Parmate™
Engineered Hardwood Flooring

Guidelines for using Parmate flooring with Underfloor Heating

Underfloor heating is becoming a more popular way to heat domestic buildings. With the move towards more heat efficient construction this type of heating is seen as a good solution to meet the required the requirements of property owners in maintaining constant levels of warmth and giving a cost efficient option. It is important however that the potential problems with underfloor heating and timber flooring are understood.

The subfloor

Typically the underfloor heating system is either constructed with PE-pipes, filled with warm water, embedded in a screed or electric matting under a screed.

- The use of a 'floating' construction of the screed is not unusual in normal building practice. In this instance, 'floating' means the screed is laid on a heat isolation layer, usually a minimum 65 mm to prevent cracking. If the layer is not installed correctly localised spots where heat is lost downwards, into the screed, rather than being focussed upwards, can occur. This means the timber flooring moisture content can vary which brings different levels of stress to the floor.
- A screed in a normal situation may be considered to be dry in relation to its acceptability to lay a timber on, i.e. below 5.5%, but a normal "dry" screed in relation to underfloor heating may be considered to be 'wet'. This may in turn cause problems with joints opening in the timber floor or poor adhesion.
- The condition and strength of the screed must be of the highest level as the potential stresses from underfloor heating can be considerable. A poor quality or poorly laid screed can affect the subsequent behaviour of the timber flooring above.

Ensure that the screed is of a good quality and the moisture content is acceptable prior to the installation of the timber floor.

Checks before laying Parmate flooring

It is generally accepted that the underfloor heating system should be run before installation of timber flooring. Consultation must be undertaken with the system manufacturers to determine the required procedure in relation to timber flooring. A typical example may be as follows:

- The screed must be mature: Cement > 28 days, Anhydrite > 7 days
- Maintain for 3 days at temperature of 25°C
- Raise the temperature by 5°C / day to the maximum temperature of the system
- Maintain for 4 days at the maximum temperature of the system; usually not > 60°C
- Allow the screed to cool slowly, approx. 5° C a day. If cooling occurs too quickly it can cause cracks in the screed which may damage the pipes or matting
- Ideally the timber flooring should be laid immediately after cooling. If the screed is not laid within 7 days the heating cycle should be repeated (increase by 5° C /day, hold 1 day at max., cool down with 5° C/day)

Maintenance of the temperature levels is important. All changes in temperature with any under floor heating system should be gradual and not excessive. The figures quoted relate primarily to the temperature of the water based systems but there will be corresponding figures available from manufacturers of electric systems.

The process described is designed to remove residual constructional moisture, bring the screed to its 'in service' moisture content and leave the floor ready for laying a timber floor but without compromising the integrity of the screed. In **all** cases the manufacturer of the heating system should be consulted with regard to the preparation process / installation checks.

Laying the floor

When it is established that the heating system is working effectively it is possible to proceed with laying the Parmate flooring; see the laying instructions. Some timber species may be described as as 'interlock' grain; such species are unsuitable for use with underfloor heating systems. Examples of species not suited for use with underfloor heating includes Tasmanian Oak, Spotted Gum and other timbers such as Wenge, European Beech, Maple, Kempas and Jatoba. It is not recommended that these timber species be used with underfloor heating.

The adhesives manufacturer must be consulted with regard to application procedures in relation to the installation. N.B. It is important that all adhesive residues are removed immediately from the surface of the flooring.

Key points with regard to the installation include:

- ► The surface temperature of the screed must be below 20°C at the time of laying
- ► The relative humidity of the room must be below 60% before, during and after installation.
- ► Allow the adhesive to dry and the floor to stabilise before increasing the temperature
- ► Always increase / decrease the temperature in small steps

After completion

It is important that the owners of underfloor heating systems appreciate that the running methods used by them can affect the stability of their timber floors. Wherever possible underfloor heating systems should be set at a 'comfortable' temperature and allowed to run constantly.

Any temperature changes made should be in small increments so as to allow the floor to adjust to the changes. It is accepted by the flooring industry that floors with underfloor heating should not have a surface temperature above 27º C.

Care must be taken if large thick rugs are to be installed on the floor as these may cause a significant increase in the temperature of the floor in localised areas and in turn this may bring different levels of stress to the timber flooring. If possible this should be avoided.

Parmate timber floors with underfloor heating will react to other factors, such as changes in moisture content, in a similar manner to other engineered flooring or solid timber floors. Therefore information should be provided so as to make the floor owner aware of the potential effects of humidity, poor maintenance, etc.