SPATA

Standards for Swimming Pools

Domestic and Commercial

Part 5

Saunas

SAUNAS

Definition, Location and Glossary
Design and Construction
Equipment
Maintenance
Safety

Definitions

A sauna is a cabin or enclosed area incorporating a heater with diabase/periodite rocks to provide a dry air temperature of between 70ºC and 95ºC. The relative humidity varies between about 5 and 30% depending upon whether water has been ladled on to the stones. Bathers should remain in this atmosphere for no longer than 10-15 minutes.

Domestic Saunas: Those saunas erected within or adjacent to a private dwelling for the sole use of the occupants of that dwelling and their private guests.

Commercial Saunas: Those baths installed in or adjacent to commercial premises and operated for business purposes. These saunas may be used by private club members or may be available to the general public.

These standards deal with saunas constructed using wood and glass for the doors and windows. Where other types of material are used advice should be sought from the supplier/manufacturer that the materials are suitable to be subject to temperatures in excess of 100 ºC.

Glossary

Accessories: Items normally associated with the function of the sauna bath itself, ie buckets, ladle, thermometers, light fittings etc.
Bench: Horizontal wooden platform arranged so that bathers may sit or lie within the bath.
Ceiling: The false roof of an internal sauna designed for maximum heat retention.
Door: The entrance of the sauna, which is designed to retain heat, made of glass or wood.
.**Duckboard/floor grating:** Slatted wooden flooring laid within the sauna bath, usually in the walking area only.
Floor: The base upon which a sauna stands and forming part of the building. The floor should be finished in materials that are easy to clean and waterproof.
Heater: A device for elevating the internal temperature of the bath and which contains the facility for temperature control.
Heater guard: A protective device used to prevent accidental contact with the hot rocks of the stove.
Verandah: A slatted area along the front elevation of an outdoor sauna, partially covered by the roof overhang.

Design and construction
The construction of sauna baths falls primarily into two distinct categories. Firstly, those known as panel saunas and secondly, those known as log saunas.

The former are normally for interior use only, but in certain circumstances they may be used for outdoor saunas where a weatherproofing kit (consisting of two layer felt roofing on suitable ply or block board base, together with a suspended timber floor) is provided.

Saunas constructed in solid pine logs may be used either indoors or outdoors.

Panel saunas are usually constructed from Pine or Spruce and the walls and ceilings are made in modular sections consisting of an interior cladding or shiplapof tongued and grooved timbers, a porous insulation material, and an exterior cladding of tongued and grooved timbers. Exterior cladding can also include hardboard or plywood.

Log saunas are constructed from the same timber as above, but the walls are machined as solid baulks, tongued and grooved on their upper and lower surfaces with the ceilings constructed as for panel saunas. The corners are corbelled to form a cross lap.

a) **Wall thicknesses:** It is recommended that for panel saunas, the thickness of the walls should be not less than 2.7cm 60-75mm - including all timber classing internal and external cladding.and internal insulation. For log saunas, it is recommended that the walls should have a nominal minimum thickness of 60 mm.

b) **Clamping devices:** It is not necessary to incorporate clamping devices in the walls of panel saunas, but it is felt desirable to include them for the walls of internal and external log saunas. These normally take the form of a galvanised steel bolt embedded in the wall and capable of being tightened during the settling period. The number and position of these clamping bolts may be varied, but it is usual practice on an indoor log sauna to include for two per wall. In outdoor saunas the usual practice is to include for two per exterior wall and one each per interior wall.

c) **Ceiling thicknesses:** The ceilings to both log and panel saunas should have a minimum thickness of 60-75mm – including all internal and external cladding and internal insulation In the case of an external log cabin the ceiling may have loose insulation material in the roof void.

d) Door: Should always open outwards for ease of exiting the sauna. The door can be constructed of wood or toughened glass. Where a wood door is used it must include a window. Entrance doors can be provided with a magnetic catch or a spring loaded ball catch for a wooden door. **Locks or bolts must not be fitted.**

e) Internal benches: Benches should be constructed using timber free from large or dead knots, and should be planed smooth. Timbers such as aspen or abache are ideal for this purpose. Bench slats should be free from resin.

f) Roof – outdoor saunas: Roofs to outdoor saunas shall consist of 30mm tongued and grooved boarding on suitable purlins at no more than 1.2m centres, covered with an asbestos/fire resistant based felt underlay, covered with a mineralised top belt. The gable ends will be finished with a suitable weatherboard or equivalent.

