600 = 0. 233 m² = 2330 cm²
Minimum number of vents required over total roof:
2330/322 = 7
Number of vents at ridge:
7÷2 = 3.5 ➞ 4
Number of vents at eaves:
7÷2 = 3.5 ➞ 4

NOTE: **Roofs with vapor barriers need 40% less ventilation.**
In certain regions (mountainous areas, the coast) special building regulations may apply.