THE FINNISH SAUNA BENCH GUIDE

Design Principles, Recommended Sauna Bench Dimensions, and Construction Guidelines for Permanent Saunas and FinSteam Sauna Tents

Written by Toni Hannukainen
Founder of Saunística
Head of International Distributor Network, FinSteam

PART 1

Why Are Finnish Sauna Benches Built on Multiple Levels?

Before determining the dimensions of sauna benches, it is important to understand their purpose. In a Finnish sauna, benches are much more than places to sit, they are an integral part of the sauna's thermal design.

1. Great Löyly Doesn't Happen by Accident

A great sauna experience begins with understanding how heat behaves and how the human body experiences it.

The height of sauna benches is never accidental, nor is it merely a structural design choice. Their primary purpose is to position the bather in the part of the sauna where heat and löyly work together in the most natural and comfortable way. Many people judge a sauna by the temperature shown on the thermometer. However, a thermometer measures the temperature at only one specific location, while the human body experiences heat as a whole. This is why two saunas displaying exactly the same temperature can feel completely different.

If your head feels hot while your feet remain cold, the problem is usually not the sauna temperature or sauna heater. The problem is that the bather is sitting at the wrong height within the sauna.

2. Heat Stratifies Inside the Sauna

Warm air is lighter than cool air, so it naturally rises toward the ceiling while cooler, denser air settles near the floor. As the sauna heater warms the room, a natural vertical temperature gradient is formed: the higher you go, the warmer the air generally becomes.

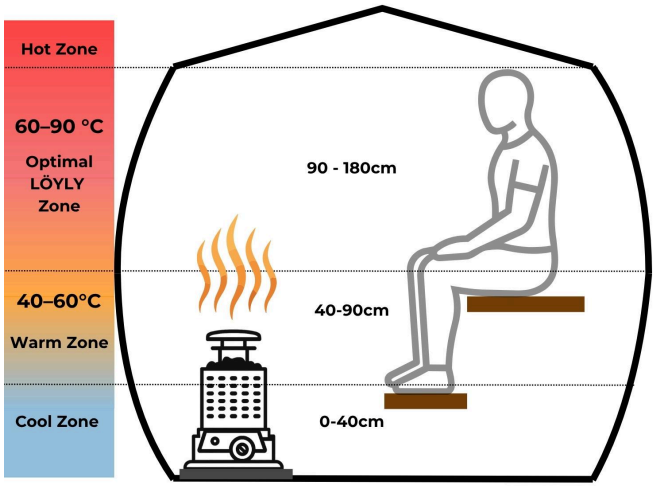
When water is poured onto the hot heater stones, the resulting löyly first rises toward the ceiling, spreads beneath it, and then gradually descends throughout the sauna. This is why Finnish sauna benches are built on multiple levels, not for appearance, but to position the bather within the optimal heat zone where warmth and löyly can be experienced as intended.

3. The Four Heat Zones of a Finnish Sauna

FinSteam divides a Finnish sauna into four functional heat zones. Although the boundaries between these zones are not fixed, this model helps explain why the same sauna can feel completely different at different seating heights.

Zone	Location	Description
Cool Zone	Near the floor / ground level	The coolest area of the sauna. If the lower bench is too low, the bather's feet remain in this zone and may feel cold.
Warm Zone	Above the Cool Zone	A transitional area suitable for steps and the lower bench. The primary bathing area should be located above this zone.
Optimal LÖYLY Zone	The sauna's primary bathing zone	Heat surrounds the entire body evenly, löyly feels soft and comfortable, and the head is not exposed to excessive heat. This is the ideal zone for enjoying a Finnish sauna.
Hot Zone	Directly below the ceiling	The hottest part of the sauna. If the bather's head is too close to the ceiling, the löyly may feel harsh or even scorching.

