

### 1. Before laying

The building must be weather tight. All indoor jobs, which may induce moisture to the building, e.g. concrete casting, priming of paintwork etc. must be completed before laying. The relative humidity (RH) in the building must be in line with the expected RH when the building is in use. (In locations where a heating system is used, this must be installed and periodically – and constantly during the heating season – be in operation). The RH should be controlled so that the total fluctuation of RH during the year does not exceed 30%. (See curve valid for boards with standard moisture content).

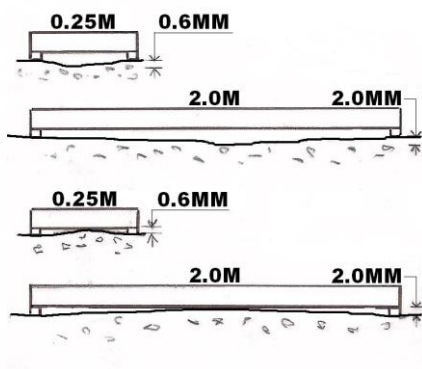
In concrete subfloors the maximum equilibrium moisture content allowed is 90% RH and in wooden based subfloors maximum 12% moisture content.

The bundles of floor boards should not be opened until prior to use.  
NB: Read the laying instruction carefully before beginning the laying.  
In case of doubt, please contact the KTL support team.

### 2. Flatness of the subfloor

Before laying out the moisture barrier, the subfloor must be levelled to a maximum deviation of  $\pm 2\text{mm}$  on 2 metre straight-edge.

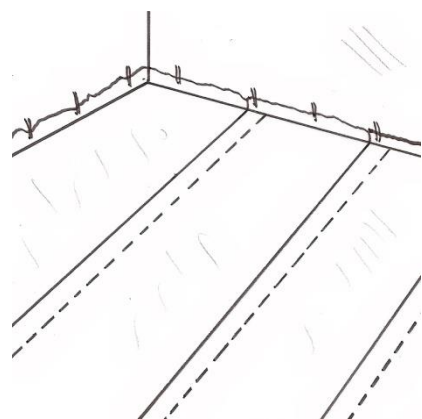
The surface must be smooth; cavities and other roughnesses must be within  $\pm 0.6\text{mm}$  on a 0.25 metre straight-edge.



### 3. Moisture barrier

On concrete floors, a moisture barrier of 0.2mm PE foil (with taped 200mm overlay) is laid out and folded up the walls to the upper edge of the skirting later installed.

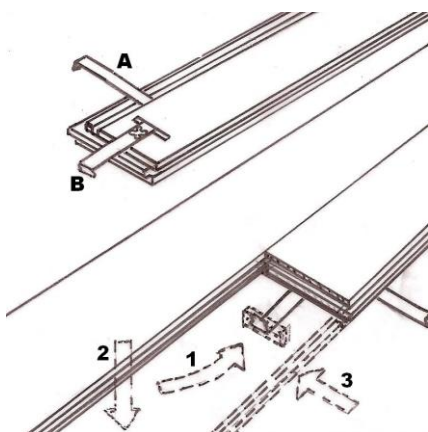
For other underlays, please consult the KTL support Team.



### 4. Clips

Clip size (A) is determined based on the expected maximum relative humidity in the building when in use, the span of the floor and the wood specie used. Since KTL floor boards come with a moisture content customized to the actual climatic conditions, the S clips (130.1mm) should normally be used. In large floors with spans over 10 metres, and in locations with high fluctuation in the relative humidity, the larger M clip (130.4mm) may be used in order to avoid over-expansion of the floor. The clips are mounted from the backside of the floor board by fastening the marked ends of the clips into the clip groove.

The floor boards are held together lengthwise by means of special X clips (B) which are mounted into the clip groove by the tongue end of the floor board. The boards are joined by bringing the groove end of the board in engagement with the tongue end of the previous board (1) before laying it over the protruding clip end and thereby locking it (2). The board is subsequently pressed sideways into engagement in the longitudinal tongue/groove joint until the traversing clips are engaged (3).



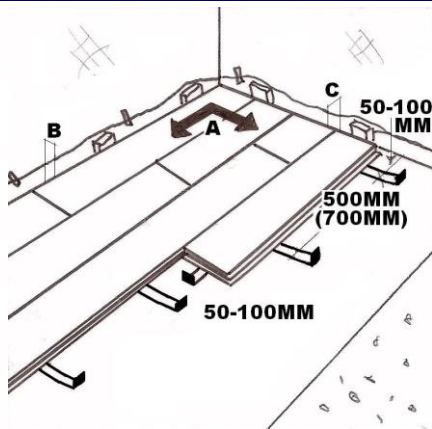
New image: Foam + masonite/cardboard

### 5. Foam underlay + possible load distributing sheets

On concrete slabs, sheets / rolls of 10mm KTL bonded foam are installed on the moisture barrier.

