

**Hardwood Floor Fitting
&
Maintenance Guide
by**



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Fitting Your Floor

Preparation

As with any job, the key to success is in proper planning and preparation.

One of the main things to consider is the relative humidity of the air in the room where the floor is to be installed/stored. Ideally this should be between 50%-65%. All our floors are kiln dried to a moisture content of about 10% and stored prior to despatch/collection in our temperature controlled factory. This means that the floors are ideally conditioned for a normal centrally heated environment and will require little or no acclimatisation before laying.

However, timber is a hygroscopic material, i.e. it will absorb or lose moisture to "try" and reach equilibrium with its environment. As it does so, it will move; expand or shrink.

In all but under floor heated environments, the problems with relative humidity are that it could be too high. So, dealing with this first, below are possible reasons for this and suggested courses of action.

1) Moisture

Insufficient or defective damp proofing can cause moisture to track through sub floors, moisture vapour to rise up from below or water to soak through walls.

You don't need to actually see water for moisture to be present and become a problem. If there is any doubt, professional advice should be sought and proper readings taken.

2) New Building

We all know how much water is used in the preparation of concrete and plaster. That water has to go somewhere as it dries out. It is imperative to ensure that everything is fully dried out and relative humidity within the room has reached acceptable levels prior to installation. Under normal conditions concrete screeds can take one month per inch to dry out and traditional base and top coat plaster several weeks.

Also, new sub floors such as chipboard can become very damp due to water from plastering, plumbing works etc.



De-humidifiers can speed up the drying process but again, professional advice should be sought and proper readings taken prior to installation.

Fitting

There are three ways of fitting a hardwood floor; i.e. mechanical fixing, glueing and floating. The principles of the three methods are set out briefly below;

1) Mechanical Fixing

This is the usual way of fitting a hardwood floor and arguably the most successful as it is the way that floors have been fitted for years. Mechanical fixing means nailing or screwing the floor down onto joists, battens, sub floor or existing floorboards. Although there are several ways of achieving this such as pre drilling and screwing or face nailing, by far the most popular method is to 'secret nail'. In diagram 1, a special nail gun is used to drive a nail at between 33 degrees and 45 degrees through the side of the tongue (as seen in diagram 2 below).

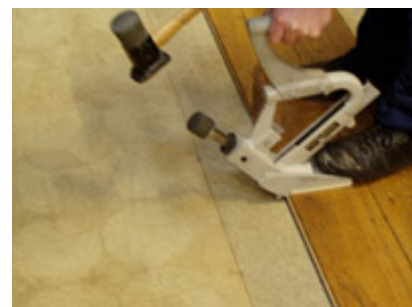


Diagram 1



Diagram 2

2) Glueing

View the [Lecol MS250 Technical Data Sheet](#), suitable for solid hardwood floors.

View the [Lecol 5500 Technical Data Sheet](#), suitable for engineered and parquet floors.

This method is used particularly when fitting over a solid sub floor such as concrete. Ensure that the sub floor is fully dry and that a continuous damp proof membrane is installed.





3) Floating

Floating a floor means that it is not fastened down to the sub floor below. We would only ever recommend the use of adhesive floor fitting foam to create a floating floor. **On no account** should floorboards be glued together and floated. Again, floor fitting foam is usually only needed over a solid sub floor.



Procedures

The procedures for the three fitting methods are as follows;

1) Secret Nailing

If the floor is to be nailed down then obviously there has to be something under the new floor that is capable of taking a nail such as joists, battens, chipboard subfloor or existing floorboards.

The following preparation work is recommended;

a) Joists

Pin a layer of visqueen, overlapped at the joints, on top of the joists. This is advisable at ground floor level. Moisture content of the joists should be comparable to the floor, i.e. 10%.

The recommended centres for joists is 400mm (16").

b) Battens

If fastening over concrete, a layer of visqueen should be placed over the concrete prior to fitting the battens. Insulation can then be placed between the battens if required. A further layer of visqueen or a layer of building paper can then be pinned to the top of the battens. The moisture content of the battens should be about 10%.

The recommended centres for battens is 400mm (16").

c) Chipboard / Plywood / OSB Board

When laying over concrete, the sub floor should be of flooring grade quality, tongued and grooved all round.



The correct fixings must be used to ensure a good 'hold' when using chipboard.

Firstly, ensure the concrete base is sound. Cover in a layer of visqueen, overlapped at the joints by 150mm (6") and taken up the side walls by 100mm (4").

Then lay out the sub floor material in a brickwork design so that the joints are not lining through. Glue with PVA glue along the joints. Leave a 12mm (½ ") gap all round the outside.

The hardwood floor can then be fitted by secret nailing or screwing.