Figure 1. Heat Zones in the FinSteam FRITID and FRITID X Sauna Tents



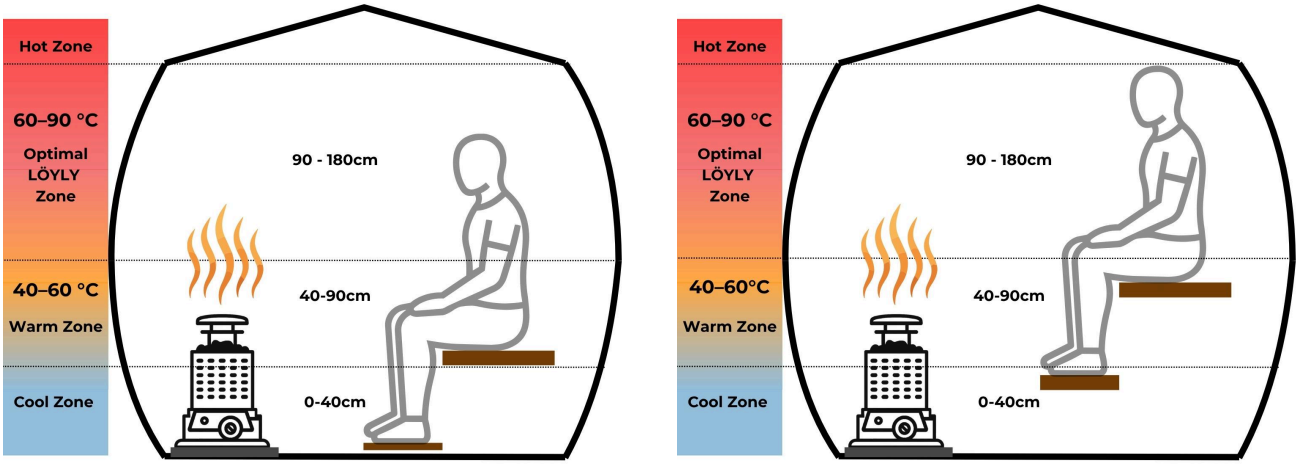
4. Why Don't You Sit with Your Feet on the Floor in a Finnish Sauna?

One of the most common mistakes when building Finnish saunas (especially outside Finland) is **installing the sauna benches too low.** When a bather sits with their feet on the floor or on the ground, the body is exposed to several different heat zones at the same time.

The feet and lower legs remain in the Cool Zone, the thighs and torso are positioned in the Warm Zone, while the shoulders and head reach the Optimal LÖYLY Zone. As a result, the upper body may be exposed to hot löyly, while the feet remain noticeably cooler and everyone knows the feeling of having cold feet.

The goal of a Finnish sauna is to provide an even and comfortable heat experience for the entire body. This is why sauna benches are built high enough to keep the feet out of the coolest air layer near the floor and position the upper body within the Optimal LÖYLY Zone.

Figure 2. These illustrations demonstrate how bench height determines the bather's position within the heat zones of the FinSteam sauna tent and, ultimately, the quality of the löyly experience.



5. Bench Height Is Determined by the Heater and the Sauna Height

There is no single standard bench height for a Finnish sauna. Proper bench dimensions are always determined by the heater design, the sauna's internal height, and the available vertical space.

The objective is to position the bather within the Optimal LÖYLY Zone while maintaining sufficient clearance between the bather's head and the ceiling to allow löyly to circulate naturally. If the benches are positioned too low, the bather remains below the optimal heat zone. Conversely, if the benches are positioned too high relative to the ceiling, the bather's head may enter the Hot Zone, where the löyly can become uncomfortably intense.

For this reason, bench design should always consider the heater and the sauna as a single thermal system. With traditional wood-burning and electric heaters, the primary reference point is the height of the heater stones. With the FinSteam gas heater, the design must also take into account the heated airflow created by the Direct Thermal Flow technology.

Wood-Burning and Electric Heaters

In a traditional Finnish sauna, the primary reference point for bench height is the top surface of the heater stones. As a general rule, the lower bench should be positioned at or above the level of the heater stones.

This places the bather's feet in the warm air mass where löyly circulates naturally, creating a more even and comfortable sauna experience.

