

Hardwood Installation Guide

Conduct a site survey to determine practicability of installing a Hardwood floor.

Ensuring:

1. All gutters and down pipes etc are properly placed to drain away water from the Structure
2. All damp proof courses are in good condition and inspected. Solid hardwood flooring should not be installed below the soil line.
3. All wet trades (plastering, tiling, painting etc) have completed their work.
4. Central heating, air conditioning, ventilation is in place and operating (approx 3-5 day prior to delivery).
5. A new concrete slab should be flat and to specifications. A damp proof membrane must have been installed and the concrete dry 3% moisture content.
6. Driveways and pavements should preferably be installed prior to installation. The building is enclosed and weather tight (roof, doors, windows)
7. 6mm black polythene should be installed over exposed soil in the crawl space underneath the floorboards and joists on the ground floor. Cross flow ventilation below suspended ground floor joists should allow vent openings to equal 1.5% of the crawl space area e.g. a 100cm² crawl space should allow 1.5m² of vent openings.
8. Research has determined that a 100m² crawl space house will draw some 70 litres of water every 24 hours out of the soil inside and outside the foundation and send it up into the house.
9. Temperature and relative humidity within the building are at a normal or expected living conditions e.g. temp 15-25 degrees Celsius and relative humidity 35-50%. Moisture content of the wood sub-floor should be no more than 2-3% above the moisture content of the hardwood floor to be installed.

10. Sub-floor preferably 12mm or 18mm plywood so that the floor can be secret nailed using a Portanailer. The floor can also be stuck down using elastic polyurethane such as wurth or bonabond s760 especially over dry concrete. The floor should be flat and level.
11. Check internal pipe work washing machines, dishwashers etc for leaks. Recommend use of washing machine drip trays.
12. All outside doors and windows are properly installed, sealed and nearby areas dry.

Considerations before installing

1. All wet work must have been completed otherwise the moisture will transfer from walls floors and ceilings to the hardwood floor.
2. The building should be fully enclosed including the doors and windows and heating should be operational. Generally the humidity should be in the range 35-55% and temperature 15-25 degrees Celsius. Possibly in the English climate this may be at the higher end considering average outside UK climate humidity in the range 25-75% giving seasonal average 50%.
3. The delivered flooring can be left in the cartons. Polythene wrapping may have to be removed. Heaters etc should be avoided as they increase moisture in the air. Preferably, it should not be stacked more than 2 to 3 cartons high or wide. Break up stacked cartons with battens to increase circulation. Do not store next to radiators. Normally pre finished flooring should be left to acclimatise for 3-7 days. Of course it would be advisable to take moisture readings for an accurate measurement.
4. In practice a new job site needs to dry out before wood flooring is delivered. There is nearly always excessive moisture on new construction sites and major refurbishment contracts. The wood will absorb the moisture; cupping, expanding and later contracting in service. It helps to provide dehumidification equipment on such projects. NORMALLY the flooring should be one of the last jobs to tackle on site, otherwise, trades can damage an excellent installation. Opening packages and racking the flooring helps the acclimatisation process but is often not practical. The timber should be stacked or distributed around the building so that it receives good air circulation away from any standing or flowing water and off the floor especially above concrete. Gas, paraffin heaters should be avoided

5. In new building projects moisture is introduced into the fabric during the construction process. Under BS882 a concrete mix of (1:2:4) one cubic metre of concrete will contain 187 litres of water. This will have to dry out to approximately 3% moisture content before your flooring is installed. This may take a day per 1mm thickness to dry but take a new moisture reading before proceeding to be certain.

Acclimatising your new floor

1. The aim of acclimatising wood floor is to allow the moisture content of the timber to adjust to the normal expected day to day conditions expected within the building once occupied. This should be within 2-3% of any wooden sub-floor.
2. Normally hardwood flooring would be supplied at less than 10% moisture content from our warehouse and you may need to increase this to meet your particular requirements. Similar to furniture manufacturers we would suggest moisture content 11-12% more suited to the English climate. However, modern well insulated homes may vary considerably from older Victorian houses. Some wood flooring may already be at the correct moisture content but always consider acclimatisation as being advisable.

