

# BUILDING IN A SAUNA

## Using Genuine Finnish Materials & Techniques For the builder, carpenter or home D.I.Y enthusiast

This technique is particularly appropriate when space is restricted and/or the shape is complicated by intrusions, roof slopes, etc. A whole room, or just part of one, may be converted to a sauna cabin. Garages, lofts and cellars, box-rooms and redundant bathrooms are popular choices; even old stables and air-raid shelters now provide the sweet pleasures of sauna! Significant cost savings make this an attractive option for the builder, carpenter or home D.I.Y. Enthusiast.



Given the specialist knowledge - **the correct materials** - and good support, anyone 'handy' with everyday tools can build their own Finnish style sauna. These pages show how it's done, and we can supply all the correct (Genuine Finnish!) parts and materials. Advice and support at every stage is part of the complete service we offer; so you may start the project with complete confidence of a totally enjoyable 'sauna success'!

## SAUNA LAYOUT PLANNING

As with any project, much of its success will be the result of good planning. Probably the first consideration will be the space available, which may be constrained by existing walls, doors, windows, roof slopes, and other features. Start by making a sketch of the space - preferably to scale, and showing all the important dimensions. If this sketch of fixed 'room' features is made in ink, the sauna plan can be made in pencil, allowing easy revision if necessary.

### Some layout & design tips:

The nearer to 'square' the sauna can be, the better;

Avoid long narrow shapes if possible.

A good size for a comfortable family sauna is generally between 1.5 and 2 metres from front to back, and from 2 to 3 metres wide, though often smaller.

The sauna door is usually best in the longer wall

Plan for appx 2150mm max internal height (lower than most room ceilings)

The stove should be situated against a 'full-height' wall (see instructions supplied with stove)

Standard benches are 500mm wide; luxury benches are 600-700mm wide

Try to allow for at least one full-length reclining bench (usually min.1900mm).

Benches are usually approximately 400mm and 800mm above floor level.

Our sauna doorframes are (nominally) 1890mm high and 690mm wide

Allow a minimum of appx 650 x 400mm for the stove and guardrail (if in a corner)

Sauna walls will usually be appx 75mm thick if panelled on both sides; appx 63mm thick if fixed to an existing wall.

It is not normally necessary (or desirable!) to 'vent' an indoor sauna to the outdoors

Any easily-cleaned and water-resistant floor covering is needed, eg ceramic tiles or vinyl sheet flooring, but avoid carpet of any type.

Plan for slatted wooden 'duckboards' only where there is usually footfall

## HOW YOUR SAUNA IS BUILT

Your sauna's walls and ceiling will have four 'layers':

- 1) The Inner Panelling, or lining - the timber you actually see, feel and smell in the sauna!
- 2) A Vapour Barrier
- 3) The Framing, and (in the same thickness) the Thermal Insulation
- 4) The Outer Finish (which may be panelling to match the interior, some other material, or perhaps an existing wall.

## THE INNER PANELLING

**This is the essence of the sauna, and having the right timber for this job is absolutely vital if the sauna is to be successful (trouble-free) - and enjoyable!**

It has to take temperatures of up to 110 °C or more (and at extremely low humidity!) without shrinking, warping, cracking, or shedding excessive amounts of resin.

It must 'look and smell good' too; for this inner panelling is all you can see while sauna-bathing; and it is the heady aroma of the sauna timber that gives the Finnish Sauna its 'atmosphere'.

***Important Note:*** It is highly unlikely that the correct type of timber will be found anywhere other than at a specialist sauna supplier.

### **Alternative sources of timber:**

Using cheap 'DIY Store' tongue & groove panelling is almost certain to be the prelude to disaster.... even in everyday applications it shrinks alarmingly in a warm room. In the very high temperatures of the sauna its shrinkage is far greater. The tongues and grooves will almost certainly 'part company'. There is no 'cure'...

