

The Complete Guide to Building a Sauna in Australia

# The Complete Guide to Building a Sauna in Australia

*Learn from 20+ years of Finnish sauna construction expertise applied to Australian conditions*

By Florian

A premium technical guide based on official Finnish RT (Rakennustieto) building standards—the global gold standard for sauna construction.

**Price: A\$97**

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## How to Use This Guide

This comprehensive guide is structured in three progressive sections, designed for both first-time builders and experienced DIYers.

Part 1: Foundation & Planning (this section) covers the conceptual and planning phase.

Part 2: The Build covers detailed construction with adaptation for Australian conditions.

Part 3: Systems & Finishing focuses on heaters, ventilation systems, and final touches.

How to Read This Guide:

- If you are completely new to saunas, start with Chapter 1 and read sequentially.
- If you already know what type of sauna you want, jump to Chapter 2 for sizing.
- Throughout the guide, callout boxes contain critical specifications and Australian notes.

**KEY SPECIFICATION: Finnish RT standard target conditions: Air temperature at head height: 70-100°C | Relative humidity: 40-70g water vapor/kg air | Radiant heat: evenly distributed | Air circulation: gentle, natural convection or controlled mechanical flow**

## Chapter 1: Sauna Fundamentals

### What a Sauna Really Is

Before you build, you need to understand what you are actually creating. A sauna is not a shower enclosure. It is not a steam room. It is not a hot tub.

The Finnish word sauna has no true translation into English. It describes a uniquely constructed space where temperature, humidity, air quality, and heat radiation work in precise balance.

A traditional Finnish sauna operates at temperatures between 70-100°C at head height. These are not arbitrary numbers—they represent the sweet spot where the human body experiences therapeutic heat stress.

### The Role of Heat, Humidity, and Air Circulation

#### Heat: The Foundation

Heat in a sauna comes from two sources: radiant heat (directly from the heater and hot surfaces) and convective heat (hot air circulation).

#### Humidity: The Therapeutic Tool

Humidity in a sauna is not incidental—it is functional. Below 40%: feels uncomfortably dry. 40-70%: therapeutic zone. Above 70%: air becomes heavy, experience shifts toward steam bath.

#### Air Circulation: The Often-Overlooked Factor

Poor air circulation creates dead zones. The Finnish RT standards specify ventilation carefully for oxygen supply, comfort during use, and rapid drying after use.

### Sauna Types Overview

#### Pihasauna (Yard/Outdoor Sauna)

The classic standalone sauna in backyards. Usually wood-fired or electric. Popular with Australian homeowners for the destination retreat experience.

#### Asuntos sauna (In-Home Sauna)

A sauna built inside a residential home. Increasingly popular in Australia for year-round use. Requires excellent moisture control.

### The Cost of Getting It Wrong

The most common failure is improper vapor barrier installation. The Finnish RT standards specify that vapor barriers must be aluminum-coated paper with the reflective side facing INTO the sauna room.

**COMMON MISTAKE: Choosing the vapor barrier on the wrong side because that is how house building works. In a sauna, the inside is 80°C and outside is 20°C. The vapor barrier MUST face the hot side (inward). Getting this wrong is the single largest cause of sauna failures.**

## Chapter 2: Planning Your Sauna

### Location Analysis

#### Option 1: Outdoor Pihasauna (Yard Sauna)

The classic approach: a standalone structure in your backyard, 1-10 meters from your house. Advantages: lower initial cost, no moisture concerns for main house, wood-fired viability.

#### Option 2: Indoor Asuntosauuna (In-Home Sauna)

A sauna built inside your existing home. Year-round availability and easier access are advantages. Disadvantages: moisture management complexity, renovation costs.

### Size & Capacity Selection

Sauna size in Australia is typically 2-4 persons for residential use.

#### 2-Person Sauna

Dimensions: 1600mm x 1600mm (2.56m<sup>2</sup>). Small, intimate, heats quickly (20-30 minutes with 4kW electric).

#### 3-Person Sauna

Dimensions: 1800mm x 1600mm or 1800mm x 2100mm. More practical for families with dual bench layout.

#### 4-Person Sauna

Larger sizes with multiple seating options. Comfortable for families and group use.

