

# Hardwood Floor Fitting and Maintenance Guide

*by*



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HARDWOODS  
THE OAK SPECIALISTS

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# Key Dos and Donts

Whether you are laying a solid or engineered wood floor there are several key points to follow to ensure a successful installation. Each key point on this list has been set out briefly and will be covered in further detail later in this guide. We strongly recommend reading the next chapter on preparation (page 4) and also the full chapter on your chosen fitting method.

### **Storage**

- DO NOT store your new floor in a cold, damp environment (e.g. garage or outbuilding). On delivery, the floorboards should be taken straight indoors into a dry, heated building.
- DO NOT store your floor until all concrete, plaster and wet work has fully dried out.
- If you are not planning to fit your floor straight away, it should be unwrapped and laid flat, allowing the air to circulate around the boards. DO NOT store the boards against a source of heat or newly plastered walls.

### **Fitting**

- DO ensure that sub-floors are dry and correct damp-proof membranes are installed.
- DO NOT glue the boards of a solid wood floor together.
- DO NOT fit solid wood flooring onto underfloor heating (only engineered wood flooring should be used in conjunction with underfloor heating).
- DO leave an adequate expansion gap around the perimeter of the room (including the doorway) – whether fitting solid or engineered wood flooring (see page 8).
- DO follow manufacturer's guidelines when using adhesives, underlays, fixings and other fitting products.

### **Finishing**

- DO ensure that the newly laid floor is clean and free of dust prior to application of finish.
- DO follow manufacturers' guidelines with regard to application and drying times.

### **Cleaning and Maintenance**

- DO use the proprietary products for cleaning and maintaining your floor – this will prolong the finish.
- DO NOT use universal over-the-counter products for cleaning your floor – these can strip and shorten the life the finish. Steam cleaners are also not recommended.
- DO protect your floor from scratches by using felt pads under furniture and door mats in exterior doorways.

# Fitting Your Floor

## Preparation

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

One of the most important 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 40%-60%. All our floors are kiln dried to a moisture content of about 10% and stored, prior to despatch in our temperature controlled factory. This means that our floors are ideally conditioned for use in a normal centrally heated environment and 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. If a new wood floor leaves the carefully controlled environment of our factory, and is then stored or installed in an environment where the relative humidity is too high, expansion of the boards is likely to occur. Below are possible reasons for a high relative humidity.

### 1) Moisture

Insufficient or defective damp proofing can cause moisture vapour to track through sub-floors and walls. You don't need to actually see water for moisture to be present and become a problem. If you are in any doubt at all, professional advice should be sought and proper readings taken.

### 2) New Building

Gallons of water are used in the preparation of concrete and plaster, and that water has to go somewhere as it dries. Under normal conditions concrete screeds can take a minimum of one month per inch to dry out, but can take considerably longer.

Traditional base and top coat plaster can also take several weeks to dry. New sub-floors such as chipboard can also become very damp due to water from plastering and plumbing works etc.

It is imperative that your new wood floor is not stored or installed until all concrete, plaster and wet work has fully dried out. A reputable fitter should be able to provide an appropriate damp meter to check that moisture levels across the sub-floor are within acceptable levels. If you are installing the floor yourself, we would recommend that you seek professional advice to ascertain the sub-floor moisture level, as it is not possible to establish this by the visual appearance of the floor itself.

## Fitting Methods

The decision whether to mechanically fix, glue down or float your new wood floor is likely to be dependent on your existing sub-floor (i.e. what you are fitting onto). Whichever fitting method you choose it is vital that correct damp-proof membranes are used prior to installation. The principles of the three main fitting methods are set out briefly below.

### 1) Mechanical Fixing

Our 20mm solid and engineered wood floors can be secret nailed or screwed onto joists or battens as a load-bearing floor. This mechanical fixing method can also be used for fitting onto an existing timber floor, or any sound sub-floor which is thick enough to adequately take a nail or screw (e.g. building grade chipboard).

Secret nailing involves the use of a special nail gun (see image to right) which is used to drive a nail through the side of the tongue (as seen in diagram 1 below).



