Technical Data Sheet
Super Pasive Wall

TheSuperPassive Systemis a premier building envelopesolution engineeredto meet the rigorous requirements of the Passivhausstandard. Itemploysa'fabricfirst'designphilosophy, prioritizing the performance of the building envelope to create anexceptionallyenergy-efficient and comfortable home.

The system's advanced, multi-layered insulation strategy is designed to maintain a stable internal temperature year-round, potentially reducing energy consumption for heating and cooling by up to 75% compared to conventional construction.

This comprehensive approach virtually eliminates thermal bridging, draughts, and cold spots. The system's hygrothermal properties are optimized to prevent interstitial condensation and mould growth, fostering a healthier indoor living environment.

The Super Passive System delivers superior, lasting performance in both occupant comfort and long-term sustainability.
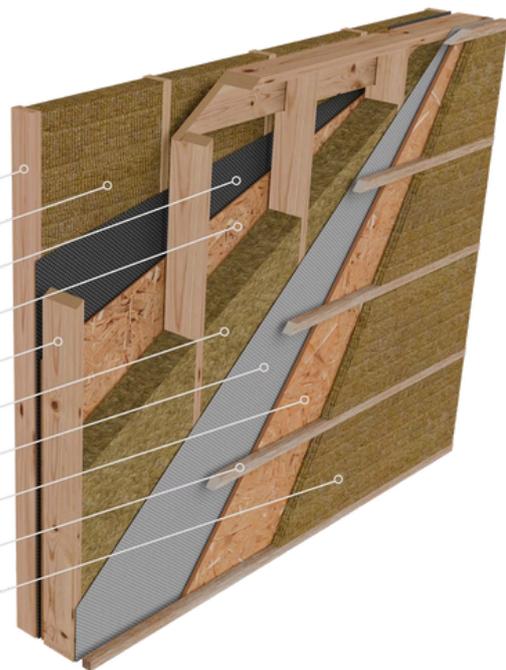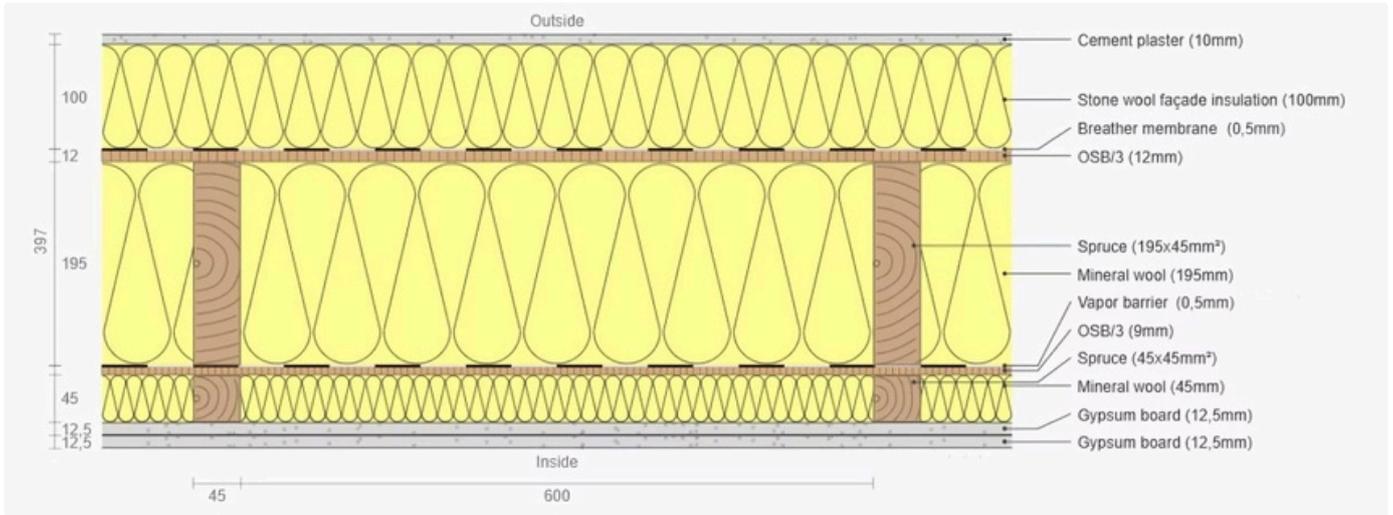
Wall Assembly Composition

