

## Havwoods Installation Guide: Floating Floors

These guidelines are designed to complement the current British Standard BS8201 or the relevant standards in the country of installation.

Safety must be paramount on every installation. All electrical equipment must be PAT tested and labelled and all cutting tools such as jigsaws, circular and bench saws must have guards fitted and cutting must be carried out on a suitable bench. You must also wear suitable work wear and remove or make safe any loose items such as jewellery. Safety is your responsibility.

The installer must be suitably trained and knowledgeable with wood flooring installations. Engineered wood flooring can be installed as a floating floor, fully bonded, or nailed. This document covers fully bonded installation. The following topics are covered by this document, for further information or for advice on any subject not covered here, please contact Havwoods:

- Environmental Conditions
- Subfloor Preparation
- Installation
- Underfloor Heating
- HVAC heating/climate control
- Floor Protection
- Care & Maintenance

**Please Note:** Kitchens and other fixed furniture or joinery items should not be placed over a floating floor. Any in-built items should be installed prior to flooring installation and the timber floor fitted up to them. Built-in units and any item screwed into or through the flooring can restrict expansion and contraction in the flooring, leading to deflection or gapping of the floor finish. If a built-in item needs to be fixed over a floating floor, loading should not be directly onto the flooring (weight supported by walls or feet placed directly to the substrate) and any fixing point or supporting feet should be over-drilled by a minimum of 20mm with expansion on all sides of the fixing to allow for movement of the flooring.

**The final responsibility for the installation lies with the installer. It is the duty of the installer to inspect materials prior to installation and notify Havwoods of any potential material defects prior to installation. Installed materials are deemed to have been accepted.**



## ENVIRONMENTAL CONDITIONS

The building must be watertight with all windows and doors fitted and all wet trades complete before taking delivery of materials and before any wood flooring installation can take place.

Always check the ambient room temperature and humidity which should be maintained at a constant level, between 18°C (64°F) and 22°C (72°F) with a relative humidity, between 45% – 65%RH prior to, during and for the whole life of the wood flooring. Try to avoid extremes of low or high temperatures as this will negatively affect the stability of the wood flooring.

Acclimatise the wood flooring in the room where the wood is to be fitted for at least 72 hours prior to the installation. The timber material should be maintained in their original packaging in this period. Only remove the materials from their packaging just before installation. The wood should be stored out of direct sunlight, away from walls and radiators and on battens fully supporting the wood to prevent a build of heat on the bottom boards.

Acclimatising is used to balance the wood flooring with the environment in the installation area.

If the temperature of the wood is at an equilibrium balance (the same as the room) and the moisture level of the wood is 8%(±2%) then you can assume that the timber does not require any further acclimatisation.

Keep the room temperature constant by using the heating set at minimum 15°C (59°F) or if there are problems with the permanent heating other forms of heating such as convector heaters can be used.

Do not use gas-type heaters as these will generate extra moisture in the air.

Infra-red type heaters do not generally warm the fabric of the room or the wood, they tend to only warm the person or item close to the heater.

Low humidity can cause the wood to shrink and high level to cause expansion. Common causes of low humidity are using the heating at too high temperature, open fires and wood burners. High humidity is commonly caused by poor ventilation.

We recommend using a digital gauge to monitor the humidity and temperature level. Humidity can be adjusted by either placing moisture in the room (plants that are watered regularly or receptacles of water) or ventilating the room to reduce high levels of humidity. A humidifier/de-humidifier can also be used to control the atmosphere.

As a general rule, rooms/areas should be adequately ventilated to prevent a build of moisture in the environment. Care must also be given to rooms that are only heated when in use and with the heating switched fully off at other times. This can cause a build-up of humidity if the room is closed and not ventilated immediately after usage. The build of humidity / moisture will generally increase the moisture level of the wood flooring. The next time the room is used, the heating can dry out the moisture in the surface of the wood, causing cupping.

Wood will naturally change in size during seasonal variations in temperature and humidity.



