

## LAYING GUIDELINES

The following is a general indication of how to lay hardwood flooring. Ultimately it is up to the floor layer to decide on the basis of experience and the site conditions which method to apply - for how long to acclimatise the flooring and the amount of expansion allowance.

Penny Bricks & Timber Plank Floors are tongued and relief grooved on the back face and are normally between 4" (95mm) and 8" (200mm) wide. The planks are dimensionally stable and require fixing by secret nailing at 45 degrees through the base of the tongue. However, unlike strip flooring it is essential to provide additional fixing through the face of the plank as boards more than 5 times wider than their thickness may warp or bow slightly across the width if subjected to a range of seasonal temperature changes which are usual in centrally heated environments, hence the extra fixing. Fixing is normally achieved by:

1. Secret nailing plus face nailing, punching in the nail head and filled with recommended filler.

OR

2. Secret nailing plus screwing through the face of the board but hiding the screw head under a cross grained wood pellet. The clearance around the screw shank should not be so tight that the floor is prevented from expanding and contracting.

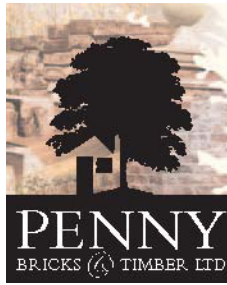
All board widths over 105mm should be face fixed (this being 5 times the depth of 22mm) to every joist or batten. For boards up to and including 175mm, should have 2 face fixings at each 300mm intersection being between 15mm and 20mm from the board edges. Where wider boards are used, a minimum of 3 fixings should be used and these should be spaced uniformly between the 2 outer fixings.

### **1. Plank Floors Fixed to Existing Boarded Floors**

New planks should be laid at 45 or 90 degrees to the direction of the boards and nailed at intervals of no more than 300mm.

The existing sub floor should be in sound structural condition and level. It is usual to punch in any nails and check for high points with a straight edge before levelling the floor with a floor sander. Where the floor is required to run in the same direction as the existing boards, the floor may be overlaid with dry exterior grade plywood (minimum thickness 6mm) or strips of plywood fixed at 300mm centres. In each case the strip floor is fixed through the ply into the existing floor.

If the floor is a ground floor over a cavity or unheated room, a vapour barrier should be placed between the new and old floors to prevent an increase in moisture content of the strip. Do not use polythene sheet as this may cause sweating and increase the moisture content. It is advisable, but not essential, to insulate the existing floor.



## **2. Plank Floors fixed to existing Chipboard, Sterling board or Plywood floors.**

The principle is the same as in 1. with the following exceptions:

- The floor should be laid at 45 or 90 degrees to the joists and nailed where possible into the joists but in any event at 300mm centres or less.
- The chipboard or plywood must be securely fixed to the joists.

Under normal circumstances, Plank Floors should not be fixed to a floating chipboard floor because it is not sufficiently rigid.

## **3. Plank Floors fixed directly to timber joists.**

This is acceptable provided the joist centres give adequate support, i.e. 300mm centres or less. This should only be considered if the space below the floor is fully heated.

Hardwood flooring should not be fixed directly to ground floor joists over a ventilated cavity. The timber will absorb moisture from the atmosphere and expand.

It is recommended that a flooring grade chipboard or plywood at least 18mm thick be first fixed to the joists followed by a vapour barrier. The floor is then fixed as in Section 2.

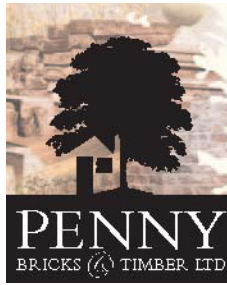
This method offers other advantages:

- The chipboard provides a useful platform for all the second fixings, plaster work etc., bearing in mind that the hardwood floor can only be fitted when the house is fully dried out.
- It makes for easier, safer and faster floor laying & traps the vapour barrier.
- Floor joists are normally set at 400 to 500mm centres and the 18mm thick board should be used so that the flooring can be nailed at the correct spacing i.e. 300mm or less (see 4B below).

## **4. Plank Floors fixed to softwood battens on Concrete**

Plank Floors may be laid over concrete floors by fixing dry, pre-treated softwood battens to the concrete at the correct centres (see B. below) and nailing the strip at every intersection to a batten taking note of the following:

- The battens may be fixed by gluing with a recommended adhesive or by screwing and plugging. All fixings should be sunk below the surface of the batten.
- The distance between the centres of battens should be less than or equal to the shortest length of the flooring but no more than 300mm.



- The minimum thickness for a batten is 25mm (20mm if the nail is driven at 30°) and the normal width is 44mm. If insulation is to be laid between the battens, they may need to be 50mm deep or to suit the depth of insulation. Battens should be laid in short lengths (1.8 to 2.1 metres) with a 200\250mm overlap (side to side).
- The concrete should be level and dry & as a “Belt & Braces” precaution it is advisable to lay an additional vapour barrier (building paper) above the concrete.
- The concrete slab should be fully dried out with maximum moisture content of 5% (see “Sub-Floors” on the page 'Site conditions and other factors'). The concrete slab must contain an effective damp proof membrane.
- Any under floor pipe work should be fully pressure tested prior to laying the floor. All pipes should be effectively insulated to prevent hot spots under the floor. If not, this may cause localised shrinkage. NB. When nailing a strip floor to an existing timber floor, care should be taken to avoid any under floor services - pipes, wires etc.

## **EXPANSION ALLOWANCE, SETTING OUT & FIXING ALL SOLID FLOORS**

Penny Bricks & Timber floors are machined to very accurate tolerances and the timber is generally dried to the lower end of the moisture content range to ensure stability in modern heated buildings. In order to prevent excessive expansion it is essential to make allowances. Always leave an expansion gap:

- Around the perimeter of the room, 10mm to 12mm for a small room and 15mm to 20mm for a larger room.
- In addition a series of intermediate expansion gaps may be left across the width of the floor. These may be necessary when the floor is likely to expand after laying and especially with a large floor. E.g. A floor acclimatised and laid during winter in full central heating will tend to expand in summer and so may require intermediate allowance, but a floor acclimatised and laid in summer should not require intermediate expansion gaps.

Floor laying may be started adjacent to the longest wall, in which case the first 2 or 3 rows are set to a line & fixed through the face with the tongues pointing away from the wall. If the shape is complicated or includes several rooms, laying may be started midway across the room. A line running through the rooms is set out and adjusted so that the floor is either parallel to one or more walls or, if the walls are out of parallel, the best line is followed. For this method, two lines of plank are placed groove sides together, with a loose tongue of plywood inserted into the grooves. Each strip is face nailed or screwed (and pelleted) to the sub-floor. Ensure that these rows are laid in a perfectly straight line and work outwards to each side of the centre line leaving expansion gaps where and when necessary. With the exception of the first 2 or maybe 4 rows of planks, which are face fixed, the remaining planks are fixed using floor nailer. Where the wall obstructs this use, the planks are drilled and nailed by hand. All flooring is sanded and sealed in situ.