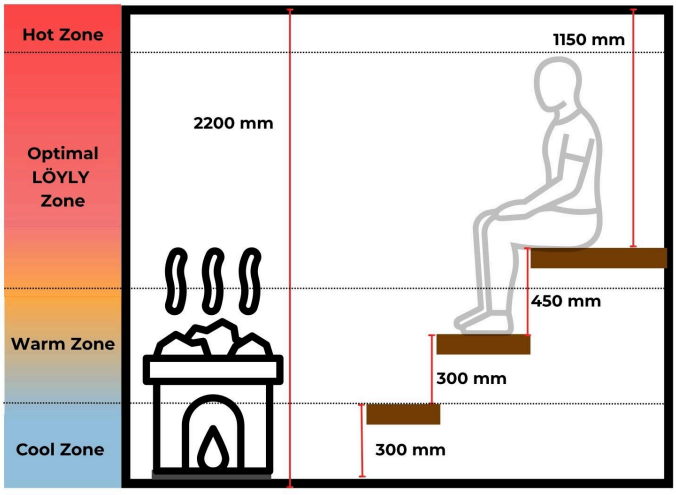


Figure 3. Traditional Bench Dimensions for a Wood-Burning Finnish Sauna

FinSteam Gas Heater

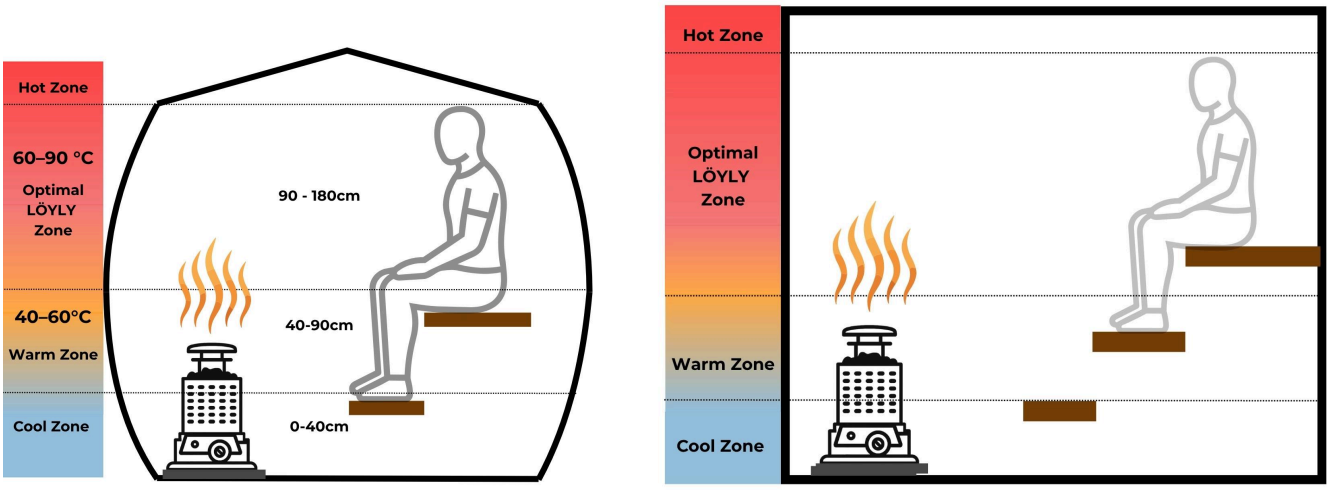
Unlike conventional sauna heaters, the FinSteam gas heater transfers heat not only through natural convection, radiant heat, and thermal conduction, but also through **Direct Thermal Flow** technology.

Integrated heating openings in the flue direct a flow of hot air straight into the sauna, delivering heat precisely where it is needed. The first **Direct Thermal Flow** openings are located approximately **400 mm (16 in)** above the floor or ground level.

In a **FinSteam sauna tent**, the most important reference point for positioning the lower bench is the level of these first heating openings.

In a **permanent sauna**, where sufficient ceiling height is available, the benches can be designed according to traditional Finnish sauna principles, with the lower bench positioned at or above the level of the heater stones.

Figure 4. As shown, the internal height of the sauna determines both the bench layout and the bather's position within the sauna.



PART 2

Construction and Installation Guidelines for Sauna Benches with the FinSteam Gas Heater

The following dimensions provide the basis for sauna bench design. Final dimensions shall always be determined according to the sauna's internal dimensions, the heater design, the required safety clearances, ventilation, structural load capacity, and overall operational safety.

6. Bench Dimensions for Permanent Saunas with the FinSteam Gas Sauna Heater *(Indoor, Outdoor, and Garden Saunas)*

Dimension	Recommendation
Clearance between the upper bench and the ceiling	1000–1100 mm (39–43 in), maximum 1200 mm (47 in)
Vertical distance between the upper and lower benche	400–450 mm (16–18 in)
Lower bench position relative to the FinSteam gas heater	Where sufficient ceiling height is available, the lower bench should be positioned at or above the level of the heater stones. The final bench height shall always be determined according to the internal height of the sauna.

Recommended internal height for a permanent sauna: 2000–2200 mm (79–87 in). Minimum: 1900 mm (75 in). Heights exceeding 2300 mm (91 in) are generally not recommended.

