

*This information should be considered to be informal and non-binding. The products must be used according to local conditions and materials. Instructions must be read carefully and followed closely. Where no previous experience is available, or in cases of doubt, test the product in an inconspicuous area.*

## WOOD and DERIVATIVES

Wood or its man-made derivatives (chipboard/plywood/T&G/floating timber floors) will be subject to movement under load, temperature and humidity. Rigid tiles cannot absorb deflection or compression and will break or break apart from their substrate. To test a floor for movement, fill a glass fully with water until the 'meniscus dome' is apparent on the surface, then walk/jump around the glass and check for spillages. If spillages occur then remedial action needs to be taken. Install an overlay of 18mm exterior grade WBP plywood with staggered joints, suitably sealed on its back, face and edges with ibotac and screwed down at 300mm centres and 150mm centres along the board edges.

## CHIPBOARDS



- Common flooring material.
  - Low strength, sags under load and vulnerable to water.
  - "Green" water resistant grade are normally specified on floors now.
  - Usually fixed with ring shank nails.
  - Needs to be screwed down and joints tight.
- Can be tiled directly with special adhesives if done properly.
  - Some grades have a peel-off protective layer (which can leave a wax residue) or special coatings – both need to be dealt with.
  - **Safest route, however, is to overboard.**
  - **PS – chipboard manufacturers say it is not suitable for tiling!**

## FLOATING FLOORS (T&G – Tongue and Groove)

By definition, a floating floor is a floor surface that is only connected to itself and has clearance around the edges. This should allow it to undergo natural movement without warping. They can be constructed in many different ways, e.g.:



- T&G chipboard over insulation
- T&G chipboard on isolation over battens
- Screed over insulation
- Heated screed over insulation
- Noise isolating floors (fermacoustic, special chipboard)

If the floor is sound, exhibits minimal movement under foot and all joints are secure, the floor can be tiled on directly, **otherwise over-board it.**

## TIMBER FLOORS

- The floor must be able to support the expected load – it may need additional bracing or joists.
- The floor should be ventilated beneath to prevent rot.
- The floor should not deflect more than  $0.003 \times$  the span (according to the Building Regs).
- The boards may need to be stabilized in the ambient conditions (e.g. moisture level).

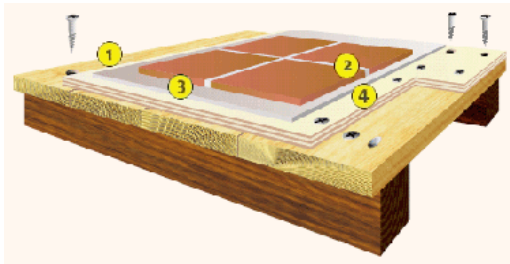
The code of practice recommends that all timber floors are over-boarded with (at least) 15mm WBP plywood, screwed down.



In our experience, what is essential is that there are no points of localised movement – e.g. un-supported board edges or weak or damaged boards. It is more important than normal to ensure good coverage of adhesive on the tile/floor and to fully bed the tile.

### OVERBOARD WITH PLYWOOD or TILE BACKER-BOARD

The most secure system for tiling wooden floors is to screw fix another layer of boarding over the top of the original timber. This increases the rigidity of the floor, prevents localised movement, and if a water resistant tile backer board is used, virtually eliminates moisture related movement. Screwing the boards down also helps prevent any pullout of fixings.



#### Stage 1: Assess and prepare the floor

Make sure that the floor will be capable of supporting the expected load. It must be stable, well supported, ventilated underneath, and level. Verify that the extra height from over-boarding can be accommodated. Brace any areas that need extra support with noggings between the joists. Any defective boards should be cut out and replaced. Screw the existing floor to the joists.

#### Stage 2: Fix the over-boarding

Use WBP grade plywood at least 15 mm thick. Prime the back and edges of the plywood with hi-flex or ibotac. Lay the boards so that the joints do not coincide with joints in the existing timber and leave slight gaps between the boards to allow for expansion. Screw the floor every 200 to 300 mm. Leave a movement joint around the perimeter.

#### Stage 3: Fix the tiles

Fix the tiles into a solid 3 mm bed of stoneset flexible sp rapidset or stoneset thick bed adhesive. Leave joints at least 3 mm wide for grouting and make adequate provision for movement (around the perimeter and dividing large areas into bays).

#### Stage 4: Grout

Leave stoneset flexible sp rapidset adhesive to set for 2 to 3 hours or leave stoneset thick bed adhesive to set for 24 hours. Fill the joints between the tiles with stoneset fine wall & floor or stoneset flexible SP grout. Use an appropriate flexible sealant for the perimeter movement joints.

## MOVEMENT JOINTS IN FLOORS

- Structural movement joints in the flooring and bed must be sited directly over and be continuous with any structural joints in the base structure.
- Perimeter movement joints are necessary where the flooring abuts restraining surfaces, such as perimeter walls, columns, kerbs, steps etc. These joints should be installed unless the distance between restraining surfaces is less than two metres.
- Intermediate movement joint requirements depend on the dimensions of the floor. In floors with less than 10 metres between perimeter joints, generally no intermediate movement joints are necessary, however they are required to divide larger areas, and these are normally placed at 8–10 metre centres in each direction. Over potentially flexible type substrates and underfloor heating, movement joints should be positioned at 6 metre centres in each direction. Additionally movement joints should be placed directly over supporting walls or beams.

## PROBLEMATIC SUBSTRATES

- DITTRA MATTING is a polyethylene membrane with a 3mm thick grid structure and is designed to act as an uncoupling layer for problematic substrates. Differing floor substrates can be overlaid with this matting to eliminate stress cracks at their abutments. DITTRA MATTING can also be used to bridge screed and masonry cracks.
- All types of wood or boarded floors are particularly affected by moisture and flex. These floors should be treated against moisture absorption and firmly fixed to its substrate by placing screws at appropriate close intervals to minimise flexibility. DITTRA MATTING serves as a waterproof membrane and as a vapour pressure equalisation layer to accommodate moisture occurring at the underside. It also uncouples the floor covering from the substrate and prevents the transfer of stresses or flex to the tiled surface.
- Uncured mortar screeds, heated screeds, floating screeds and Gypsum screeds can be subject to deformation due to residual moisture, shrinkage, load stresses or temperature changes. Using DITTRA MATTING and providing the substrate is sufficiently load bearing; the tile covering can be installed immediately.