## Chapter 6: Wood Selection for Sauna Interiors

### Interior Wall Cladding Selection

#### Western Red Cedar – The Popular Choice That Deserves a Closer Look

General Specification:

- Scientific name: Thuja plicata
- Density: 370 kg/m<sup>3</sup> (very low)
- Color: Warm reddish-brown, attractive grain pattern
- Aroma: Distinctive, strong

Australian pricing and availability:

- Western Red Cedar is imported from North America (primarily British Columbia, Canada).
- Sauna profile (84x10mm): approximately A\$17 per linear metre
- Premium clear grade panels: A\$20-30 per linear metre
- Total cost for a 4-person sauna interior: A\$2,000-3,500 in cedar cladding

Why Australians love cedar:

- Cedar is by far the most popular sauna wood in Australia:
- Beautiful warm reddish-brown appearance
- The iconic sauna smell is what most Australians associate with saunas
- Readily available through Australian suppliers
- Natural rot resistance

**COMMON MISTAKE: Choosing cedar because it is popular rather than because it is best. Cedar dominates the Australian market through marketing and familiarity, not because it is the optimal choice.**

Why I recommend against cedar for sauna interiors:

1. The aroma becomes a problem, not a feature.

The strong thujaplicin oils that make cedar smell like a sauna are actually a drawback. At temperatures above 80°C, these oils volatilize aggressively. After months of heat cycling, many owners report the aroma becoming overwhelming. Some develop sensitivity with respiratory irritation. Traditional Finnish saunas use low-aroma woods (spruce, aspen, alder) precisely because you spend extended time in enclosed space.

2. Cedar is NOT what the Finns use.

The Finnish RT building standards specify spruce (kuusi), alder (tervaleppä), and aspen (haapa) for sauna interiors. Not cedar. Finland has built saunas for 1000+ years. If cedar were best, they would use it. The ideal sauna wood should be neutral—low aroma, low resin, thermally comfortable, and dimensionally stable.

3. Inferior heat performance compared to aspen and alder.

While cedar's low density (370 kg/m<sup>3</sup>) means it is warm to touch, it stores less thermal mass than spruce (470 kg/m<sup>3</sup>) or alder (450 kg/m<sup>3</sup>). Cedar-lined saunas have slightly less even radiant heat and lose temperature faster.

4. Durability is overstated for interior sauna use.

Cedar's rot resistance is useful for exterior applications. Inside a sauna, with proper ventilation, rot is irrelevant. The real enemy is thermal cycling, and cedar's low density makes it prone to surface checking.

5. Thermally modified wood outperforms cedar.

Thermo-spruce and thermo-aspen last 2x longer than cedar, have better dimensional stability, do not off-gas oils, and cost less in Australia.

6. Cost comparison—cedar is the expensive option.

At A\$17-30 per linear metre, cedar is one of the most expensive choices. Heat-treated radiata pine—which performs better—costs A\$8-15/lm.

**AUSTRALIAN NOTE: If you still want cedar: Use it for exterior cladding where rot resistance matters. For interiors, choose clear grade, expect intense aroma for 3-6 months. Some family may find it irritating. Consider using cedar on lower walls only (below bench) and aspen/alder on upper walls and ceiling.**

Florian's recommendation for Australian builders:

Priority	Interior Cladding	Why	Cost (AU)
<b>1st choice</b>	Heat-treated radiata pine	Best value, locally available, no resin, excellent performance	A\$8-15/lm
<b>2nd choice</b>	Aspen (imported)	Warmest to touch, most stable, neutral aroma, Finnish standard	A\$12-18/lm
<b>3rd choice</b>	Alder (imported)	Premium feel, beautiful colour aging, lowest thermal conductivity	A\$18-25/lm
<b>4th choice</b>	European spruce	Authentic Finnish default, good all-rounder	A\$15-22/lm
<b>5th choice</b>	Western Red Cedar	Popular but overrated—save for exterior cladding	A\$17-30/lm

### Bench Wood Selection

Benches get hotter and wetter than walls. Recommended: Aspen or alder, premium grade (clear or select). Heat-treated radiata pine is acceptable but less comfortable.

### **Hardware: Stainless Steel Only**

All fasteners, brackets, and hardware exposed to sauna interior must be stainless steel 304 or 316 grade. Carbon steel, galvanized, and aluminum fail in high heat and humidity.

### **Wood Finishes**

#### **No Chemical Finishes**

Interior cladding must have no finishes, stains, or paints. Finishes trap moisture, promote rot, and off-gas toxins. The sauna interior must be bare wood.

#### **Natural Aging (Patina)**

Year 0: Bright golden or pale color. Year 1-2: Surface oxidation and darkening. Year 3+: Rich patina. This is not damage—it is thermal aging, part of the sauna's character.

## Final Notes

This guide represents current Finnish best practices adapted for Australian climate and construction. The investment in time to research, proper building, and maintenance pays dividends in a sauna that functions reliably for 20-30+ years.

There are no shortcuts. Vapor barriers, ventilation, insulation, and proper materials matter. Cut corners and you rebuild in 5-10 years. Do it right the first time.

Welcome to the sauna community. Your future self—sweating peacefully in a properly functioning sauna—thanks you.

*Premium Digital Product — A\$97 for complete multi-part guide  
Based on Finnish RT standards, with hands-on Australian field experience*

*About the Author: Florian — Sauna builder and designer with 10+ years experience building saunas in Finland, now applying Finnish standards to Australian projects.*