



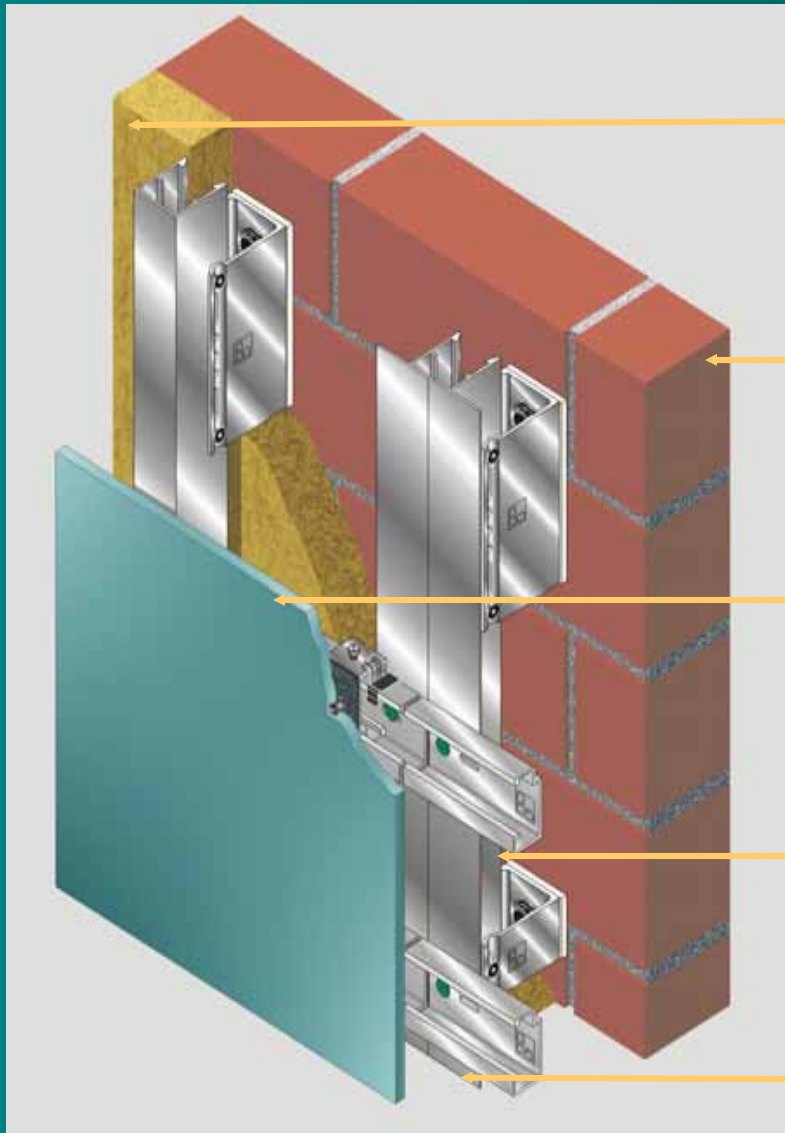
# Ventilated Facades

Optimal building physics  
and safety

KERATEK 10/12/ 2004



A ventilated „rainscreen“ facade system consists in:



air gap min. 20 mm

wall

insulation

subconstruction

cladding

# The ventilated facade system

On new buildings as well as on existing buildings the ventilated facade system is the system that fulfils all the physical construction and design requirements for a facade:

- The entire construction is weather-proof and non ageing.

Wall cladding enhances the safety and longevity of a building.