Diagram 3 – Pattern of how to lay out your Chipboard

If the sub floor is already in place over joists, check that it is securely fastened down. Any points of movement can be rectified by screwing down on to joists.

d) Existing Floorboards

Existing floorboards should be sound and securely fastened to the joists beneath. If not they are not sound, make good any defects or overlay with plywood. Again, pin a layer of building paper over the whole floor, particularly at ground floor level.

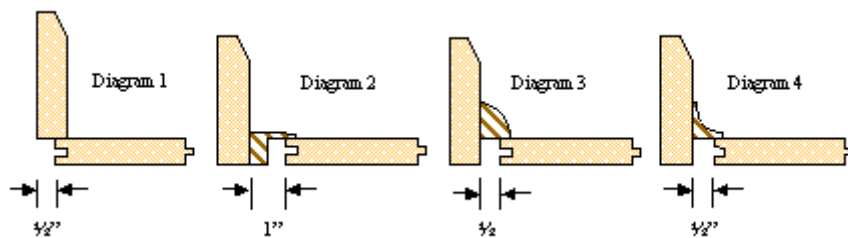
Once the sub floor has been prepared then you can start to nail the hardwood floor down. You should always allow for an expansion gap all around a hardwood floor. It is important to understand that any movement that may occur will be across the width of the boards and not in the length. Keep this in mind when planning the run of the boards. We usually recommend when fitting over existing floorboards, that the new boards run at 90 degrees to the old ones. The expansion gap should be about 12mm (½").

How you are going to cover this gap will dictate what space you allow. There are four ways of doing this namely;

- i. Leave ½" expansion gap from the wall and cover with skirting boards (diagram 1 next page). This is the neatest option but entails removing existing skirtings and re-fitting or replacing.



- ii. Leave a 1" expansion gap from the existing skirting and cover with low profile bead (diagram 2 next page). This is an easier option and is still neat as the beading is unobtrusive.
- iii. Leave ½" expansion gap and cover with either quadrant or scotia bead (diagrams 3 and 4 next page). This is the cheapest option but the beading does 'ride up' the skirting by ¾" which may be a problem, particularly on shallow skirtings.



Once you have set out for the expansion gap, the first line of boards can be set. Choose the wall that you want to start from, this will usually be the longest wall.

The first one or two rows of boards will have to be face fixed, i.e. vertically. First pre drill a fine hole, nail through into the sub floor, sink the nail head with a punch and fill. Be careful that the nails used are suitable flooring nails and that they will not penetrate further than the sub floor. A guide to what nails to use where is given in the following table;



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Floor Thickness	Angle of nail	Method of nailing	Nail Length		
			1 ¼"	1 ½"	2"
15mm	90	Face fix into 18/20mm sub floor	✓		
15mm	45	Secret nail into 18/20mm sub floor		✓	
15mm	90	Face fix into 25mm sub floor		✓	
15mm	45	Secret nail fix into 25mm sub floor		✓	
15mm	90	Face fix into joists		✓	
15mm	45	Secret nail into joists		✓	
20mm	90	Face fix into 18/20mm sub floor	✓		
20mm	33	Secret nail into 18/20mm sub floor			✓
20mm	45	Secret nail into 18/20mm sub floor		✓	
20mm	90	Face fix into 25mm sub floor		✓	
20mm	33	Secret nail fix into 25mm sub floor			✓
20mm	45	Secret nail fix into 25mm sub floor			✓
20mm	90	Face fix into joists			✓
20mm	45	Secret nail into joists			✓

Some nail guns have adaptor shoes to vary the nail angle between 33 and 45 degrees.

As you start to secret nail the boards down take care to ensure that the joints are completely random (see diagram 4 below). Try not to line joints through or set the floor out brickwork style i.e.

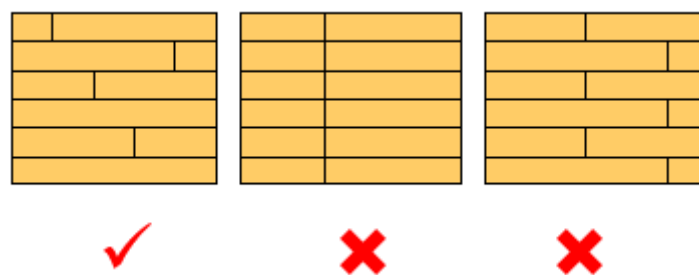


Diagram 4

Also, if you have a floor that has a variegated pattern such as brown oak, ash, coloured maple or fumed oak, ensure that you open several packs at a time in order to ensure an even mix.



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Nails should be at 6 to 8" centres with a nail a couple of inches either side of joints.

Once you reach the far wall you will need to face nail the last one or two lines of boards as before.