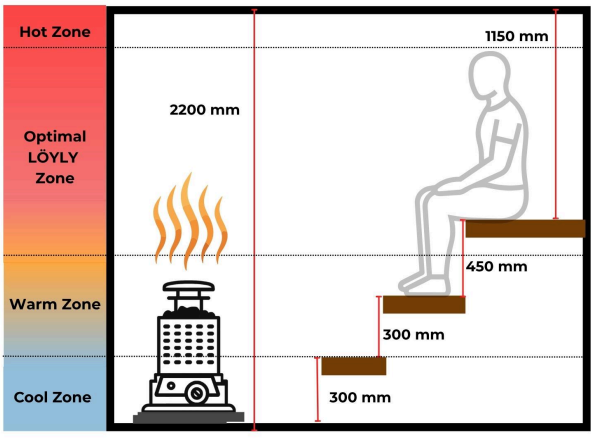


Figure 5. The bench layout should provide safe and ergonomic access to the upper bench. As the internal height of the sauna increases, additional intermediate benches or steps may be required.

Sauna Bench Width and Depth

Dimension	Recommendation
Seating width per bather	500–600 mm (20–24 in)
Recommended upper bench depth	500–650 mm (20–26 in)
Recommended lower bench depth	300–450 mm (12–18 in)
Minimum bench length for lying down	1800–2000 mm (71–79 in)

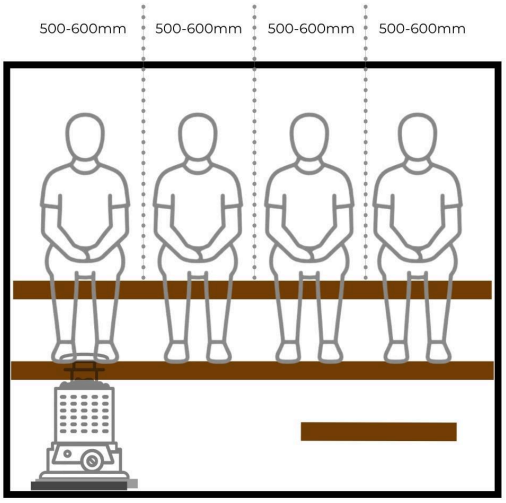


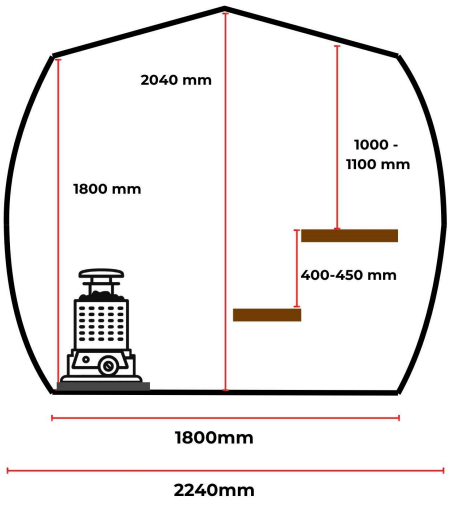
Figure 6. Bench dimensions should be determined according to the typical height and body size of the sauna's intended users.

7. Bench Dimensions for the FinSteam Sauna Tent

FRITID and FRITID X Sauna Tent – Internal Dimensions

Dimension	**Value**
Floor dimensions	1800 × 1800 mm (71 × 71 in)
Internal width at the centre of the sauna	Approx. 2240 mm (88 in)
Internal height at the side walls	Approx. 1800 mm (71 in)
Internal height at the centre	Approx. 2040 mm (80 in)

The tent walls curve outward, making the sauna wider at mid-height than at floor level.
The benches shall be designed as a completely free-standing structure, with all loads transferred directly to the ground through the bench legs.
The benches shall not rely on or transfer any load to the sauna tent frame or the tent fabric.
However, they may lightly touch the tent fabric provided that no structural load is applied.



Designing Benches for a FinSteam Sauna Tent: Determine the Number of Bathers First

The bench width should be selected according to the intended number of bathers.

A bench width of 1000–1200 mm (39–47 in) is recommended for two bathers.
A bench width of 1500–1600 mm (59–63 in) comfortably accommodates three bathers, while the maximum recommended bench width for FinSteam FRITID and FRITID X sauna tents is 1800 mm (71 in), providing seating for three to four bathers.

Bench widths of less than 1000 mm (39 in) are not recommended, as a wider structure provides significantly better stability, rigidity, and overall safety.