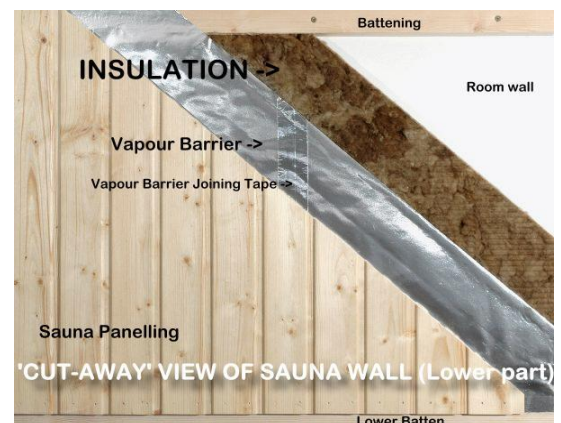
Specialist timber yards may be able to source the correct timber, though it is still unlikely. Here the only way to have any redress if/when a disaster occurs is to insist that their invoice states (in writing) that "This timber is supplied as being suitable for the inner lining of a Finnish-style Sauna cabin". And if they won't do this - don't buy it! The risk is too great....

### **The timber the Finns themselves use**

Here at Saunashop we stock the very best Finnish Sauna timber available in Britain. It's the same type of timber that has been tried and tested over many years by the Finnish people. It's the real thing-chosen for themselves by the expert  
Note: The inner panelling should NOT be treated with any surface coatings or preservatives

### **NAILS (to fix the panelling)**

We stock special nails of the right size, saving you the time and effort of finding them locally.



## THE VAPOUR BARRIER

This is a membrane fitted inside the inner panelling so that moisture cannot penetrate into or beyond the insulation, with the consequent risk condensation degradation. While not essential where the sauna has good dry-air ventilation on all sides, it is important when the sauna is built-in, will have heavy use, or is in a damp/cold area. Here again we suggest to 'play safe', and use the same material the Finns use! Alternatives such as plastic films may melt, or produce unwelcome odours; metal foils may have unforeseen effects on the timber or the sauna environment... We stock the same membrane that the Finns use for their own production Saunas.

## FRAMING

The framing is the 'backbone' of the sauna walls and ceiling, giving them strength and rigidity, and providing a secure fixing for the inner panelling, the benches, and the sauna stove.

Its thickness creates the hidden space for the thermal insulation layer.

Here, good quality 2"x2" timber stock, which can be easily sourced locally, is fine! (We don't normally supply this). Aim for 3"x2" for uppermost and lowest Battens to Provide solid anchorage for the ends of the paneling .

Choose good straight lengths, preferably from the driest convenient location.

## INSULATION

Traditionally, Finnish Saunas were built with 'Solid Log' walls, which naturally provided all the thermal insulation needed. However, in this modern type of 'frame and panel' sauna construction, additional thermal insulation must be provided so that the sauna may be easily and economically heated.

We prefer 'Rockwool' - a product made from natural mineral materials that is readily available in most areas.

In addition to its superb insulating performance, it is easily worked, non-allergenic, fireproof, odour free and water resistant - the ideal material!

We suggest RWA45 'batts' 1200 x 600mm, in 40mm thickness, and we stock this size and grade here so that you may have it delivered with your goods, if you wish.

## OUTER FINISH

Provided that both vapour barrier and insulation have been diligently applied, your sauna's outer finish may be made from almost any material, though for an authentic and harmonious appearance, the same panelling as is used for the sauna's interior is often preferred.

Alternatives may include pre-finished wall-boards, plywood, etc - even oil-tempered hardboard is sufficient if the walls or outer ceiling are unseen in the finished job.

The outer finish may be varnished, stained or painted, just as you wish.

For safety and comfort: NEVER apply any finishes or preservatives to the interior.

In the case of 'built-in' saunas, there may be only some (possibly none) of the walls with an outer skin, as the framing will have been fixed directly to existing room walls and/or ceiling.

In these applications, careful application of the vapour-barrier is important.

Where the sauna is to be built against un-insulated, cold or damp walls, the underside of a house roof, or walls with a sensitive finish, it may be best to build the sauna so as to leave a well ventilated air-gap (say 25-50mm wide) between the sauna's outer finish and the existing wall.

## Build in 4 of 8

### THE SAUNA DOOR

While it is possible to make a single sauna door from scratch (given the correct materials!), the amount of skill required, and labour time involved, will usually make it a somewhat 'risky' (and possibly rather expensive?) option.