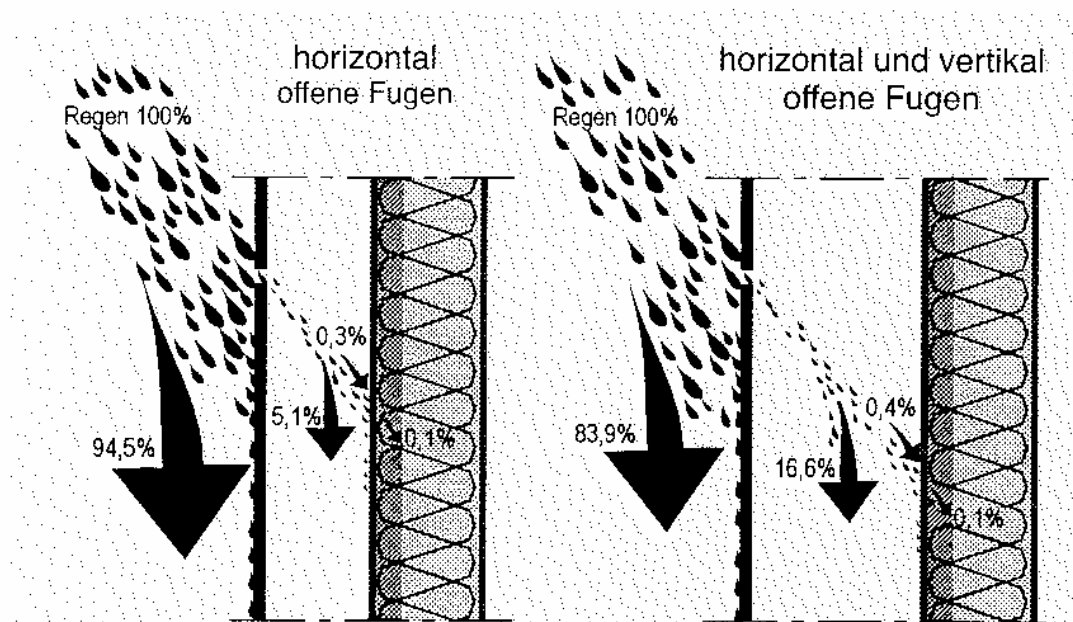
- Consistent separation between outer cladding and insulation and structural framework protects the building from weathering effects.



... and according to DIN 4108 in the highest rain protection group (joints  $\leq 10$  mm)

Bild 5

Ergebnisse von Schlagregenuntersuchungen an vorgehängten hinterlüfteten Fassaden

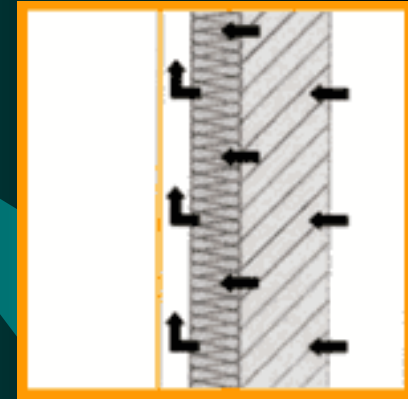


Plattenformat 600 x 600 mm,  
horizontal offene Fugen 8 mm,  
Hinterlüftungsspalt 60 mm