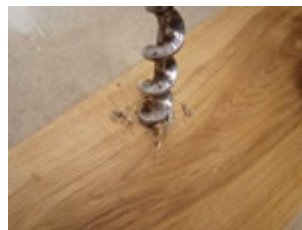
Whilst fixing the floor a few points should be borne in mind;

- i. The boards should fit up snugly together, if not there is a good chance that there is some debris in the groove or a tongue is damaged. Clear this before nailing.
- ii. Flooring should not be scribed around areas like architraves and casings. These should be undercut by hand or with a jamb undercut saw so the flooring can neatly slide under. Remember to leave some gap for expansion. Refer to picture above.
- iii. When fitting around radiator pipes a 20mm hole (for 15mm pipes) should be drilled in the floor to allow for expansion. The floor should then be cut out as below;

How To Fit Around a Radiator Pipe



1. Carefully mark the position of the pipe.



2. Drill a clearance hole.



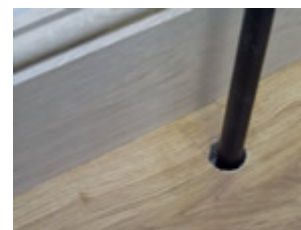
3. Mark out out a 15° wedge.



4. Cut neatly down the lines with a fine tooth saw.



5. Push the wedge back in and file to circle again.



6. Slide back over the pipe and glue wedge in place.



7. Fit a pipe cover in a matching timber.

2) Glueing

View the [Lecol MS250 Technical Data Sheet](#), suitable for solid hardwood floors.

View the [Lecol 5500 Technical Data Sheet](#), suitable for engineered and parquet floors.

If, after following all the procedures above, you are still concerned about the moisture vapour emissions from the floor, then a concrete sealer should be used.

Once the concrete is sealed the floor can be laid onto a full screed of adhesive. Both of these products, application tools and full details on testing for moisture vapour emissions and methods of use are available from British Hardwoods. The principles about laying the floor are the same as for nailing down as above.

3) Floating - Floor Fitting Foam

When using floor fitting foam first lay a full layer of visqueen over the whole floor overlapping on the joints by 8" and running slightly up the walls.

Roll out the floor fitting foam at 90 degrees to the run of the new floorboards with the plastic coated face uppermost.

Leave a slight gap between rows of floor fitting foam.

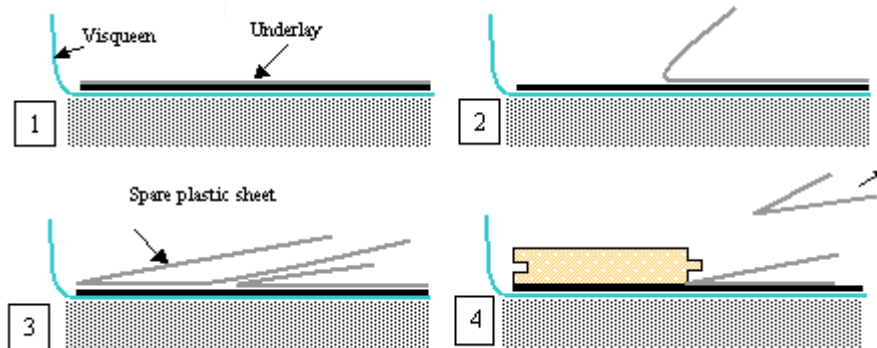
On the wall where you intend to lay the first board peel back approximately 500mm of the plastic top film exposing the glue. Onto this glue apply a spare sheet of the plastic top film and fold it towards you with the fold to the wall. Onto this separate piece place the first few rows of flooring, locked tightly together and leaving the proper expansion gap as detailed above.

Carefully, pull out the loose piece of plastic sheet and affix the boards firmly to the floor fitting foam. Once this is done, lock in the next row of boards and then peel back the main plastic sheet by 75% of the width of the board (to allow the next row



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to be laid without sticking), continue to do this across the room, see diagrams below;



Whilst laying the floor, the floor fitting foam can be slightly stretched before sticking down the boards. So, if the boards shrink slightly they will tighten up to avoid gaps.

Again, the general principles for laying the floor are the same as for nailing.