We stock these fully finished wooden sauna doors complete with frames, all ready hinged and hung, and supplied complete with a factory fitted safetyglass window. Simply build it into the wall!

For real style, we also stock handsome bronze-tinted all-glass doors and these too are ready framed and hinged. They give a spacious, luxurious look and feel to any indoor sauna.



### The BENCHES, Backrests, etc...

This is another part of the sauna where the use of the right timber is essential!

Any timber with knots will have 'hot spots' - hot enough to burn; and resin 'weeps' can be really painful.

Splinters are decidedly 'undesirable'. (It hurts even to think about it...)

'Aspen' is the timber preferred by sauna enthusiasts the world over for finishing the benches and other 'sensitive' areas; its silky smooth, cool, splinter and knot-free surface feels so good against bare skin... and we suggest you don't cut corners where your personal sauna comfort is concerned!

The Aspen we stock is specially imported by us because of its ideal sauna qualities. We stock this product in a range of lengths.



### Construction of Walls, Ceilings , etc...

If the sauna wall is to be freestanding and thus self-supporting, it will have to be 'framed' both vertically and horizontally. If, however, the sauna is being built using the support of an existing wall, only horizontal 'battens' will be required.

The walls need to be framed or battened horizontally, so that the spruce panelling may be fixed vertically. There will typically be one of section 75x50 on the floor, forming a groundframe; another of section 75x50 making a 'ring beam' at the top of the wall; and two 50x50 horizontals between.

### Economy – By design !

Money will all be saved.... For example, using the 600mm wide Rockwool insulation that we supply, and a total of four horizontals, the internal wall height will be appx 2050mm and 2100mm externally; this is, conveniently, exactly the same length as our stock Spruce Sauna Panelling, which is also the ideal finished height for family-size saunas!

### Strong points .....

Build extra strength into the framing where the bench supports will be fixed, and where the heavy sauna stove is to be hung onto the wall.

Note: Getting the positions of these important framing parts 'just right' is so much easier if all the equipment is on site before starting the job!

## Build in 5 of 8

### **Ceiling**

This is similarly framed or battened. If there are large spans involved (say, over 2 metres), the ceiling may need heavier sections at intervals to provide resistance to sagging, e.g. timber sections of up to 100x50 may be needed to give adequate 'girder strength'.

### **Insulation**

Fit the thermal insulation carefully into the framing or between the battens, ensuring that no gaps remain, and that its inner surface lies flat without bulging out beyond the face of the framing or battens. 'Rockwool' of the correct grade will normally stay in place without additional fixing.

### **Vapour Barrier**

When fitted (see above), it is now stuck in place to the faces of the framing /battens with pva adhesive, so that it forms a unbroken surface over the walls and ceiling.

### **Fixing the panelling**

Tip: You cannot 'over-fix' the panelling!

The bottom of the Spruce Sauna Panels should be raised 25-50mm off the floor, so that water is not 'soaked up' by the exposed end-grain, where it will cause unsightly staining. Use sheradised, stainless or rustless 'lost-head' nails, preferably two at every horizontal and in every spruce panel; thus eight per panel.

Ensure the panels are joined together as tightly as possible before nailing, and check frequently that top and bottom horizontal measurements are the same, i.e. that the panels are not 'tending away' from true vertical as you progress across the wall – it happens so easily!

Punch the nail-heads well below the panel surface, where they will visually 'disappear' and be safely recessed away from potentially hazardous skin contact.

### **Fitting the Sauna Door**

We supply the door ready-hung in its frame and ready glazed with safety-glass, so all that is required is to build the doorframe into the sauna wall framing. It is thus a good idea to have the sauna door on site before framing the wall, thus saving additional 'fitting' work later in the job. To reverse the 'handing' of the door, simply invert the whole assembly. Take care to ensure that the frame stays square and flat during building-in, or the door will not close properly; thus check its operation before final securing in place. *Note: Sauna doors should open outwards!*

### **Vents**

The sauna is best ventilated from (and back into) the same room that the sauna door opens from. That room may then be ventilated quite normally, we suggest as if it were a bathroom.