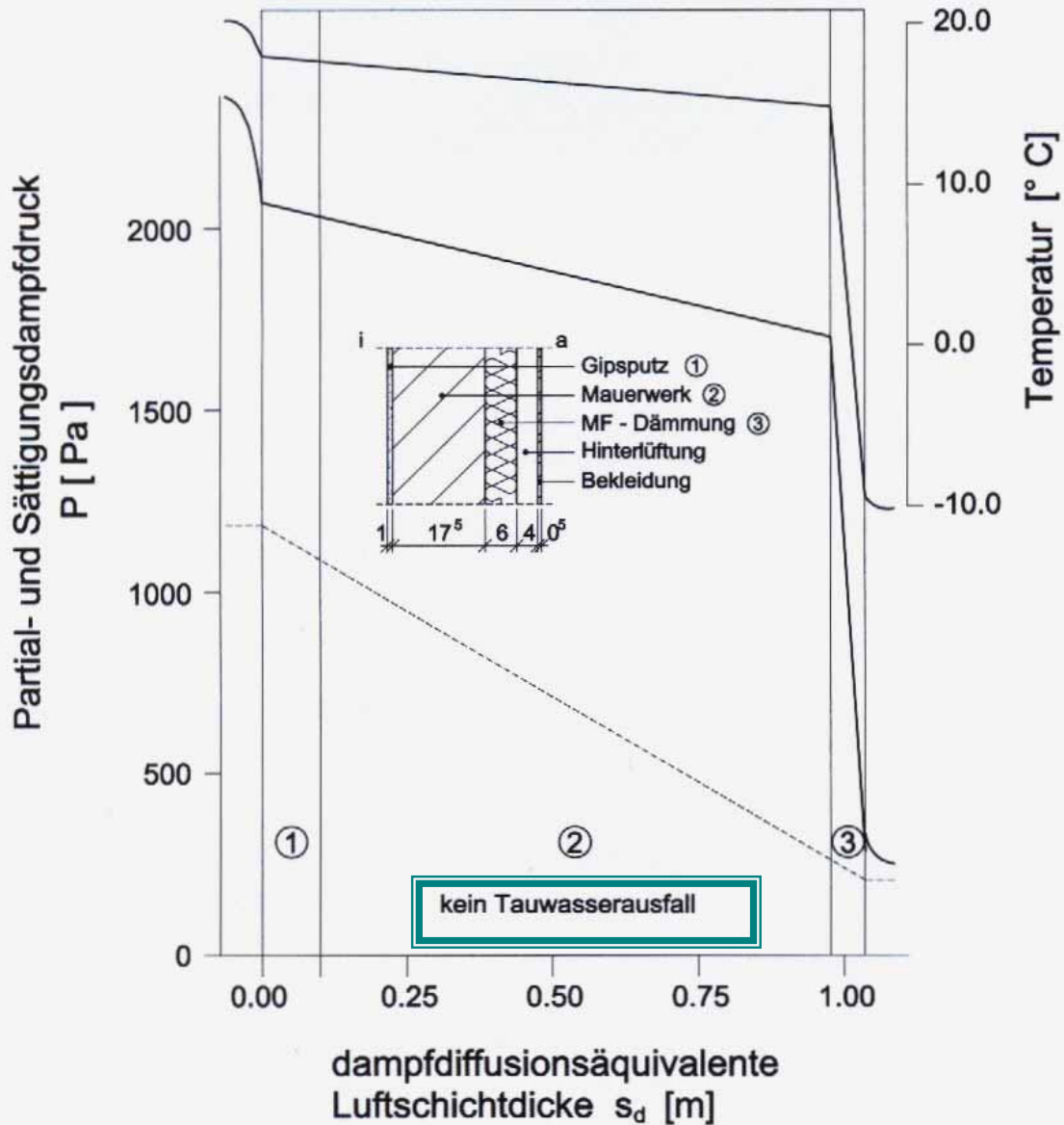
Plattenformat 600 x 600 mm,  
horizontal und vertikal offene  
Fugen 8 mm,  
Hinterlüftungsspalt 100 mm

- Fassadenbekleidung
- Hinterlüftungsraum
- Glasvlies auf der Sichtseite der Mineralwolle-Dämmung, 60 mm
- Vorderer Bereich der Mineralwolle-Dämmung von ca. 0-15 mm

- The air gap prevents heat accumulation and damage due to moisture.
- Load-bearing outside walls and the insulation in particular remain dry and in proper function.
- The overall construction continues to allow diffusion of moisture.



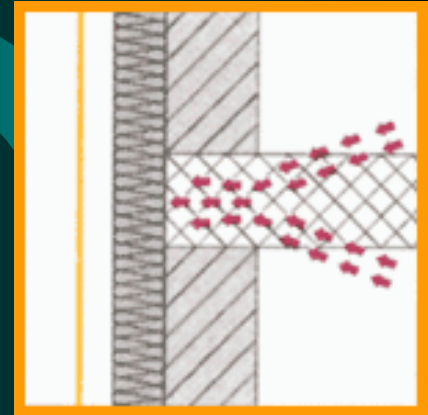
# ... no dew water in the load bearing wall



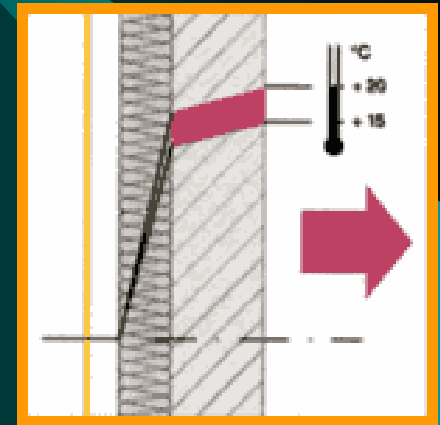
- 1 plastering
- 2 brickwork
- 3 mineral insulation
- air gap
- cladding