In larger floors (with a span over 8 metres), or where the floor is exposed to heavy impacts, e.g. from players' ball games, a load distribution sheets of 3 mm Masonite is laid over the 10mm bonded foam, followed by a layer of cardboard, 500g/m<sup>2</sup>. Both are laid without overlaps.

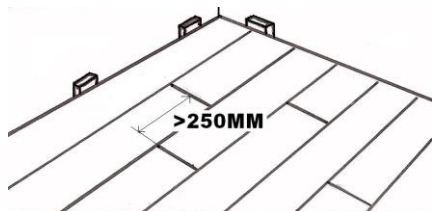
On existing sports floors with build-in elasticity, and where a lower deflection of the floor is required, a 5-6mm foam (closed cellular cross linked material) is laid, without any load distribution sheets on top.



### 6. Laying of floor boards

Floor boards are normally laid parallel with the longest side of the room. The ends of the clips point in the direction of the tongue both crosswise and lengthwise of the board, showing the laying direction (A). Mutual clip distance should be 500mm. The clips are mutually staggered between rows of boards so that they do not touch each other! Towards the gable ends of the room, the clips are placed 50-100mm from the board ends. The distance (B) to longitudinal walls must be 2mm per metre of span, min 12mm. When installing the first rows of boards, use wedges or other rigid material as packing to get straight rows of boards. Remember to remove packings after having completed the laying.

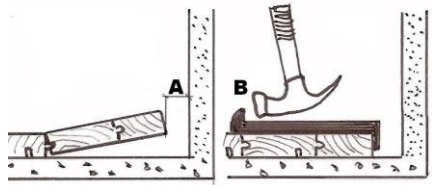
Along the gable ends of the room, the distance between wall and board ends (C) must be min. 10mm.



### 7. Board pattern

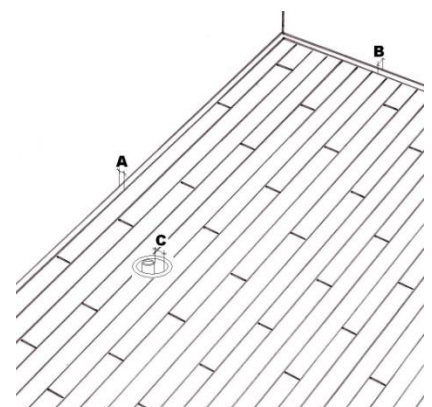
Boards can be laid in an irregular pattern, where board end joints between rows are staggered, at least 250mm.

The last row of boards is laid with the distance (A) to the wall (cf. point 5 B). If there is no clip connection to the last row of boards, this will have to be glued into the row before the last one in the longitudinal groove.



If necessary, use a joint puller (B) to slot the last board into place.

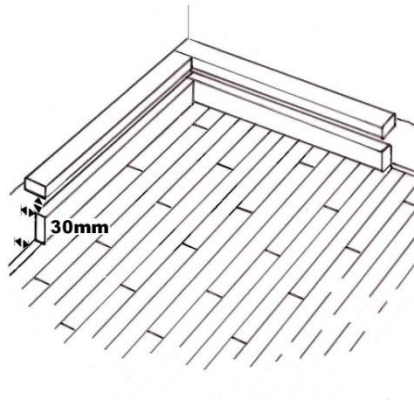
After laying, the floor can, if necessary, be protected by means of coverage with a felt, card board, 500g/m<sup>2</sup>, or Masonite. Avoid to apply tape onto the floor surface.



### 8. Distances to wall and other fixed installations

The distance (A) between the floor board and the longitudinal wall is 1.5mm per meter floor width, min. 30mm and the distance (B) between the floor boards and the end wall (gable) is min 10mm.

Bushings are mounted with an internal diameter 40mm larger than the outside diameter of the net posts. Along the perimeter of the floor, the bushings are mounted eccentrically to the net posts towards the center of the floor, to cope with any possible later expansion of the floor width (C).



## 9. Skirting

The moisture barrier is brought to the upper edge of the skirting and kept in position by the skirting profile, mounted to the wall.

Use a non-ventilated skirting profile for clip floors.