The Inlet Vent is best positioned near to floor level under where the sauna stove is fixed to the wall. One of our wooden louvre grilles is ideal for the exterior. As the interior is usually invisible under the stove, it usually does not need a grille. The Outlet Vent has the same grille outside, and a Sliding Shutter type (adjustable) fitting inside.

The outlet vent is usually situated as far as possible from the inlet vent, i.e. higher up and in the opposite side/corner of the sauna cabin. In some cases it may be necessary to make a trunkway to carry air to or from the right parts of the sauna. *If unsure, ask our advice.*

## INTERNAL STRUCTURES

### Construction of sauna benches

Sauna benches need to be strong, rigid, safe, cool and comfortable.

Suggested heights are 400 and 800mm off the floor.

They are best supported by battens fixed to the walls at each end, so that they may be easily turned over (or removed entirely) for cleaning their undersides.

If supports must go the floor (avoid them if possible), they should be finished at their bottom ends such that water on the sauna floor is not 'soaked up' - if it does, it will cause staining (and eventually rot) in the timber. Hardware stores can supply rubber or plastic 'buttons'.

A solid 'ladder' frame is made with longitudinal members at front and back of, say, 75x50 section (any good quality general joinery timber will suffice); crossed by lighter section (say 75x25) bearers which then support the Aspen finishing. Allow one plank of our Aspen per 100mm of bench depth, plus another as a 'drop' at the front to cover/hide the framing. Fix the Aspen from below so that no fastenings are visible from above or the front.



'Ladder' Frame



Underside of finished

### Backrests, Armrests, Footrests and Headrests

Also should be made from Aspen, this adds very greatly to the comfort and style of the sauna!

Allow 2 or 3 planks wide of Aspen for a good backrest or headrest.

Armrests, footrests, etc may be added as desired, and should also be made from Aspen.

### Valances (between benches)

Fitted vertically between upper and lower benches, valances add real style! Again, these are best to be made from Aspen to match the benches and provide comfortable, skin-friendly surfaces.

Allow 2 or 3 planks of Aspen to make a neat job.

### Stove Guardrails

See the stove's own instruction manual for 'safety distances' to which the stove guardrail should be constructed. If this also is finished in Aspen, it will nicely match the other internal fitments.

### Duckboards (on the sauna floor)

Duckboards should be made for those areas where bare feet may be expected to walk; there is no point in covering the whole sauna floor.

If the duckboards are finished in Aspen to match the sauna's other internal fitments, they will look and feel really good! Alternatively, a good quality joinery timber (carefully sanded!) may be used.

An Aspen 'doormat' (small duckboard) outside the sauna door also looks and feels really good, and makes a nice slip resistant entry to the sauna.



## SAUNA LIGHT FITTINGS AND SHADES

We stock two different styles of light as shown here.  
A very pleasant, inexpensive and trouble-free way to light the sauna is from below the benches, about 250/300mm off the floor, the light shines where it's needed - at low level for safe footfall and not in the eyes! It also shines up between the bench slats to make a pleasant pattern on the walls and ceiling. 40-watt (max) plastics sauna-light fittings may be used here.  
Try fitting filament bulbs (ES type) for a restful, lighting effect! (We stock these). One light is enough in small saunas; use two otherwise.  
For brighter lighting, use a ceramic sauna-light (shown above with accompanying shade) at a higher level on the wall or as a corner light. Avoid placing them anywhere in the ceiling, or to walls over the stove area. Take care to keep the 'hot' glass part well clear of all wooden parts. Again, one light is enough in small saunas; use two otherwise.  
Safety Note: High-temperature (180 °C) flex is *essential* with this type of lighting  
We stock it here.



## STOVES AND ACCESSORIES

You'll expect us to have real sauna stoves from Finland - and we certainly do! So please see our website for the full range of beautiful sauna equipment and accessories we keep in stock.

Safety Note: ALWAYS have ALL electrical works carried out by a suitably qualified Electrical Contractor. Warranties on stoves and control units are Void if there is no proof of Professional fitting. Safety First !!!!

Remember, all our products can be viewed and ordered, at any time at [www.saunashop.com](http://www.saunashop.com) 24hours a day - every day !

**SaunaShop.com**

Saunas and everything for the Sauna Telephone 01722 746050

**Our aim is to be your 'one stop shop' for everything needed to make a really good sauna!**

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