→ No dew water

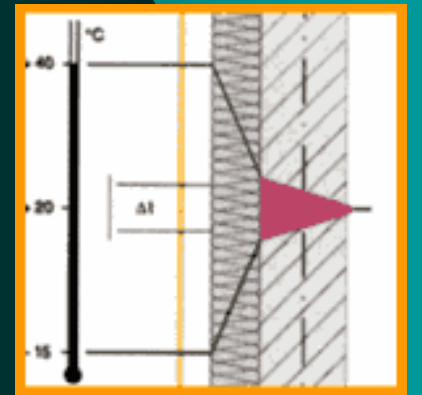
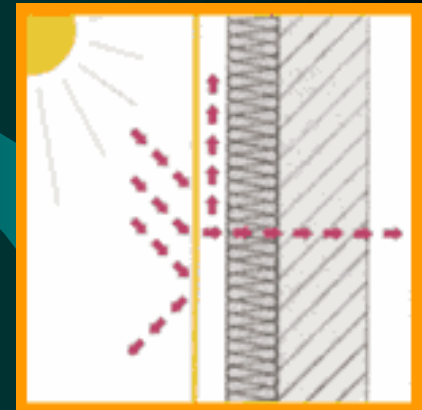
- Formation of thermal bridges will be minimised.



- The insulation ensures maximum heat storage in the inside of the building.
- Comfortable room climate is achieved.



- Cooling and heat losses in winter as well as heating up in summer will be prevented.
- The suspended rear ventilated facade shields the building from strong thermal loading.



In addition:

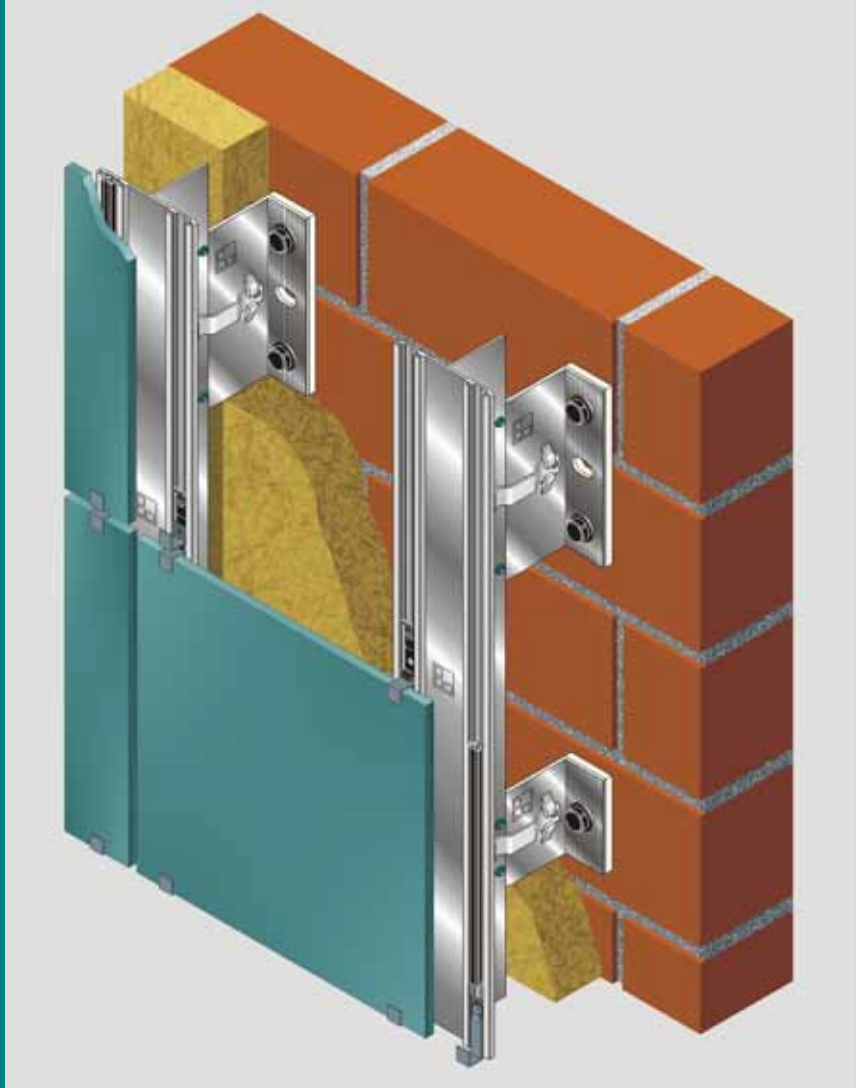
- especially long-lived
- expenses for maintenance and care are extremely low.
- excellent sound absorbing qualities.
- Any thickness of insulation material is possible.

