

Installation Guidelines – Bausen Solid Flooring

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Before Fitting

- We suggest when ordering your flooring that you work on an estimated waste factor of at least 10% ensure you allow for any unusual shapes in your rooms. Timber of course is a natural material with naturally varying characteristics i.e. Colour, Texture and Grain pattern. These variations are what give timber its aesthetic appeal they do however mean that it is entirely possible that up to 5% of the product may not be usable for its intended purpose. We endeavour to meet our customers expectations with the flooring we supply, if however the product does not **DO NOT FIT THE FLOOR** contact your supplier.
- It is the sole responsibility of the installer not to install any material thought to be defective. No claim shall be entertained for any materials installed, which have visible defects or damage prior to installation of the boards. We will also not be responsible for damages due to installation, transportation or storage.
- Please note that with pre finished flooring some gapping between the boards is possible this is one reason for the micro-bevel detail. Should a virtually gap-free floor be required then your chosen option should be either: - Our Engineered Flooring (check our range of this in 15mm and 22mm) Or our Unfinished Solid Oak - whereby the standard practice of fitting, sanding, filling and re-sanding virtually eliminates gaps.

'Normal Living Conditions' needs to be achieved and maintained

- Normal living conditions means: -
 1. All wet trades should be finished.
 2. All windows and doors to be fitted/watertight.
 3. All heating/air conditioning systems commissioned and operating.
 4. Room temperature 15°C - 22°C.
 5. Sub-floor 2% moisture content – recorded and witnessed on a log sheet.
 6. Ideally a relative humidity level in room 35%-50% at time of laying - and recorded.
- All walls and sub-floors must be dry do check humidity levels, if they fall below the required criteria, you must not install the flooring. Bausen will not accept any claims due to movement if the correct moisture reading has not been recorded prior to installation.
- If a room cannot achieve levels of "normal living conditions" consistently, we can only suggest you install a humidifier or dehumidifier depending on the conditions at your own discretion. Moisture is the biggest factor of movement in solid flooring and if the above instructions are not adhered to you will have movement issues.
- BAUSEN Flooring is kiln dried to 8 – 10% moisture content (M.C.) which is the ideal moisture content for "normal living conditions." Site conditions are extremely important, timber is hygroscopic, in simple terms the flooring can absorb any moisture that is present if in situations of high levels of moisture and humidity. The reverse will apply in an environment of high temperature and very low humidity, which would then cause the timber to dry out further.
- On delivery of the packs of flooring to site they should be laid horizontally on the floor in the centre the room. Test the moisture content of the flooring through the packaging. As long as the moisture content is not higher than 11% leave the flooring in the packaging in tact for 48 hours prior to fitting. If the percentage moisture content is higher than 11% only at this point consider removing the flooring from the packaging and then stack it. Leave it in-situ for at least a week to allow the moisture content to lower to an equilibrium suitable to the surrounding room prior to installation.

Sub-floors

Concrete

- The concrete sub-floor must be extremely dry and if the floor has been recently screeded, it is very important you wait until the correct humidity level has been reached.
- Do check the correct moisture content of the slab/screed using a hydrometer it should not exceed 2%, which equates to a relative humidity (RH) in the concrete of 35% to 60%.
- The concrete slab must contain an effective damp proof membrane. It is often difficult to achieve 35% RH in the slab and in these cases a D.P.M. should be used over the slab. A suitable liquid moisture suppressant can be offered such as Sika Primer MB or even in conjunction with Sika Epocem, depending on the relative humidity of the concrete - further reference can be made on their website www.sika.co.uk. However the slab must be allowed to dry naturally to at least 85% RH before using these products.
- The sub-floor must also be level (to within 3mm over 3M) if not it should be addressed and re-levelled, by screeding / self-levelling compound (avoid using latex screeds).
- Self-levelling compounds and D.P.M. systems are available from specialist manufacturers. Your floor supplier can offer a liquid moisture suppressant through his supplier chain.

- Do ensure you **RECORD, WITNESS AND DATE, YOUR MOISTURE READINGS ON A LOG SHEET**. (See the end of these guidelines for an example template.) If you don't and there is a problem after you have no valid proof you did this.

Timber

- Even with timber sub-floors it must be dry, check that the moisture content is correct it should be at maximum 12% and within 4% of the moisture content of the hardwood flooring you are about to fit.