Even more popular are the specially designed Tongue-Tite™ flooring screws which are fixed through the tongue joint (at an angle of approx. 30 degrees) using an ordinary drill or

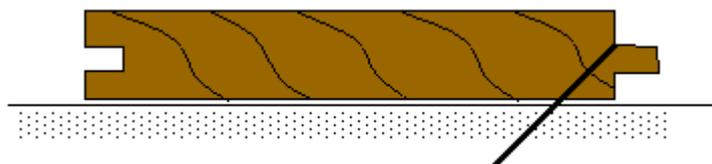
power screwdriver (see image to left).



Tongue-Tite™ screws have an advantage over flooring nails in that they are self-piloting and countersinking, and do not require specialist equipment for use. The screws nip the boards together tightly, and have the benefit of being easier to remove and reposition, if required.

**Please note:** if you intend to use Tongue-Tite™ screws to mechanically fix our 15mm engineered wood floors, the boards may require pre-drilling, prior to fixing.

Diagram 1



### 2) Glue Down

Using a quality MS polymer adhesive, and recommended notch trowel, this method is suitable for fixing both solid and engineered wood flooring, usually when fitting onto a concrete sub-floor. The concrete base must be level and fully dry, and a continuous damp-proof membrane should be installed.



### 3) Floating

Floating a wood floor means that the boards are not fastened down to the sub-floor. This method can only be used when fitting onto a solid sub-floor and can provide a cost-effective alternative when fitting onto concrete, due to the high cost of using MS polymer glues. Both solid and engineered wood flooring can be effectively floated, however, the method of fitting and the underlays used are very different.



## Procedures

The procedures for the three fitting methods are set out in detail below. The importance of the expansion gap applies to all three methods of fitting solid and engineered wood flooring.

### 1) Secret Nailing/Screwing Method

If the floor is to be nailed or screwed down there has to be something under the new floor that is capable of taking a nail or screw such as joists or battens (when using 20mm flooring), or a chipboard sub-floor 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'.

First, 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 ( $\frac{1}{2}$ ") gap to the perimeter of the room.

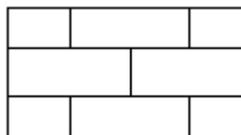


Diagram 3 – Pattern of how to lay out your chipboard

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 onto joists.

Pin a layer of building paper over the whole floor, particularly at ground floor level, prior to laying the new wood floor.

### d) Existing Floorboards

Existing floorboards should be level, sound and securely fastened to the joists beneath. If they are not sound, make good any defects or overlay with plywood.

When fitting over existing floorboards, we normally recommend running the new floorboards 90 degrees perpendicular to the old floor. If this is not possible, perhaps due to the aesthetics of the room, the existing floor can be overlaid with plywood.

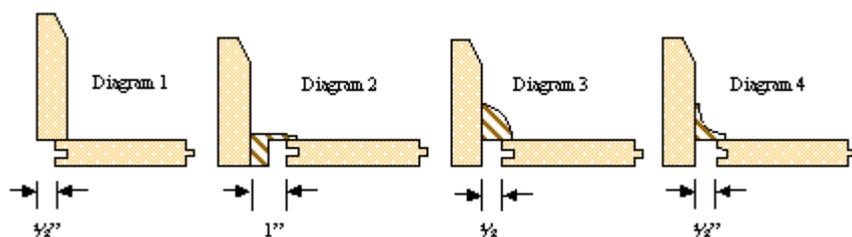
Again, pin a layer of building paper over the whole floor, particularly at ground floor level, prior to laying the new wood floor.

### The Importance of the Expansion Gap

When planning the run of your floor, it is also important to bear in mind that most natural movement of the timber will be across the width of the boards. However, it is essential to leave an adequate expansion gap (at least 12mm) around the perimeter of the whole room, including the doorway.