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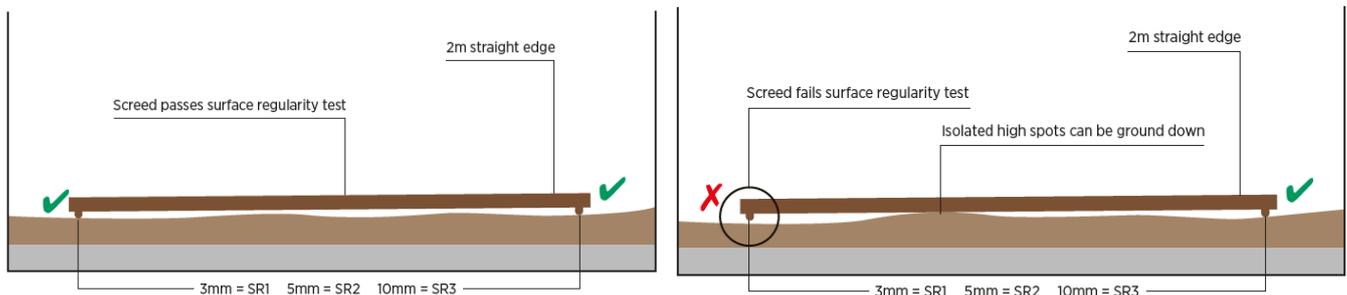


During summer the humidity is generally at its highest level, hence the wood joins should be reasonably tight together. During the winter, when heating is commonly used, the humidity levels are generally lower and will produce small gaps between the joins. This occurrence is not a manufacturing or installation fault.

## SUBFLOOR PREPARATION

The subfloor must be sound, dry, free from contamination and flat to British Standard SR1 tolerance: maximum 3mm of level variance under a 2m long straight edge, at any point across the subfloor.

Where a wooden floor is to be installed using a floated method, a structural subfloor must always be in place beneath the floor finishes. Please consult Havwoods if there is any question relating to substrate suitability.



Please Note: Where underfloor heating is present, only engineered floors with a click-system locking profile (e.g. Pureplank) are appropriate to be floated. Tongue and Grooved engineered floors should be installed in a fully bonded method over UFH.

### Screeded Substrates

Cementitious (sand and cement) / Calcium Sulphate (Anhydrite):

The subfloor must be sound with no friable areas, free of laitance and dry. The moisture content of solid sub-floors must be checked in accordance with British Standards 8201:2011 Annex A.

This is carried out using an insulated Hygrometer sealed on top of the screed or by inserting a sleeve into the screed, (the sleeve method is not recommended with underfloor heating to avoid the risk of damage to the pipes).

For screed substrates, the moisture reading must be less than 75% Relative Humidity (RH) for a floating installation.

Where there is a cementitious substrate, if the reading is above 75% RH and below 95% RH, we recommend using the **Marldon MXS 140** two-part epoxy damp proof membrane (DPM). The DPM must be applied in accordance with the manufacturer's instructions. Marldon MXS 140 DPM (or any other epoxy DPM) can be used on anhydrite-type screeds where the relative humidity is below 87% and there is no UFH.

A poured or pumped screed rarely achieves the required SR1 levels and it is recommended that a self-levelling compound be used prior to timber flooring installation.



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### **Timber Substrates**

The timber sub-floor must be sound, tested for vertical movement (which should be less than 5mm) and dry, tested using a spike-type meter. The moisture content of the subfloor should be less than 14% and within  $\pm 2\%$  of the wood floor being installed.

All suspended wood floors must have suitable through ventilation normally delivered by air bricks in the outside walls.

Any wood sub-floor that has a higher moisture level than 14% should be investigated. They must also be free of infestations such as wood-rotting fungi and wood boring insects.

*Note: We recommend using an asphalt impregnated paper on wood and solid sub-floors, to reduce/ prevent residual moisture affecting the wood flooring.*

### **Unsuitable Substrates**

A floated floor must not be installed over a substrate with a low compressive strength. A typical example of this would be extruded insulation panels (PIR, PUR, EPS, XPS etc.) which do not offer the necessary density for a direct installation. Installation directly to a material of this type can lead to flexing (and potentially failure) at the joints between planks and excessive deflection in the finished flooring. These materials must be over-boarded with a higher density material prior to timber flooring installation.