Moisture Content of Wood Chart

Relative humidity	Values for the equilibrium moisture content of wood					
85%	18.1	18.0	18.0	17.9	17.5	17.1
80%	16.2	16.0	16.0	15.8	15.5	15.1
75%	14.7	14.5	14.3	14.0	13.9	13.5
70%	13.2	13.1	13.0	12.8	12.4	12.1
65%	12.0	12.0	11.8	11.5	11.2	11.0
60%	11.0	10.9	10.8	10.5	10.3	10.0
55%	10.1	10.0	9.9	9.7	9.4	9.1
50%	9.4	9.2	9.0	8.9	8.6	8.4
45%	8.6	8.4	8.3	8.1	7.9	7.5
40%	7.8	7.7	7.5	7.3	7.0	6.6
35%	7.0	6.9	6.7	6.4	6.2	5.8
30%	6.2	6.1	5.9	5.6	5.3	5.0
Temperature in °C	10°	15°	20°	25°	30°	35°

Chart showing equilibrium moisture content in relation to temperature and relative humidity



Finishing Your Hardwood Floor

Before finishing the floor knots, splits and fixing holes can be filled with a mixture of resin and fine sawdust. Surplus filler and any marks can then be sanded down with a 120 - 150 grit sand paper. The floor should then be cleaned of all dust and dirt. A final wipe with a cloth, lightly dampened with white spirit, should remove all traces of dust. British Hardwoods supply and recommend two different floor finishes as below;

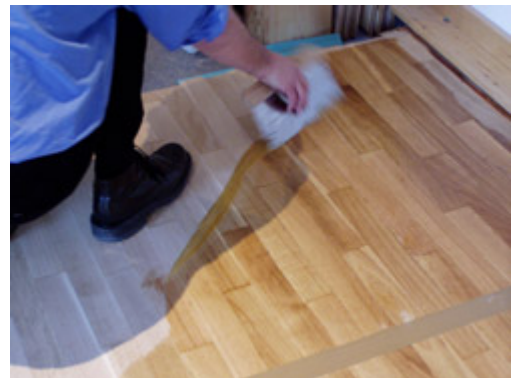


Hardwax Oil

This is a mixture of oils and waxes that soak into the floor and protect it. As it soaks into the floor it will slightly darken the raw timber and bring out the colour and features, giving a very natural satin finish. It is also very easy to maintain as more hardwax can be applied to localised worn or damaged areas.

Applying Hardwax Oil

To apply, the hardwax should be mixed thoroughly and then a small puddle poured in the far corner of the room. This should be brushed well into the floor so no surface residue is left. Ideally this should be done with the proprietary Osmo floor brush. Continue in this manner until the whole floor is covered. If there are any areas where the hardwax is showing thick then these should be wiped off with a cloth. Once fully coated leave the floor for approximately 8 hours until fully dry and then re-coat in the same manner.



After two coats the floor should be fully finished. Leave for about a week before giving any heavy wear, moving heavy furniture etc. For the best results buff down with liquid wax cleaner two weeks after finishing.

Lacquer

The lacquer is a waterborne polyurethane system, which after the initial application of primer coat will give the floor a very hardwearing finish. Because the product is clear and sits on top of the timber it does not darken it but keeps it in its raw colour. As such, it is very



popular where floors need to be kept as light as possible as in Maple or Ash. Unlike the hardwax oil any additional coats have to be applied to the whole floor.

Applying Lacquer

Firstly, apply a coat of the acrylic primer with the approved roller. This will raise the grain of the timber so the floor will need light sanding once the primer has dried. Two coats of the polyurethane topcoat should then be applied with the correct roller allowing a few hours to dry between coats. Ensure that you apply the amount as recommended by the manufacturer on the product packaging.

There are two grades of topcoat available; a one-part product that is available in matt, silk or gloss finishes and is suitable for heavy domestic/commercial applications, and a two-part product that is suitable for the hardest use. The two-part is only available in a matt finish. It should be noted that glossy finishes will tend to show scratches more than matt ones.



Leave the floor for about 1 week prior to subjecting it to heavy use.



Maintaining Your Hardwood Floor

Although a solid hardwood floor is extremely hardwearing the surface finish needs to be maintained to keep it looking beautiful. British Hardwoods supply various maintenance products depending upon the floor finish.

For any floor a three-headed mop set is available to dust, wash and polish the floor.

Oiled Floors

A detergent is available which, when mixed with water will clean the floor without stripping off the surface wax coating. Also available is Liquid Wax Cleaner, which will remove stubborn stains and can also be used to revitalise and polish up the floor.

The beauty about the hardwax oil is that if an area becomes worn or damaged it can be cleaned down with liquid wax and more hardwax applied to the area, which will blend into the rest of the floor finish.

Do not be tempted to over apply hardwax oil. Two or possibly three coats will be sufficient.

Lacquered Floors

Again, both detergents and polishes are available for maintaining a lacquered floor.

Unlike an oiled floor, if a lacquered floor gets scratched or worn then it will need to be sanded all over and another coat of lacquer applied to the full surface, as it is not possible to re-apply lacquer to a localised area effectively.

[Purchase Fitting, Finishing and Maintenance Products for your Floors](#)

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