Installer/owner responsibility

1. Solid hardwood floors are a natural product and are subject to a grading and manufacturing tolerance of 5% and dimensions tolerance of 2%. The installer or owner assumes all responsibility for final inspection of product quality prior to installation.
2. Prior to installation the installer or owner must determine that the job site environment and the sub-surfaces involved meet or exceed all requirements. All flooring should be stored in the correct conditions prior to installing. The owner has final responsibility to ensure purchase of the correct species manufacture and finish that he requires.
3. The installer/ owner should use reasonable selectivity and hold out or cut off pieces with glaring defects whatever the cause. These should not be installed. All pieces should be inspected before installation and any below grade lengths not installed. Always work from 3 to 4 cartons to achieve the appearance you require.
4. Use of stain, filler or putty stick for defect correction or minor dimension differences should be considered normal. A 5% cutting or waste allowance should be added to the actual square meterage before ordering. Pre oiled will require a further coat applied after installation.

Installation

Step 1

Before you start make sure the sub-floor is in good shape, bouncy, squeaky, uneven areas should be repaired. Note 18mm plywood, solid wood or battens hold portanails better than mdf or chipboard. Generally you will want the flooring to run the length of the room for aesthetic reasons but install at right angle to floorboards, if laying over an existing floor, otherwise fit plywood so that the direction can be changed. The floor will be stiffer and less prone to joints separating.

Step 2

A vapour barrier between the sub-floor and the finish floor helps to control dust and moisture from below as well as dampen squeaks. Foam, builders paper or roofing felt works well. This can be stapled to the floor. Polythene sheeting should also be laid over soil areas underneath the sub-floor to lessen vapour transmission.

Step 3

First find the centre between the two walls at each end of the room a and b and snap a chalk line between the two points. This is your baseline. You do not have to start laying the floor from the baseline but wherever you start, you should be parallel to this.

Step 4 - Fitting from the centre of the room

You can start from parallel to the longest outside wall or from the centre of the room, especially useful in large rooms as the flooring expands and contracts from the centre out instead of from one side of the room. To fit from the centre, place the first two courses groove to groove with a piece of moulding taking the place of the tongue. When starting from the centre of the room screw down some temporary lengths of timber to prevent the hardwood from moving.

It is best to remove skirting boards and cut door linings and architrave with a scrap piece of flooring as a guide. If skirting boards are not removed scotia or quadrant will be required to cover up the expression gap required around all edges. If you are starting from a wall and not the centre of a room set down your parallel chalk line leaving at least 13-20mm expansion gap spacers can be used.

Step 5 – Fitting from wall recommended

Use nice long lengths when starting from the wall. The first two rows will have to be hand nailed as the portanailer will not have room to operate. Place the first row along the chalk line and predial holes before hand nailing. Fix with finishing nails and punch preferably through tongues coloured putty or filler will disguise nail holes if necessary.

Occasionally (rarely) small tolerances in width dimensions due to milling or acclimatisation will require sorting out flooring into pieces of equal width

Step 6

The subsequent rows can now be fixed using a portanailer. The last two or three rows will have to be installed by hand. Skirting boards and or Scotia can now be fixed to cover the expansion gap, always fix to the wall not the floor.

Notes

1. Recommended Nailing for Strip and Plank Flooring. As a general rule secret nailing should be spaced at 6 to 8 inch 240-320mm intervals, narrower spacing is recommended for wider boards or planks. Harwood flooring over approx 130mm width should be face nailed as well.
2. Wood flooring mainly expands across its width across the grain direction and very little in length with the grain. The wider the board the more it will expand and contract.
3. Always stagger end joints by alternating with strips of different lengths to avoid aligning joints.
4. T&G flooring can be laid straight over joists. Pieces which are ends matched (e.g. T&G all round) do not have to finish on a joist as the floor will be stable when the surrounding lengths are nailed down. Ideal space between joists or battens is 300-400mm centres.
5. Harwood flooring is supplied in random lengths with pieces from approx 400mm-1200mm in length.
6. Always try to use a moisture metre to measure sub-floor moisture levels. Moisture levels of the new flooring should be within 2-3% of the sub-floor. On concrete, tape a 400mm square of polythene will indicate high levels. Further advice is available. An acceptable level on a concrete floor is 4%
7. Occasionally you may find warped pieces force these into position using a wedge
8. These instructions are for guidance only. Always consult the latest information and never attempt to fit a solid wood floor unless you are an experienced and qualified joiner.