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

- i. Leave  $\frac{1}{2}$ " expansion gap from the wall and cover with skirting boards (diagram 1). This is the neatest option but will entail removing existing skirting boards and re-fitting or replacing.
- ii. Leave a 1" expansion gap from the existing skirting and cover with low profile bead (diagram 2). This is an easier option and is still neat as the beading is unobtrusive.
- iii. Leave  $\frac{1}{2}$ " expansion gap and cover with either quadrant or scotia bead (diagrams 3 and 4). This is the cheapest option but the beading does 'ride up' the skirting by  $\frac{3}{4}$ " which may be a problem, particularly if you have shallow skirting boards.



Once you have set out for the expansion gap, the first line of boards can be secured. Choose the wall that you want to start from, this will usually be the longest wall, and position the boards so that the long edge with the groove is facing towards the wall.

The first one or two rows of boards will have to be face fixed, i.e. vertically. If using flooring nails, 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 the correct application of nails is given in the following table:

| 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 fix 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 in a brickwork style:

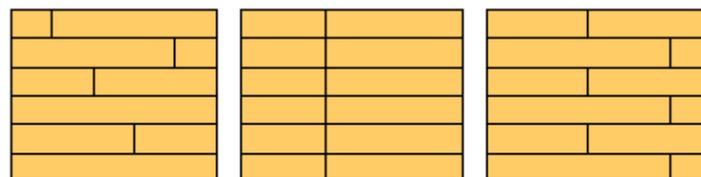


Diagram 4

You should ensure that you open several packs at a time, and loose-lay prior to fixing, to ensure an even mix of character and tones. This is particularly important if you have a wood floor that has been fumed, or has a variegated pattern such as brown oak or ash.

Nails/screws should be fixed at 10" centres with a nail/screw a couple of inches either side of joints. Once you reach the far wall you will need to face secure the last one or two rows 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 fixing.
- ii. The floor 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 slide neatly under. Remember to leave some gap for expansion.
- 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.



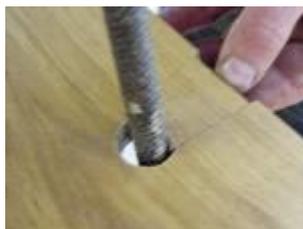
2. Drill a clearance hole.



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) Glue Down Method

Both solid and engineered wood floors can be successfully glued down onto a dry concrete subfloor using a high-tensile MS polymer glue. As it is not possible to establish the moisture level of the sub-floor by the visual appearance alone, an appropriate damp meter should be used to check that moisture levels across the sub-floor are within acceptable levels, this should ideally be between 3%-4% (and certainly below 5%). A reputable fitter should be able to provide a damp meter for this purpose. If you are installing the floor yourself, we would recommend that you seek professional advice to ascertain the sub-floor moisture level.

The sub-floor must be level to a 5mm in a 3m span and should be sound, smooth and clean. It must be free of dust, dirt, wax, loose paint, all curing compounds, chemicals or any other foreign substances that might interfere with a good bond.

#### ***Application of OSMOUK Moisture Barrier and Encapsulator***

Component A should be very well stirred separately, with a mixer on a slow speed to prevent sedimentation, until a homogenous liquid is achieved. Pour all of Part B into Part A in the container and mix thoroughly for approx. 3 minutes until streak free, ensuring that no bubbles have formed during mixing. Apply the mixture with a flat trowel or Osmo microfibre roller. It will dry to a tack free state in approx. 2-4 hours, with the colour changing from white to clear, but should be allowed to cure overnight (12-18 hours) prior to the application of OSMOUK MS Advance Flooring Adhesive.

#### ***Application of OSMOUK MS Advance Wood Flooring Adhesive***

Do not dilute the adhesive in any manner. In order to ensure good workability, the minimum temperature of the adhesive should be at least 15°C. Spread the adhesive using the recommended trowel (see chart on next page). Install wood flooring immediately after adhesive is spread. Lay wood flooring onto the adhesive, leaving the appropriate expansion gap (as detailed on page 8 of this guide).

The working time of the adhesive is approximately 30 minutes at 23°C, 50% R.H. The adhesive has a high initial grab time, so only apply as much adhesive as you can comfortably work with at one time.

The wood may slip and move at first so be sure to secure the initial row to limit movement. Ensure that the floor is level and that at least 80% of the adhesive is in contact with the board. The adhesive cures with humidity, therefore, to ensure proper drying, adequate air humidity is necessary.

