element7

SUB-FLOOR REQUIREMENTS

LEVELS

All sub-floors must be flattened to the following tolerances:-

+/- 3mm per 3 linear metres in all directions for sub-floors that are prepared for a wide-plank floor covering.

+/- 1mm per 3 linear metres in all directions for sub-floors that are prepared for a patterned floor covering. Patterned floors include parquet herringbone and chevron blocks, parquet panels, leather panels, metal pavers and metal blocks.

CEMENT SCREED

Screed must have a moisture content less than **3%** and a relative humidity (ErH) less than **75%** when tested with a BS 8203 hygrometer. Anhydrite screed must have a moisture content less than **0.3%**. Measurement can only be undertaken **48 hours** after heating systems and dehumidifiers have been switched off.

Hygrometer testing involves the drilling of a 16mm (width) x 50mm (depth) hole into the screed by the sub-floor contractor, the contractor should then insert a Protimeter humidity sleeve into it; one test must be conducted for every 5 square metres. The sub-floor contractor must avoid damage to radiant under-floor heating systems, plumbing or electrical components beneath the surface of the screed. **Element7 will record the Hygrostick readings.**

Fast dry and rapid set screed and self- leveling compounds can accelerate the time taken to achieve the correct moisture levels.

JOISTS

Plywood must have a minimum thickness of 12mm for a fixed wood floor, or 18mm for use above under-floor heating. The plywood must be screwed to the joists at 300 to 400mm centers.

Chipboard must have a minimum thickness of 18mm, be glued at tongue and groove and screwed to the joists at 300 to 400mm centers.

All sheet joints **must** be staggered, sheets cannot be joined at door thresholds, **a single sheet must traverse the threshold**. Sheets must have a moisture content of less than 10%.

UNDERFLOOR HEATING THERMOSTATS AND FLOOR SENSORS

Digital dual sensing thermostats (air and **floor** temperature sensing) should be incorporated with all radiant under-floor heating systems. The remote floor sensors (probes) should be calibrated to ensure that the maximum tolerated surface temperature of the **floor itself cannot exceed 27C**.

Setting the floor sensors to allow a maximum of 32C on the underside of a typical 20mm thick engineered wood floor, would regulate the maximum floor surface temperature (the topside of the plank) to 27C. Remote floor sensors (probes) can fail therefore 2 sensors should be used for every 10 square metres of floor as replacement is both damaging and invasive.

OPERATION OF UNDER-FLOOR HEATING SYSTEMS PRIOR TO FLOOR INSTALLATION.

The heating system should be activated and the temperature increased in daily increments of 5C, ie. day one 5C, day two 10C, day three 15C until the maximum temperature is reached.

The maximum temperature should be maintained for at least 48 hours or in the case of cement screed, until the correct screed moisture levels are achieved **(see cement screed).**

The heating system should then be cooled observing the same 5C adjustments per day.

When the heating system has returned to the lowest level, switch the heating system off for 48 hours.

Re-activate the heating system and once again increase the temperature by 5C per day until the installation surface temperature of the sub-floor of 15C is reached.15C should be maintained throughout the installation period.

The heating system cannot be operated until floor protection has been removed without exception.

ATMOSPHERIC CONDITIONS.

The atmospheric relative humidity (RH) should not fall below **40%** or exceed **60%** and room temperatures must remain between **15** and **22C** during installation. Post installation, the same relative humidity levels must be maintained, and the floor surface temperature must be regulated to allow a maximum temperature of 27C