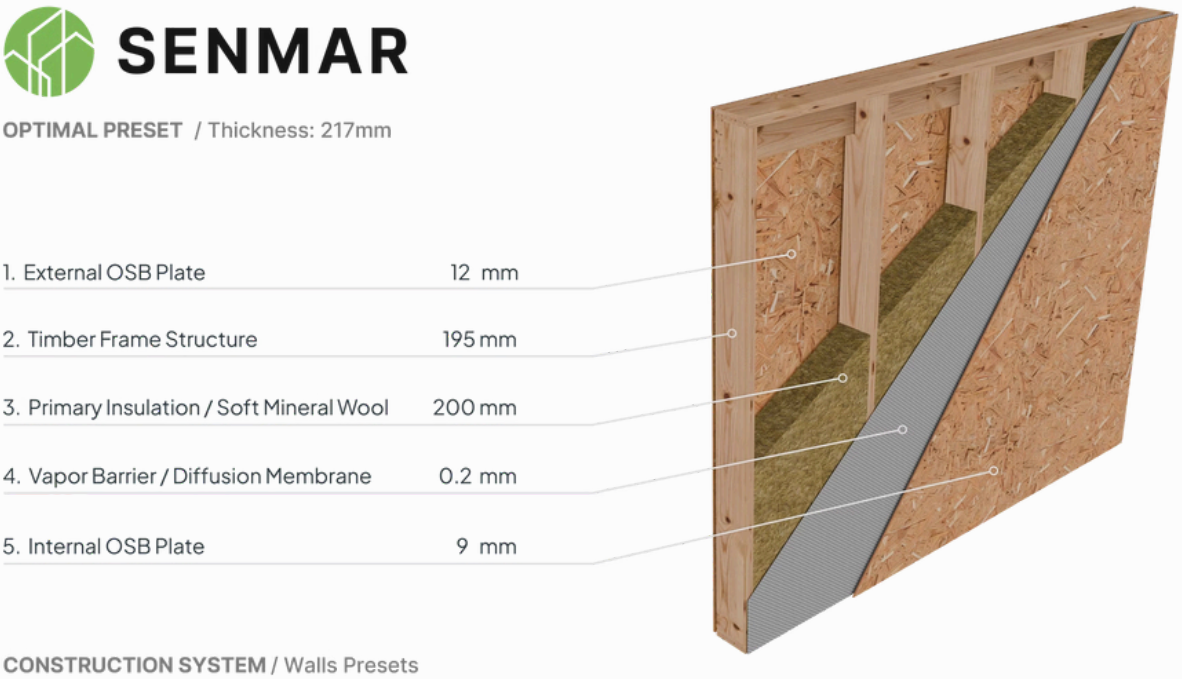
Technical Data Sheet
Optimal Wall

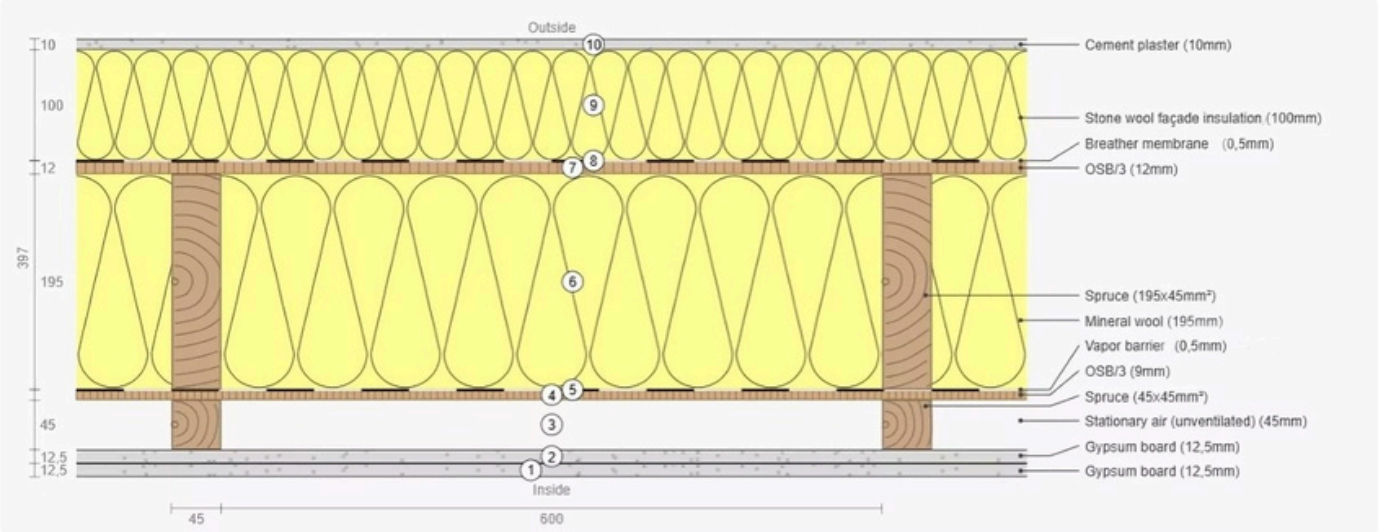
The Optimal Wall system is engineered for efficiencyandcomfortin moderateclimates.

The assembly is based on a timber frame structure incorporating**200 millimetersofprimary insulation** and is protected by an internal vapor barrier membrane.
This configuration is designed to maintain a stable and comfortable indoor microclimate throughout the year. The inclusion of a dedicated vapor barrier is critical for managing moisture transport, thereby protecting the structural components from potential damage and ensuring the building's long-term integrity and durability.
The system provides a reliable and cost-effective solution for regions with mild winter conditions.

Wall Assembly Composition



Thermal Performance Metrics



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: 0,125 W/(m²K)

Contribution to the greenhouse effect:

insufficient excellent

Condensate: 100 kg/m²

insufficient excellent

Thickness: 39,7 cm
Weight: 72 kg/m²

Moisture content of wood: + 100,0 %

Interior surface 19,1°C (53%)

insufficient excellent

Drying time: -

Drying reserve: 356 g/m²a

insufficient excellent

Temp. amplitude damping (1/TAV): 40.0

Phase shift: 12h

Heat storage capacity: 42 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: 7,829 m²KW

Contribution to the greenhouse effect:

insufficient excellent

Condensate: 100 kg/m²

insufficient excellent

Thickness: 39,7 cm
Weight: 72 kg/m²

Moisture content of wood: + 100,0 %

Interior surface 19,1°C (53%)