When installing over radiant heated sub-floors, the heat must be turned off for 24 hours before, during, and after installation. Failure to turn the heat off may result in shortened working time of the adhesive.

Restrict light traffic for a minimum of 16 hours and heavy traffic for a minimum of 24 hours after installation is complete.

### ***Trowel Recommendations***

| Type of installation  | Trowel Size and Notch                | Coverage                        |
|---|--------------------------------------|---------------------------------|
| Solid and Engineered Wood Flooring where moisture barrier is NOT required | MS Standard Flat V Notch Trowel 4034 | Approx 1m <sup>2</sup> per KG   |
| Solid and Engineered Wood Flooring where moisture barrier IS required     | MS Glide-On™ V Notch Trowel 4036*    | Approx 0.5m <sup>2</sup> per KG |

\* Due to spacer wear the Glide-On trowel should be replaced for every 15kg tub of OSMOUK MS Advance Wood Flooring Adhesive applied.

**NOTE:** All information is provided as guidance only and has been compiled from OSMOUK's own information data sheets. Specific technical questions about the product which has not been covered in this guide should be referred directly to OSMO Technical Services on 01296 481220. No guarantee, expressed or implied, is made regarding the performance of this product, since the product itself and the manner and conditions of application are beyond our control.

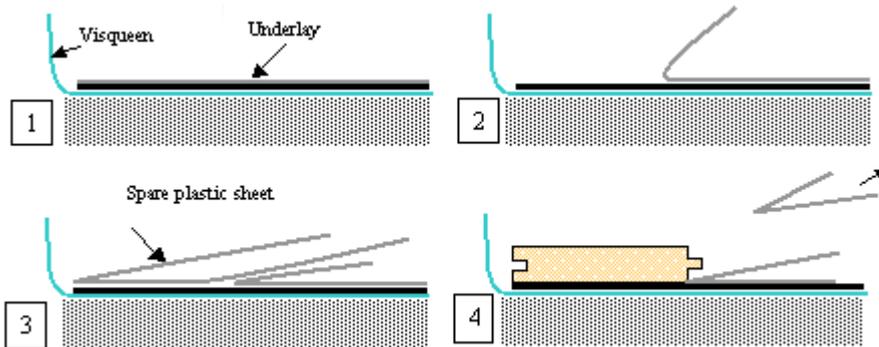
### **3) Floating – Solid Wood Flooring**

Solid Wood Floors can be “semi-floated” onto a solid sub-floor using an adhesive floor fitting foam underlay. The adhesive top side of the foam will allow for the natural seasonal expansion and contraction of the wood, whilst ensuring that the boards do not lift.

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 adhesive surface. Onto this surface 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 appropriate expansion gap (see page 8 of this guide).

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



Slightly tension the floor fitting foam and release when the board is in place to ensure that the boards fit tightly together.

The floorboards should be held in place by the floor fitting foam only and **MUST NOT** be glued together under any circumstances.

#### 4) Floating – Engineered Wood Flooring

Because an engineered wood floor is much more stable than a solid wood floor, it does not require the adhesive foam to hold the boards in place. Instead, the boards can be glued together and laid onto a specially designed non-adhesive underlay.

TimberTech2™ Silver Underlay is an acoustic and thermal underlay which is laminated with a silver vapour barrier which also offers protection against moisture migration from the sub-floor. QuickTherm™ Vapour Underlay is specially designed to allow your underfloor heating work at its best, whilst also offering moisture protection.

Lay the underlay 90 degrees perpendicular to the way that the floorboards will run. Each row of underlay should be butted up next to each other. The underside of the joints can be secured with tape if required.

Run a small bead of PVA glue along the bottom of the groove joint down the long edge of the board, continuing onto the short grooved edge. Take care to ensure that only a small bead is applied so that the glue does not come into contact with the wood top layer when the boards are pressed together.

Glue as above, and press a few boards together, then lay onto the underlay, leaving the appropriate expansion gap (see page 8 of this guide).