Ventilation

All internal and external saunas should be provided with high level outlet and low level inlet vents controlled by a sliding wooden shutter from within, and be so positioned as to provide good cross circulation of air for the comfort of bathers.

Saunas normally draw air and exhaust air within the room they are sited within; ventilation is therefore normally through natural convection. Seek advice from the supplier for any particular requirements.

Drainage

If a commercial sauna is fitted with floor drain to assist with thorough cleaning of seating and floor, it should be noted that water in the trap may dry out causing odours within the cabin. This should be checked regularly.

Alternatively a mop and bucket can be used to clean the floor. Care should be taken to ensure excess moisture is removed and is not therefore detrimental to the timber.

Equipment

Sauna heaters

a) Where the sauna is provided with an electric heater, the size of the heater in relation to the volume of the sauna should be commensurate with the heater manufacturer's instructions.

b) It is recommended that the following kilowatt ratings versus cubic volumes be applied. (Assuming ambient air at 15°C)

c) Output (kw)	Volume range (m^3)
d) 1.5 – 2.5	m^3
e) 4.0/5.0	3 – 6m^3
f) 5 – 9	m^3
g) 7.5/9.0	8 – 13m^3
h) 9 – 15	m^3
i) 10 – 18	m^3
j) 14 – 24	m^3
k) 21.0	over 25m^3

l) Notwithstanding the above and unless otherwise specified, The heater should be capable of producing a maximum sauna room temperature of 100ºC within a heat up period of 60 minutes allowing a reasonable ambient air temperature.

m) Heaters for domestic use have the temperature and time controls built in. In commercial applications these controls should be provided by way of a remote control panel. The panel should be placed in a position that does not allow the sauna bathers to tamper with the settings.

c) The heater must be positioned in such a way to avoid overheating any adjacent walls and/or benches. Please refer to manufacturer's' guidelines for all installation details.

Electrical connections

All electrical works should be in accordance with current IET Regulations.

Heater guards

Sauna heaters in commercial applications of all types should be protected by a stout timber guard rail fitted in such a way as to protect bathers from accidental contact with any part of the hot heater or rocks.

Maintenance

A commercial facility installation should be cleaned daily paying particular attention to the benches and floor. The benches should not be soaked when cleaning, but "sponged" and any excess moisture removed. Ensure the door is left open after cleaning to aid proper ventilation. . Heater rocks, heater and electrical connections and equipment require regular servicing in accordance with manufacturer's instructions.

However, water buckets must be emptied and cleaned daily as the water can be warmed to a point where microorganisms can grow. Those which have liners may be dried after cleaning, but please note that the older type wooden buckets rely on being kept wet to stay watertight. If you dry them out they will crack and split. The advice therefore is to wipe them out with a disinfectant on a regular basis using a cloth. Users must avoid at all costs putting chemically treated water from a pool on to a sauna heater.

Safety
The following points of safety should be addressed.

1. The sauna should not be used by pregnant women, children under 4 years, unsupervised children under 8 years or those with any medical condition without specific medical approval.
2. The sauna should not be used by any person under the influence of alcohol or drugs.
3. Surfaces should be kept clean and free of oil or grease to prevent slipping, tripping or the spread of bacteria.
4. A stove guard should be fitted to prevent burning by users within the cabin.
5. All electrical controls should be out of the reach of users.
6. Doors should open outwards to ensure that users can exit without problem should panic occur.