SENMAR

SUPER-PASSIVE PRESET / Thickness: 382mm

1. Vertical Timber Battens	120	mm
2. External Insulation / Hard Mineral Wool	100	mm
3. Wind-Moisture / Diffusion Membrane	0.2	mm
4. External OSB Plate	12	mm
5. Timber Frame Structure	195	mm
6. Primary Insulation / Soft Mineral Wool	200	mm
7. Vapor Barrier / Diffusion Membrane	0.2	mm
8. Internal OSB Plate	9	mm
9. Horizontal Timber Lathing	45	mm
10. Internal Insulation / Soft Mineral Wool	50	mm

CONSTRUCTION SYSTEM / Walls Presets

Thermal Performance Metrics

Outside

100	Cement plaster (10mm)
12	Stone wool façade insulation (100mm)
	Breather membrane (0,5mm)
	OSB/3 (12mm)
397 / 195	Spruce (195x45mm²)
	Mineral wool (195mm)
	Vapor barrier (0,5mm)
	OSB/3 (9mm)
	Spruce (45x45mm²)
45	Mineral wool (45mm)
12,5 / 12,5	Gypsum board (12,5mm)
	Gypsum board (12,5mm)

Inside

45 | 600

U-Value: Thermal Transmittance

U-value measures how well a building component (like a wall, roof, or window) prevents heat from passing through it. It indicates the rate of heat transfer through a material or assembly for a given temperature difference. A lower U-value signifies better insulation, meaning less heat loss or gain.

U-Value: 0,114 W/(m²K)

Contribution to the greenhouse effect:

insufficient — excellent

Condensate: 100 kg/m²

Moisture content of wood: + 100,0%

Drying time: -

insufficient — excellent

Thickness: 39,7 cm
Weight: 72 kg/m²

Interior surface 19,0ºC (53%)

Drying reserve: 339 g/m²a

insufficient — excellent

Temp. amplitude damping (1/TAV): 52,9

Phase shift: 14h

Heat storage capacity: 40 kJ/m²K

insufficient — excellent

R-Value: Thermal Resistance

R-value measures how well a material resists heat flow. A higher R-value indicates better insulation, meaning the material is more effective at preventing heat from passing through it. This is crucial for building insulation, where it helps to keep homes warmer in the winter and cooler in the summer, reducing energy consumption and costs.

R-Value: 8,615 m²K/W

Contribution to the greenhouse effect:

insufficient — excellent

Condensate: 100 kg/m²

Moisture content of wood: + 100,0%

Drying time: -

insufficient — excellent

Thickness: 39,7 cm
Weight: 72 kg/m²

Interior surface 19,0ºC (53%)

Drying reserve: 339 g/m²a

insufficient — excellent

Temp. amplitude damping (1/TAV): 52,9

Phase shift: 14h
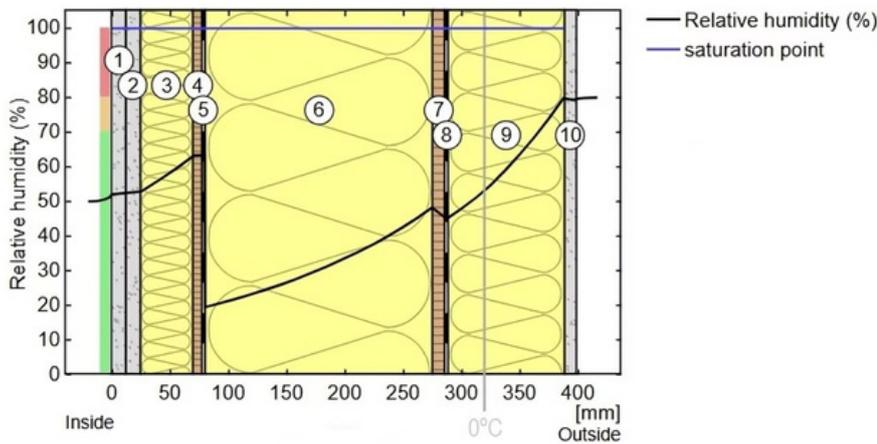
Heat storage capacity: 40 kJ/m²K