## Finishing Your Hardwood Floor

Before finishing the floor, any knots, splits and fixing holes can be filled with an appropriate filler, if required. 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 lint-free cloth, very lightly dampened with white spirit, should remove all traces of dust.



British Hardwoods supply and recommend two different floor finishes as follows:

### Hardwax Oil

This is a unique blend of oils and waxes that soak into the floor to form a protective layer. 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 oil can be applied to localised worn or damaged areas. Hardwax oil is available to purchase from us in a matt or satin finish.

#### ***Applying Hardwax Oil***

Mix the hardwax oil thoroughly and pour a small puddle in the far corner of the room. This should be well brushed into the floor, evenly along the grain. 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 oil is showing more thickly, ensure that the surplus is wiped off with a lint-free cloth. Once fully coated leave the floor for at least 10-12 hours, ensuring that it is completely dry, before re-coating in the same manner.



After two coats the floor should be fully finished. It will take a further 7-10 days for the hardwax oil to fully harden and cure. During this time treat the floor carefully, remove shoes and, if possible, keep traffic to a minimum. If you wish to replace your furniture, lift and place, rather than dragging across the surface of the floor.

## Lacquer

Lacquer is not microporous and does not penetrate the timber like an oil finish, instead it forms a protective layer on the surface of the wood. Because it maintains the natural colour of the timber without significant darkening, it is very popular where floors need to be kept as light as possible such as maple or ash.

Unlike hardwax oil it is not spot repairable and additional coats will require full sanding and re-application of the lacquer to the whole floor area.

### ***Applying Lacquer***

First, apply a coat of the acrylic primer with the approved roller. This will raise the grain of the wood so the floor will need light sanding (or de-nibbing) once the primer has dried. Use fine sandpaper (120 grit) and remove all dust prior to application of the top coat.



Two coats of your choice of polyurethane topcoat should then be applied with the correct roller allowing a few hours to dry between coats. The topcoat is available in two strengths: Bona Mega for domestic/commercial settings and the more heavy duty Bona Traffic for commercial applications. The lacquer is available in a matt, silk-matt or gloss finish, please note, however, that a gloss finish will show more scratches than a matt finish. Read the instructions on the packaging carefully, prior to use, and ensure that you apply the amount recommended by the manufacturer.

Bona have also produced Bona Mega Natural, a unique floor treatment that preserves the natural look and feel of the wood even further. Bona Mega Natural is suitable for use in homes, offices or wherever a truly natural look is required.

Whichever finish you use, leave the floor for at least 1 week, prior to subjecting it to heavy use, and always use the recommended maintenance products when cleaning.

## Maintaining Your Hardwood Floor

Although a solid hardwood floor is extremely hardwearing the surface finish needs to be maintained to keep it looking beautiful.

Sweep your wood flooring regularly with a soft brush, small particles of grit and stones, which can be brought in on the soles of visitor's feet, can abrade and scratch the surface of the wood. An entrance mat placed in exterior doorways can help reduce this occurrence.

Dining chairs and other furniture can mark hardwood floors if the legs are left unprotected. Adhesive felt pads offer a simple and inexpensive solution to this problem. Check the felt pads regularly to ensure that they are still intact.

### Oiled Floors

Oiled oak floors should be cleaned with Osmo proprietary care products. A couple of caps of Osmo Wash and Care, diluted in warm water, will clean the floor effectively whilst feeding and replenishing the oiled surface.

An Osmo Opti-Set Mop is a superb product for cleaning, dry mopping and polishing your wood flooring. The green dust mop, used dry, will pick up tiny particles of dust and grit. The Osmo Spray Mop provides a quick and convenient method of cleaning your oiled wood floor.

If your floor is looking a little tired and could do with more of a lift, Osmo Liquid Wax Cleaner can be buffed into the cleaned floor. The thin microfibre polishing cloth supplied with the Opti-Set Mop is perfect for the task.

### Lacquered Floors

Proprietary detergents and polishes are also available for maintaining a lacquered floor.

**All the products mentioned in this guide are available to purchase from our online shop, or in person at our showroom, or over the phone.**

### Contact Us

**Tel: 01535 637755**

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