Over Softwood Floorboards

- The floor must be level.
- Ideally fit your new hardwood flooring at 90° to the existing floor, otherwise the old floor will need covering with plywood to prevent telegraphing of the old floors contours to the new floor.
- Use a vapour check barrier between the two floors. Don't use plastic sheeting as this will encourage sweating.
- If you need to fit the new floor in the same direction as the existing one use a minimum of 6mm W.B.P. glued hardwood plywood firmly fixed with a minimum of 32 fixings per sheet (size: 2440mm x 1220mm). Again use a vapour check barrier between the old floor and the plywood.
- If there are gaps in the old floor consider using 18mm W.B.P. hardwood plywood or OSB when nailing you may find you are following a gap in the old floor in which case only the plywood will be holding the floor thinner material than 18mm will not hold the nails.
- A moisture retarding membrane should be used your flooring supplier will be able to supply you with a Vapour Check Barrier Lay the Vapour Check Barrier with slight overlaps under the plywood the purpose of this product is not to completely stop moisture but control the rate at which it passes through to protect your new hardwood floor. Don't use plastic sheeting, as this will encourage sweating.

Over Tongue & Grooved Chipboard Floorboards

- As previously mentioned check that the floor is both dry and level taking the precautions as before. Modern P5 Moisture Resistant Flooring Grade Chipboard is strong enough to be nailed in to, however if it's not flooring grade break out of the nails can occur, seriously consider plying over it. Again use a vapour check barrier membrane (not plastic sheet as this will encourage sweating).

Over Ground Floor Joists

- These must first be covered with Plywood or P5 Moisture Resistant Flooring Grade Chipboard then fit as above using a Vapour Check Barrier. Hardwood flooring has to be viewed as a decorative product any moisture variation from the ground / air vents will cause your hardwood floor to move.

Over First / Second Floor Joists

- In this case the flooring can be fixed directly to the joists if required. The maximum width of the joist spacing being the shortest length of the flooring to be fixed. In many cases joists are spaced wider than this, in which case overlay the joists with 18mm WBP hardwood plywood or OSB.

The Installation

Racking Out

Racking out is an essential part of fitting a hardwood floor often overlooked. It is best practice for a fitter to "rack out" first in order that the floor is laid properly.

Racking out ensures: -

- A good spread of the natural colour variation.
- That the boards do fit together and are of the same width in the same row.
- Boards aren't running out. – These boards can then be used later at the end of a row when trimmed.
- A final check for any defects such as face checks, ring shakes etc.. including any knots, which will not fit into the pattern of the floor.
- Header joints are staggered correctly to avoid weak spots or unsightly patterns : Stair-casing, "H" joints.. etc... It is important that no adjacent header joints are within twice the width of the board of each other (or 150mm which ever is the greater).
- It is at this point where the industry accepted margin of up to 5% of the flooring may not be suitable for its intended purpose is filtered out by the fitter. Any higher incidence, should it ever occur, should be immediately reported to the supplier where by replacement material can be supplied as soon as possible to site in order to resolve the problem.

Methods of Installation

We strongly advise Bausen solid timber floors should either be nailed, glued or Nailed and Glued directly to the sub-floor. Do not glue the tongue and grooves together this creates a floated floor.

Whilst this is normal practice to use this method for engineered flooring it is not suitable for solid timber floors **PLEASE DO NOT FLOAT A SOLID WOOD FLOOR.**

- A floated floor is a floor that is laid on but not attached to the sub floor.
- By just gluing the tongue and grooved joints together creates a floated floor.
- In simple terms each piece of solid hardwood floor plank is unique to every other plank fitted next to it in terms of: - rate of growth; sap content and it's "cut" when converted from the log.
- Each plank will move differently in its reaction to the changing humidity that naturally occurs throughout the year with the changing seasons from summer to winter.
- Floated solid hardwood floors will panellise and the resultant stresses can cause the floor to fail.

Glue Directly to Sub-Floor

- This is an excellent method of fixing with today's modern solvent free adhesives however we would recommend that it's use is limited to boards up to 125mm in width.
- If gluing directly to a concrete floor ensure any laitance is removed at least a week before commencing (then double check the moisture content).
- The adhesive is spread over the sub-floor and the boards are stuck directly to the sub-floor.
- All manufacturers' glues vary and it is the discretion of the end user to see the manufacturer's guidelines when sticking down the sub-floor. Glue guns and glue beads vary, so it is important that detailed instructions should be in accordance with specific manufacturer's instructions.
- For example: Sika T54 Trowel Grade Adhesive or Sika Bond (with or without the silent layer mat) www.sika.co.uk
- Application of the Sika T54 is with a 4mm V-notched trowel coverage with a standard 13kg unit is between 18-20m².
- Ensure expansion gaps are maintained on all perimeters to allow for expansion. See expansion gaps.

