



# URBANE LIVING

## INSTALLING WOOD FLOORING/PARQUET

### Sub-floors:

Having the best sub-floor means achieving the best results in creating a timber floor.

### Screed:

The screed, or generally the load-bearing layer, constitutes the support which must give adequate resistance to the various mechanical stresses imparted by the floor itself and the floor in use, like static and dynamic loads.

The screed is always laid on a vapour membrane (on upper levels) or on a vapour barrier (on ground floors or above basements) for insulation. The screed must be gapped and separated from the walls (perimeter joints) by suitable strips of compressible material.

To lay the timber floor the screed must have the following characteristics:

- compactness in its full thickness
- sufficient and constant thickness (5-7 mm cement screed; 3-5 mm anhydrite screed).
- inflexibility, especially in areas where pipes pass below
- protection against water seepage and formation of condensation
- hard surface
- absence of live cracks and fissures
- dimensions, planarity and horizontal position
- level of surface texture
- cleanness
- moisture content of laying level and walls (1.7% by weight for the cement screed; 0.3% by weight for the anhydrite screed).

## CURING AND MOISTURE RETENTION OF THE SCREED

SCREED TYPE	SCREED THICKNESS	HARDENING TIME (days)	MINIMUM DRYING TIME IN IDEAL CONDITIONS (days approx.)	RESIDUAL MOISURE CONTENT OF BALANCE (%)
cement	5 cm	28	approx. 60	1,7
cement	8 cm	28	approx. 140	1,7
cement	10 cm	28	approx. 200	1,7
anhydrite	3 cm	15	approx. 28	0,2
anhydrite	5 cm	15	approx. 40	0,2
fast-drying hydraulic binder (300 kgs/m <sup>3</sup> )	5 cm	3 hours	approx. 1	1,5

The pre-finished parquet can be laid on old rigid floors, like tiles, ceramic, marble and derivatives, stones, etc. old floors in timber boards or panels.

### Heated screed:

The heated screed is a cement base of hydraulic binders or anhydrite, with water pipes running through its thickness to heat the spaces instead of by means of radiators or other external systems.

### Laying conditions:

Having verified all the requirements necessary for laying the timber floor, the moisture content allowed, determined by carbide hygrometer, cannot be greater than the values of:

- cement screed or hydraulic binders (1,7%)
- anhydrite screeds (0,3%)

The gradual warming up of the heating system has the function of stabilising the base, slowly reducing any tension and bringing it to a drying level corresponding to that of balance with the ambient conditions in which it will find itself, once in service, so that it cannot transfer moisture to the parquet.

The minimum thickness of the screed must be of 6cm of which 3 above the pipes. Before putting the heating system into action the screed must have a minimum curing time of at least:

- cement screeds: 21 days
- anhydrite screeds: 7 days
- fast-drying screeds: 3-4 days



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The heating effect is obtained by gradually increasing the fluid temperature by about 10°C per day until a temperature 10°- 20°C above the operating temperature is reached. This temperature is then maintained for a further 10 consecutive days, with the premises suitably ventilated. This is followed by the cooling process, which involves gradual reduction of the fluid temperature by 10°C per day down to the system's minimum rated temperature. Immediately after this, the temperature is gradually returned to normal operating conditions, capable of guaranteeing the specified ambient temperature of 20°C, with ambient relative humidity between 45% and 60%.

In order to maintain the dimensional stability of a wooden floor installed on a heated and/or cooled concrete substrate, the local microclimate must first be checked, and the conditions must be carefully calculated to ensure that two parameters are strictly complied with, both with constant conditions and during transition phases:

- the temperature of the parquet which is to have direct heating and/ or cooling functions must be within the range of 15-27°C
- the humidity of the air above and below the wood must be within the range 45-60%

Obviously, failure to comply with this range will inevitably cause problems, leading when the heating system is operating during the winter to the shrinkage of the wood, with the creation of cracks which will be larger in floors consisting of wide planks and made of types of wood with lower dimensional stability, while in summer the problems will usually take the form of swelling, with the formation of undulations in the surface, or even raised, detached sections.

Since the temperature and humidity at which wood is stable are also the optimal conditions for human comfort, there is no better remedy than to take care to humidify rooms in winter and remove humidity in summer, ensuring that the building really offers the best response to people's physiological needs.

To limit the formation of fissures of the parquet it is advisable to avoid covering the floors with carpets or other finishing materials. The timber floor can be laid on the heated screed using the glued or floating method.

## **Laying wood floors:**

floors can be laid using the glued or floating method.

In addition to parameters specific for the type of laying technique and to parameters relevant to the surface condition, there are others which should not be underestimated so as not to compromise the final condition of the parquet. They are:

- environs must be completed with fully glazed frames;
- walls must be finished, dry and the moisture content 2%;
- vapour barrier must be in place;
- temperature of the rooms between +10°C and + 30°C;

## **Laying method: glued**

Grinding, generalized consolidation and surface proofing are not usually allowed in heated screeds. It is always advisable to apply a suitable primer to improve bonding of adhesives used.

The surface temperature of the screed at the moment of laying must be approximately 15-20°C with a relative air moisture content lower than 60%.

After the process of laying the floor the temperature must be approximately 15-20°C with a relative air moisture content lower than 60%.

To lay with glue, the sub-floor must have the requirements as specified in the chapter regarding sub-floors. Once checked that all parameters have been met, proceed as follows:

- Lay the glue on the sub-floor which must remain dry, strong and clean;
- The glue will be laid with a spatula of the number suited to the finish to be laid and perpendicular to the laying direction;
- Respect the opened tin life of the glue.

## **Laying method: floating**

This is carried out like on a non-heated screed. The thermal resistance of the condition of the layer of acoustic insulation (approx. 2.5mm) of compressible material which should be laid under the floor finish should be considered when assessing the overall thermal resistance.

Any screed able to resist the static and dynamic loads required for the floor is suitable for laying the floating parquet. The floating parquet is always laid on a vapor membrane (or barrier if necessary) or a layer of acoustic insulation, usually composed of an underlay of compressible material or by a felt approximately 2.5mm thick. During laying the membrane or vapour barrier should be turned up on the walls behind the skirting board leaving a distance from the walls proportional to the dimension of the floor.

In general a perimeter gap of approx. 1 mm is recommended for a pavement of 4x4 m approx. For larger sizes the perimeter gap must be proportionate. In any case, for gaps greater than 1 cm transversely with respect to the wooden element, an expansion joint is necessary. Around the columns or other element projecting from the screed, a gap of approx. 1 cm is recommended. In respect of ramps and joints with other floors suitable expansion joints with joint cover profiles should be used.