8. Structural Safety and User Comfort

Free-Standing Structure

In FinSteam sauna tents, the bench structure shall be completely free-standing. It shall not rely on or transfer any load to the tent frame or the tent fabric. All loads shall be transferred directly to the ground through the bench structure itself.

Upper and Lower Bench Locking

The lower bench should be securely connected to or locked to the upper bench. A rigid, integrated structure prevents the lower bench from tilting forward when stepped on, improving both stability and user safety.

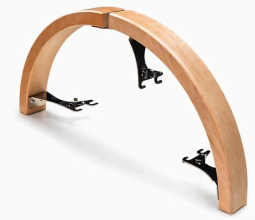
Uneven Ground

The bench structure shall be sufficiently rigid and stable to provide safe use, even on uneven ground. Adjustable legs are recommended to compensate for uneven surfaces and to ensure that the benches remain level, stable, and free from rocking.

Heater Protection

If the heater is positioned close to the benches, a protective guard should be installed to prevent accidental contact with the hot surfaces.

For FinSteam sauna tents, the **FinSteam HALO Safety Rail** is the recommended solution, providing effective protection while maintaining comfortable access to the heater.



FinSteam HALO Safety Rail

Backrests

Backrests are commonly installed on sauna benches to improve seating comfort and provide an increased sense of safety while bathing. They also create a comfortable seating position by supporting the back and helping the bather maintain a relaxed posture during longer sauna sessions.

The **FinSteam POPPEL** sauna benches feature **removable backrests**. This allows the backrests to be easily removed whenever additional space is desired, for example when using the upper bench for lying down. The removable design offers greater flexibility without compromising the stability or functionality of the bench system.

Portable Bench Design

For portable saunas, the bench system should be designed for quick assembly, easy disassembly, and convenient transportation without compromising strength or safety.

Folding legs are highly recommended, as they significantly reduce the storage and transport size while allowing the benches to be assembled within minutes.

All locking mechanisms should secure the legs firmly in the open position to prevent accidental folding during use.

Regardless of the design, the bench legs should always be **cross-braced**. Cross-bracing greatly increases the rigidity of the structure, prevents the legs from buckling or twisting under load, and ensures that the benches remain stable even when used on uneven ground.

A well-designed portable bench combines **strength, stability, low weight, and ease of transport**, making it suitable for repeated assembly and outdoor use without compromising the Finnish sauna experience.

Ventilation and Drying

Gaps should be provided between the horizontal bench slats of both the upper and lower benches. These gaps allow air to circulate freely, promote moisture evaporation, and enable the benches to dry quickly after use.

Adequate ventilation between the slats also improves the durability of the wood by reducing moisture retention and helps maintain a hygienic seating surface over time.

9. Bench Woods and Surface Treatment

The seating surfaces of sauna benches should be made from wood that has **low thermal conductivity**, withstands moisture and temperature fluctuations, and feels comfortable against bare skin. An ideal bench material is low in resin or completely resin-free, dimensionally stable, and easy to maintain.

Surface Treatment

Sauna benches should **never** be painted, varnished, or coated with film-forming finishes. Such coatings can become uncomfortably hot, reduce the wood's ability to regulate moisture naturally, and shorten the service life of the benches.

The recommended treatment is **paraffin oil** or another oil specifically designed for sauna benches. These penetrating oils protect the wood without forming a surface film, reducing moisture absorption, simplifying cleaning, and preserving the wood's natural appearance and feel.

10. Recommended Bench Woods

The choice of wood has a significant impact on the comfort, durability, and performance of a sauna bench. An ideal bench material should have **low thermal conductivity**, excellent dimensional stability, good resistance to moisture and temperature fluctuations, and provide a comfortable seating surface against bare skin.

The following wood species are **FinSteam's recommended materials for sauna bench seating surfaces**. These recommendations are based on each wood's thermal properties, durability, workability, and proven performance in Finnish sauna conditions. While other suitable species are available, the woods listed below represent the materials we consider to offer the best combination of comfort, longevity, and overall sauna experience.

Wood Species	Rating	Description
European Aspen (*Populus tremula*)	⭐⭐⭐⭐⭐	The traditional Finnish bench wood. Resin-free, low thermal conductivity, and comfortable against bare skin. An excellent choice for all Finnish saunas.
Thermo Aspen	⭐⭐⭐⭐⭐	One of the finest premium bench materials. Heat treatment improves dimensional stability, moisture resistance, and durability while giving the wood a rich, darker colour.
Black Alder (*Alnus glutinosa*)	⭐⭐⭐⭐⭐	A classic Scandinavian sauna wood with a warm appearance, low resin content, and a smooth, comfortable seating surface. Suitable for both traditional and modern saunas.