insufficient excellent

Drying time: -

Drying reserve: 356 g/m²a

insufficient excellent

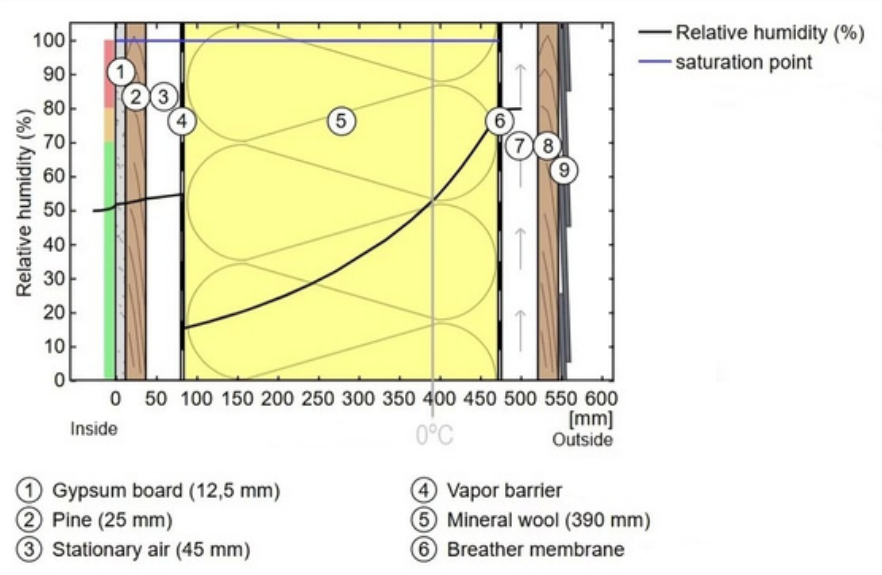
Temp. amplitude damping (1/TAV): 40.0

Phase shift: 12h

Heat storage capacity: 42 kJ/m²K

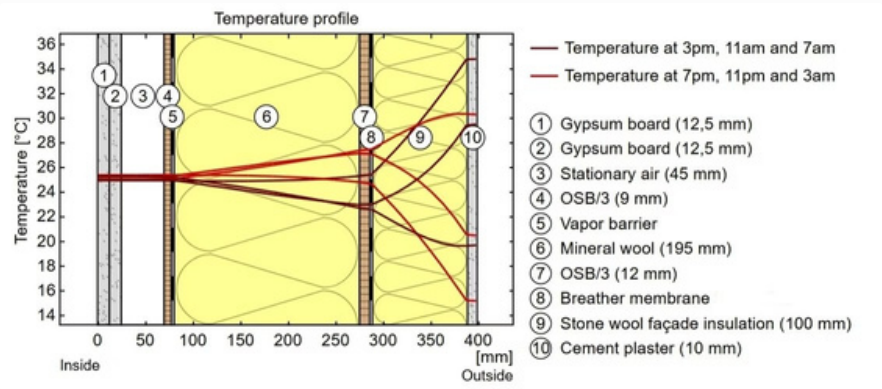
insufficient excellent

Hygrothermal Analysis
Relative Humidity & Moisture Control



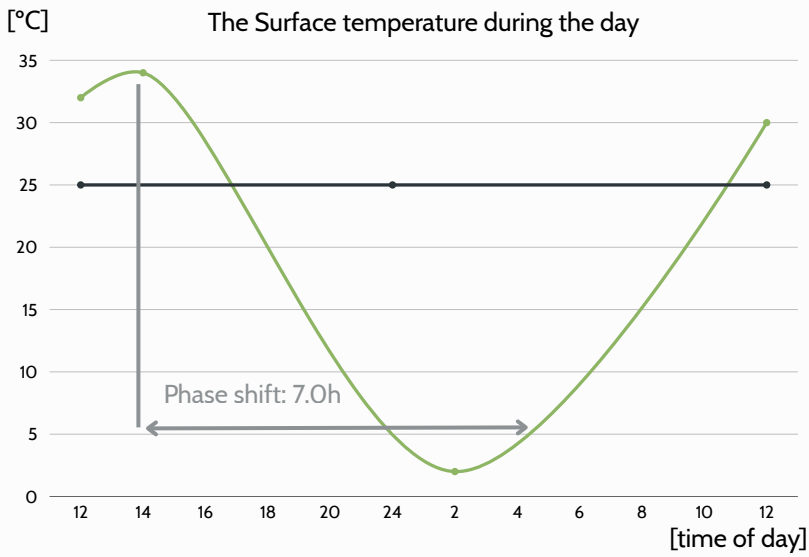
Drying reserve Drying reserve according to DIN 4108-3:2018: **248 g/(m²a)**
At least required by DIN 68800-2: **100 g/(m²a)**
Mould protection The temperature of the inside surface is 18,7 °C leading to a relative humidity on the surface of 54 %.
Mould formation **is not expected** under these conditions.

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: **7,0 h**
- Heat storage capacity (whole component): **54 kJ/m²K**
- Amplitude attenuation: **10,9**
- Thermal capacity of inner layers: **33 kJ/m²K**
- TAD: **0,092**