

## Underfloor heating system

BOEN hardwood flooring is an ideal floor covering for placing on top of under-floor heating systems. It looks attractive and has favourable thermal resistance properties.

### General information

A well-functioning under-floor heating system, hot water or electrical, results in ideal thermal distribution throughout the area to be heated, giving maximum comfort. It is therefore necessary for the floor-covering to have good thermal conductivity, i.e. low resistance to heat transmission.

There are many different types of under-floor heating systems available, e.g. electric cable, hot water pipes and low voltage foils, the majority of which can be used together with BOEN hardwood flooring.

For concrete screeded floors, BOENs 14 mm (for glue-down or floating) or 10 mm Prestige (for glue-down only) should be used. Pipes and cables must be covered with a min. of 30mm concrete. This process must be carried out by professionals.

### Major requirements concerning concrete screed

The screed must be laid according to contractual specifications and Planning Authority requirements. When overlaying screed, moisture must not exceed 1,5 % CM or max. 90 %RH when the hardwood flooring is laid. Ideally the screed will have been laid at least 4 weeks prior to the heating system is being used. The first time the heating system is used it should be run at 2/3 output for at least 2 weeks so that escaping moisture can evaporate without causing damage and the screed can dry and attain its final moisture content.

1 week before the hardwood flooring is laid the heating should be reduced to approx. 18° C/64 °F.

### Laying BOEN hardwood flooring

If the heated under-floor is a concrete screed, this should first be covered with a layer of suitable non thermal resistant underlay as a compensation layer and for muffling step sound. The electrical cables or waterpipes must be covered by 30mm reinforced concrete / levelling screed.

For sports floors, Boflex P1 has special requirements apply, please contact BOEN Bruk AS.

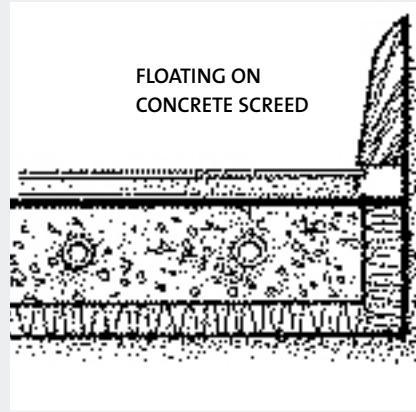
Before laying commences refer to BOEN's installation instructions for floating floors which provide specific details of site requirements.

Preference should be given to fully adhering the boards directly to the subfloor. However, the boards can be glued continuously along the tongue and groove using a suitable adhesive.

The hardwood flooring boards, which are pre-packed in a heat-shrunk wrapper, must not be opened until immediately before they are to be laid. About two days after the hardwood flooring has been laid, the temperature of the underfloor heating system may be gradually raised over a period of one week until the desired temperature has been obtained.

The under-floor heating system must be regulated to ensure a max. effect of 60 W/m<sup>2</sup> with a sub-floor surface temp. not exceeding 27°C / 83°F, with a room temperature of 20 - 22°C / 68 - 72 °F. RH should be maintained between 30 - 60 %. Heat must be evenly distributed under the hardwood flooring. No carpets with insulating effect must be used on top of the floor as this accumulates heat.

14 mm parquet  
Moisture barrier 0,20 mm  
Suitable underlay  
Concrete screed  
Heating tube or cable  
Insulation



Thickness	Thermal Resistance	Thermal Conductivity
10 mm	0,07 m <sup>2</sup> K/W	0,15 W(mK)
14 mm	0,10 m <sup>2</sup> K/W	0,15 W(mK)
23 mm	0,18 m <sup>2</sup> K/W	0,15 W(mK)
Boflex	0,27 m <sup>2</sup> K/W	0,09 W(mK)

### FURTHER INFORMATION

For further advice and technical information, please contact BOEN Bruk AS.