Thermo Alder	⭐⭐⭐⭐⭐	A premium version of black alder. Heat treatment enhances stability, durability, and resistance to moisture while creating a beautiful dark finish.
Poplar (*Populus* spp.)	⭐⭐⭐⭐⭐	Lightweight, pale, and naturally comfortable to sit on due to its low thermal conductivity. Increasingly popular in European sauna construction thanks to its clean appearance and excellent performance.
Thermo-Radiata Pine	⭐⭐⭐⭐⭐	Heat treatment removes resin and greatly improves dimensional stability. An attractive and durable bench material widely used in modern sauna construction worldwide.
Western Red Cedar (*Thuja plicata*)	⭐⭐⭐⭐⭐	One of the world's most prestigious sauna woods. Naturally decay-resistant, resin-free, lightweight, and exceptionally low in thermal conductivity. Known for its distinctive cedar aroma.
Northern White Cedar (*Thuja occidentalis*)	⭐⭐⭐⭐⭐	A lighter-coloured cedar with a milder fragrance than Western Red Cedar. Naturally durable, lightweight, and an excellent choice for premium saunas.
Western Hemlock (*Tsuga heterophylla*)	⭐⭐⭐⭐☆	Straight-grained, light-coloured, and virtually resin-free. Widely used in modern sauna interiors and well suited for benches where a clean, contemporary appearance is desired.
American Basswood (*Tilia americana*)	⭐⭐⭐⭐⭐	Extremely lightweight hardwood with exceptionally low thermal conductivity. Remains cool to the touch and is an excellent alternative to Aspen or Abachi.
Quaking Aspen (*Populus tremuloides*)	⭐⭐⭐⭐⭐	The North American equivalent of European Aspen. Resin-free, light-coloured, and highly comfortable for bench seating in both residential and commercial saunas.
Abachi / Ayous (*Triplochiton scleroxylon*)	⭐⭐⭐⭐⭐	One of the most widely used woods for spa and commercial saunas. Exceptionally lightweight with extremely low thermal conductivity, making it one of the coolest and most comfortable woods for sauna benches.

Wood Species to Avoid for Sauna Benches

Not all wood species are suitable for sauna benches. Woods with the following characteristics should generally be avoided, especially for seating surfaces:

- **High resin content** – Softwoods that contain large amounts of resin may release resin when heated, creating an uncomfortable and potentially hazardous seating surface.
- **High thermal conductivity** – Dense hardwoods and some tropical species can become uncomfortably hot, increasing the risk of skin burns.
- **Poor dimensional stability** – Woods that expand, shrink, or warp significantly when exposed to repeated heating and cooling are not suitable for long-term sauna use.
- **Low natural moisture resistance** – Wood that absorbs moisture readily may develop mould, decay, or surface damage over time.
- **Rough or splinter-prone grain** – Bench surfaces should remain smooth and comfortable throughout their service life.

As a general rule, **construction-grade softwoods such as untreated pine and spruce are not recommended for bench seating surfaces**, although they are commonly used for sauna framing and structural components. Their relatively high resin content and tendency to warp make them less suitable for direct skin contact.

Choosing the right wood species is one of the most important decisions in sauna bench design. A well-selected material provides greater comfort, longer service life, lower maintenance requirements, and contributes significantly to the overall Finnish sauna experience.

11. Final Thoughts

Ultimately, every sauna owner, builder, and designer has the freedom to create benches that match their own vision, style, and needs. There is no single "correct" bench design, as long as the structure is safe, properly engineered, and strong enough to support the intended number of bathers.

The recommendations in this guide are intended to help you design and build sauna benches that follow the principles of a traditional Finnish sauna. Correct bench dimensions, combined with the right heater, appropriate sauna height, and effective ventilation, create the conditions for an authentic Finnish löyly experience.

Great löyly is never created by the heater alone. It is the result of a well-designed sauna, where the heater, benches, sauna room or sauna tent, and ventilation work together as one complete system.

We hope this guide helps you create a sauna that is not only safe and durable, but also delivers the comfortable, even, and enjoyable löyly that defines the Finnish sauna tradition.

From all of us at FinSteam, we wish you many relaxing, memorable, and authentic Finnish sauna experiences.

Enjoy the löyly.

Sauna Benches #PR-Woodworks