insufficient — excellent

Hygrothermal Analysis
Relative Humidity & Moisture Control

Drying reserve Drying reserve according

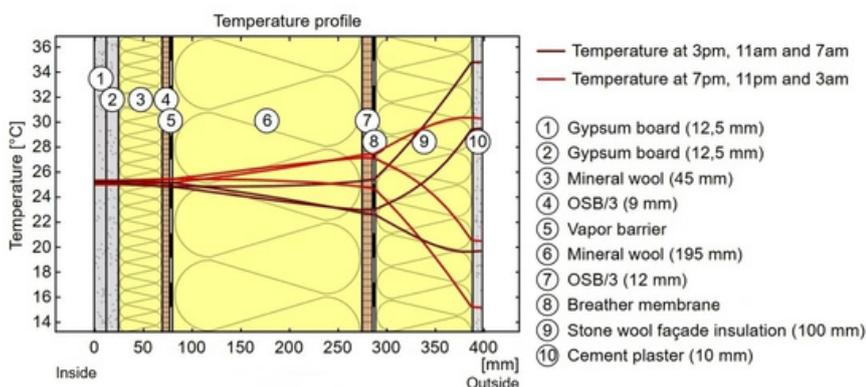to DIN 4108-3:2018: **339 g/(m²a)**
At least required by DIN 68800-2: **100 g/(m²a)**
Mould protection The temperature of

the inside surface is
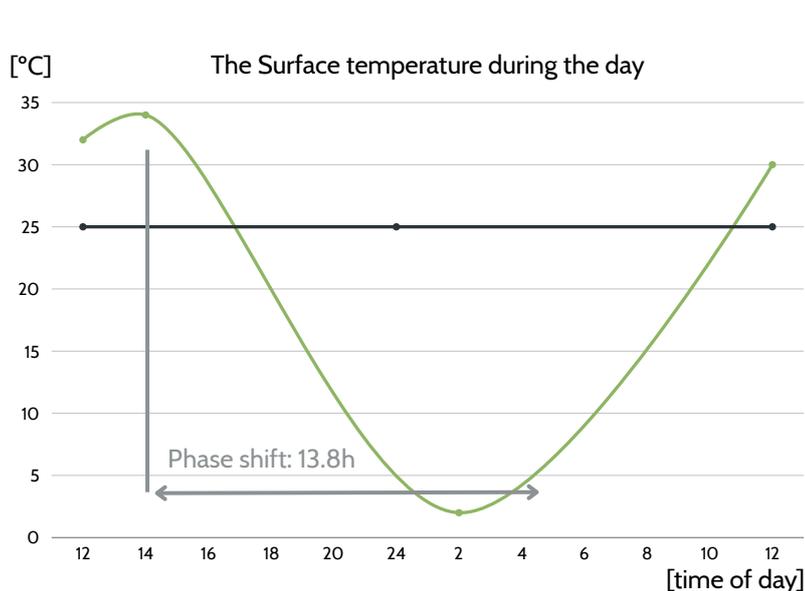19,0 °C leading to a relative humidity on the surface of 53 %.
Mould formation **is not expected** under these conditions.

Temperature & Condensation Risk

The following results are properties of the tested component alone and do not make any statement about the heat protection of the entire room.

Surface Temperature Analysis

- phase shift: **13,8 h**
- Heat storage capacity (whole component): **83 kJ/m²K**
- Amplitude attenuation: **52,9**
- Thermal capacity of inner layers: **40 kJ/m²K**
- TAD: **0,019**