- tolerant of building imperfections and indeed evens them out.
- trouble-free damage repair without trace.
- Mounting is independent of weather factors

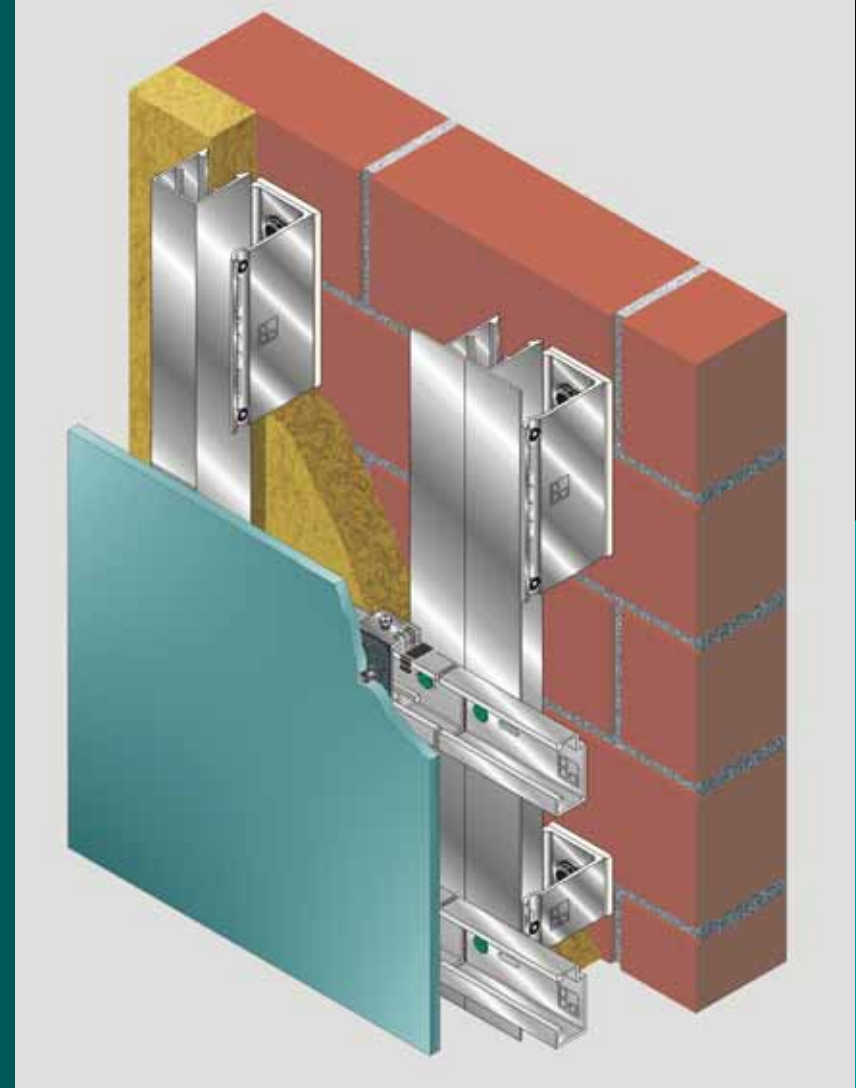
- Fascinating and original architectural effects can be obtained by utilising widely varying cladding material, surface structures, colours, formats, patterns, joint designs, structural sections and manifold attachment systems.

for example:

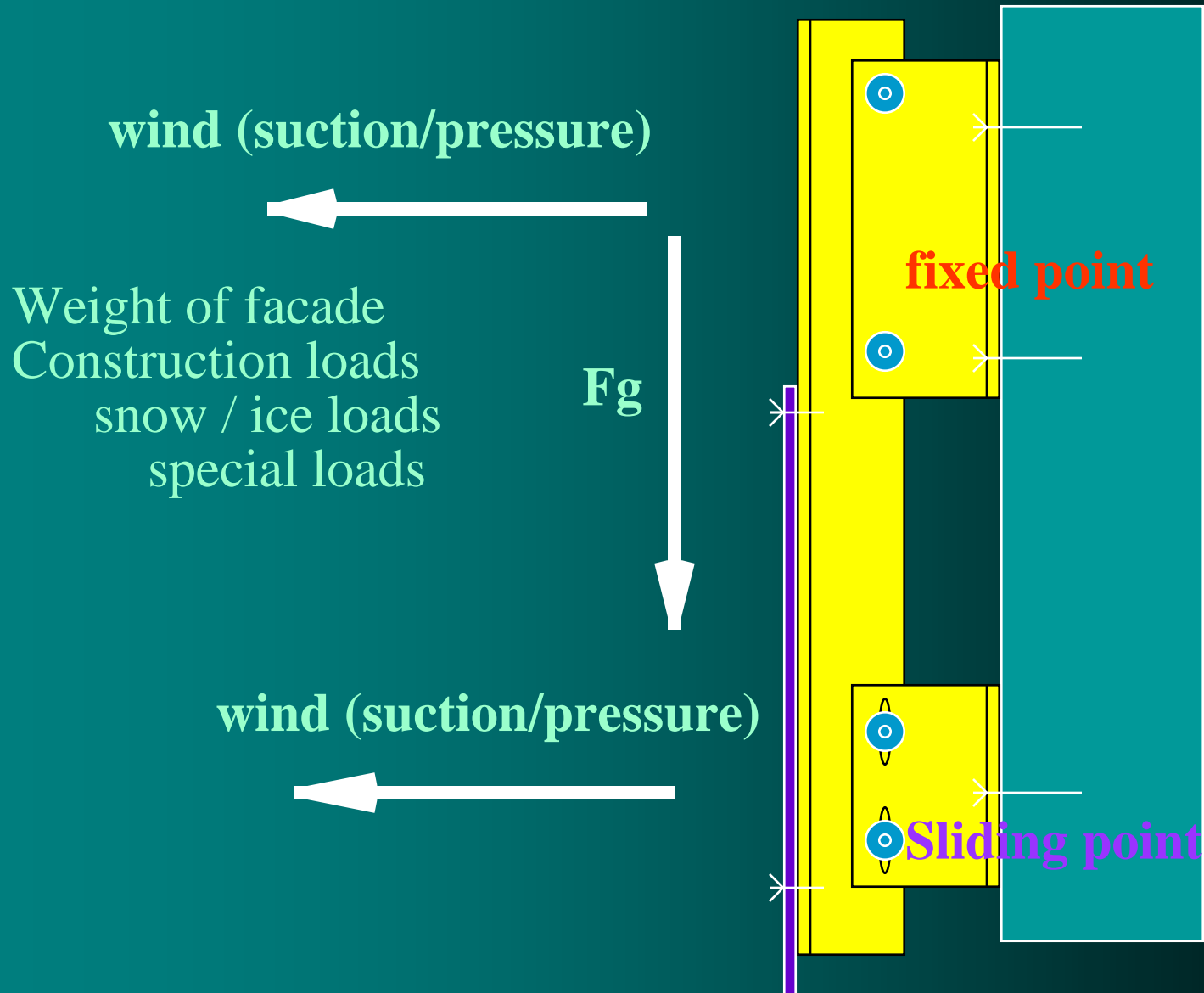
# visible fixing



# hidden fixing



# *Secure and stress-free ventilated system:*



avoiding stresses due to  
temperature dilatation and  
respecting the main loads:



**weight of facade**

**approx. 90 – 200 N/m<sup>2</sup>**



**Wind load up to**

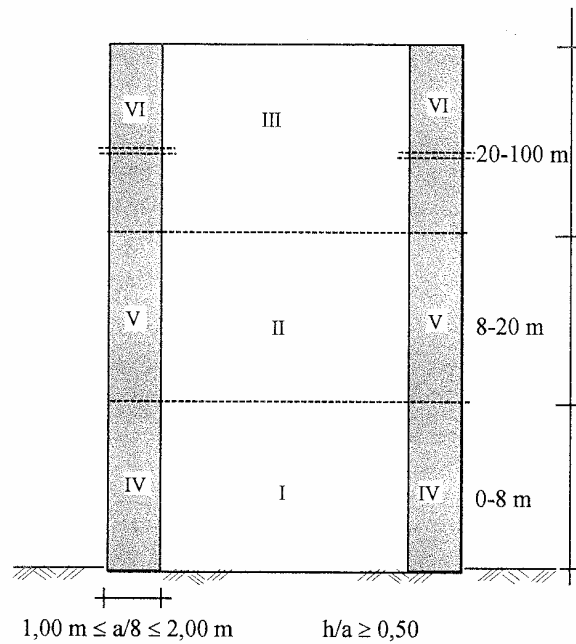
**2200 N/m<sup>2</sup>**



**2200 N/m<sup>2</sup>**

### 1. Windloads according to DIN 1055, part 4

normal area  
 edge area



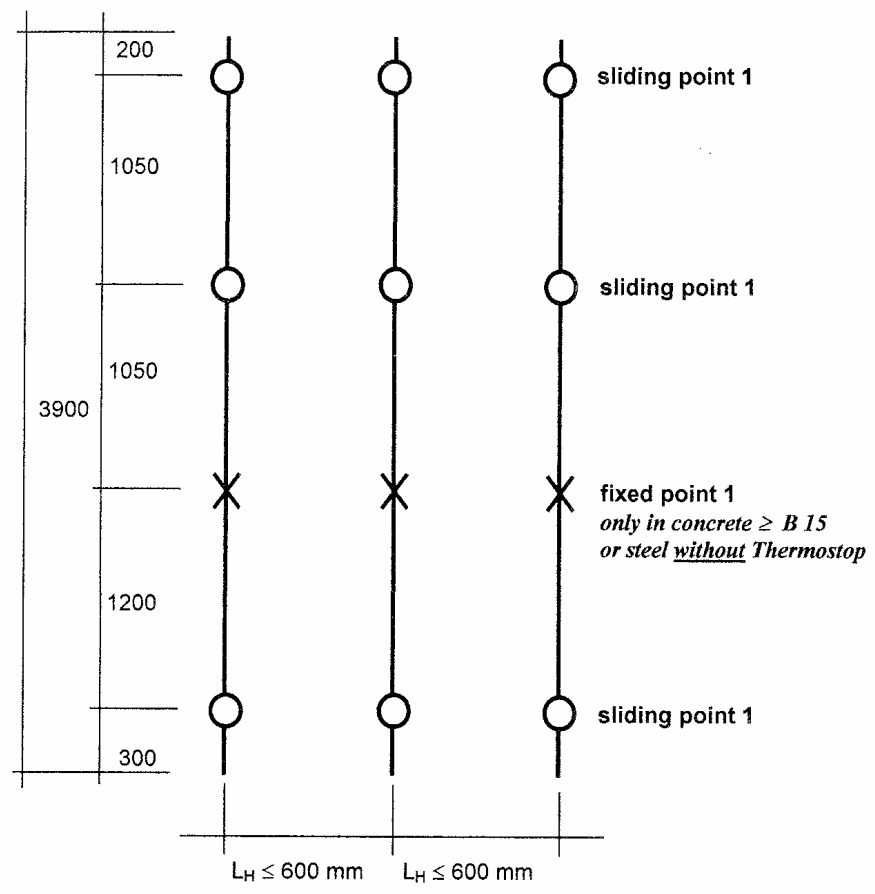
area	pressure [kN/m <sup>2</sup> ]	eff. pressure [kN/m <sup>2</sup> ]	suction [kN/m <sup>2</sup> ]
0-8 m	normal area I	+ 0,50	- 0,35
	edge area IV	+ 0,50	- 1,00
8-20 m	normal area II	+ 0,80	- 0,56
	edge area V	+ 0,80	- 1,60
20-100 m	normal area III	+ 1,10	- 0,77
	edge area VI	+ 1,10	- 2,20

# A static proves all system parts.

## 10.2 Supporting profile system:

### 10.2.1 Length of profiles $L \leq 3,90$ m

a) normal area  $< 100$  m (only in normal area; edge area: see profiles  $L = 2,1$  m +  $1,8$  m):





## Summary:

ventilated facade systems offer a wide range of physical, technical and economic advantages. All building types can be styled in an individual look .



**Thank you for your  
attention**