Secret Nailing

- This is an ideal method of fitting a solid floor and is best achieved with a portable nailer guiding nails through the tongue of the flooring at 45 degrees. Nail at 150 – 200mm centres and up to 50mm from the ends of boards to avoid splitting the wood.
- We would recommend limiting the use of a nail only method for hardwood flooring planks up to a maximum of 150mm wide, above this width both nail and glue down should be employed together.
- If using timber battens they should be kiln dried having a maximum moisture content of 12%. They should be placed at intervals of no more than 300mm apart.

Adhesive Backed Underlay

- This can be a quick method of fitting a floor please do not use this method however for solid planks above 125mm wide.
- With this method if a DPM is required then this must be laid down first, as jointing tapes simply can't work with this method.

Two brief methods

- One method is to lay the first row of boards 15mm from the longest, straightest wall. The boards must follow the line of the wall. If the wall is not straight, you must use the first board(s) to scribe the shape and create your own straight line.
- Another method is to find the centre line down the middle of the room for aesthetic appearance this could be along the length of the room and working away from the centre with the leading tongues of the flooring towards the walls. The use of a loose tongue to form a connection between the two central boards can be made with a strip of 6mm plywood. Measure and off set slightly from the centre line, if required, so that the final boards nearest to the wall are large enough to still allow suitable fixing.
- Ensure expansion gaps are maintained on all perimeters to allow for expansion. See expansion gaps.

Expansion Gaps and Movement in Timber Floors

All solid floors will move a certain amount even under correct installation. It is normal to expect this during certain times of the year, as different levels of humidity occur, that the width joint between boards will open and close. Note of course that wider boards will cause wider gaps and narrower boards will cause more but smaller gaps.

In warmer weather windows tend to be open and humidity will increase thus causing the flooring to absorb the increased moisture, this will cause the flooring joints to become tighter and close up. In winter months, the heating will raise the temperature to be comfortable, this will dry out the floor thus making the boards shrink slightly, consequently the joints between the boards will increase. The cycle will repeat over the years, but if fitted correctly, will only expand and contract within the allowed tolerances.

Expansion Breaks Between Rooms

Thresholds must be used in doorways. This applies to where the floor moves from room to room in its width, if this occurs through it's length then no break is required.

This prevents large area expansion problems, and also relieves uneven stresses that can be caused by the differential movement in different rooms.

Expansion Breaks For Large Areas

- Engineered Flooring (fully stuck down to the sub-floor) No limit on width or length.
- Engineered Flooring (floating) 12M maximum length 8M maximum width.
- Solid Flooring (In modern style well insulated properties) 6M maximum width without intermittent expansion. No upper limit for length.
- Solid Flooring (In older style properties) 3M maximum width without intermittent expansion. No upper limit for length.

Perimeter Expansion Gaps

A 15mm expansion gap should be left around the perimeter of any room for rooms up to 3M wide adding an extra 3mm per metre each side for every metre over 3M. Intermediate gaps should then be introduced over 5M.

Intermediate expansion breaks can be made by either of two methods: -

- Between boards at about 800mm centres across the width should be made these can be in the form of temporary 2mm packers. Visible lines will be noticeable every 800mm.
- Use of temporary 0.3mm spacers packed between each row of boards.

Apply expansion gaps around any fixed object for example: - fire surrounds, pillars and especially radiator pipes!

Underfloor Heating

We do not recommend Bausen solid hardwood flooring for underfloor heating.

Aftercare

Bausen Flooring General Wood Care Guidelines for Flooring

Simple precautionary steps to avoid damaging your Bausen Hardwood lacquered floor:

- Protect from chair and furniture leg scratched by using felt or other suitable products.
- Avoid the introduction of sand, dirt, grit and grease, by placing a floor mat at the door, it will also help prevent outside moisture.
- Daily maintenance by wiping or vacuuming, surplus water must be avoided.
- Do not allow standing water do remove any spilt liquid immediately.
- Remove dirt and stains with gentle detergent and a damp (not wet) sponge/cloth.
- Any spillages must be wiped up immediately, do not allow standing water.
- Sunlight – Direct sunlight can discolour any hardwood floor especially darker timbers. Where practical close curtains and blinds or even add sheer drapes to protect it from the suns intense UV rays

For any further aftercare advise on products to maintain your hardwood floor, please contact your supplier.