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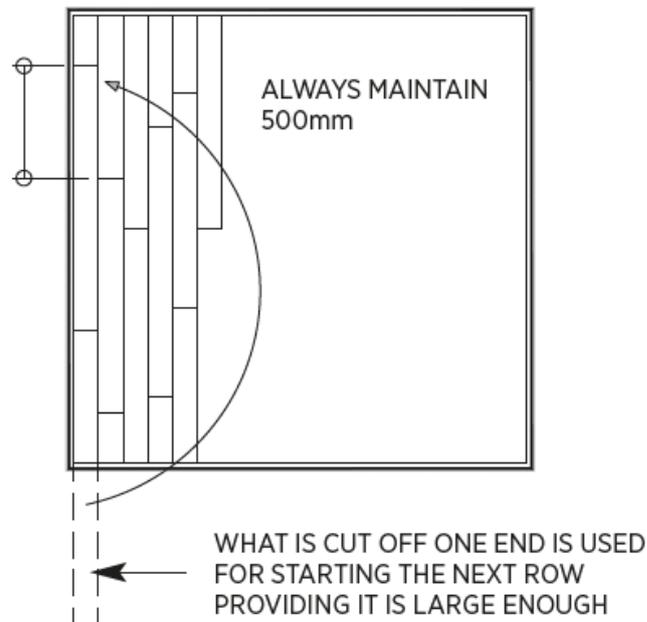
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## INSTALLATION

Plank format flooring is designed to be installed in a randomly staggered pattern where the off-cut from the end of the previous row is used to start the following row, provided its length is equal to at least half the width of the plank. If another pattern is required for the project, then Havwoods must be consulted prior to order of the materials.



In order to achieve a harmonious blend of tones throughout the floor, material should be taken from several packs and mixed during the installation. Working from 3-4 packs at a time creates a blend of tones from the variation in the raw material. Colour variety is inherent to all wooden floors and is a key feature in the choice of real wood material for any interior scheme.

It is also important to keep the atmosphere constant during and for at least 24 hours after the installation (particularly overnight) when temperatures can drop causing variations in the atmosphere and may not allow the glue to cure effectively in glued T&G installations.

Always create an unfilled expansion gap of a minimum 12mm on areas of less than 25 m<sup>2</sup> and a minimum of 15mm on larger areas.

Areas in excess of 10 linear meters x 8m width of the boards may require extra expansion between the boards and intermediate expansion in the length. Expansion gaps can be covered using a skirting board or beading/scotia.



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Threshold profiles should be installed in all doorways, arches or narrow sections that lead from one room/area to the next. Perimeter details which do not allow for a skirting or scotia must have a threshold detail which covers the expansion gap. Threshold strips which are fixed to the substrate must have an expansion gap on each side of the fixing point. Threshold strips which are bonded to flooring must only ever be bonded to one side of the flooring across the expansion gap – bonding both sides removes the potential for expansion.

These thresholds must allow for the required expansion and contraction. Door frames and architraves can be undercut to allow the wood to slide underneath, still allowing for the expansion.

*Note: Never undercut newel posts as these are structural sections of the stairs.*

## Underlays

Floating installations of wood flooring require the floor to be installed onto an underlay (unless the product has an incorporated underlay backing). Underlays differ in their acoustic performance and ability to isolate substrate moisture. Ensure that the underlay being used for the installation meets the requirements of the project.

Underlays such as Havwoods' ProVent have an incorporated overlapping vapour barrier. This utilises a self-adhesive strip incorporated into an overlapping fold in the polythene face of the underlay which is used to secure the adjacent strips of underlay to one another and form a continuous vapour barrier.

Where foil-backed underlays (such as Havwoods' Undatech) are used, all the joins in the underlay should be secured / sealed with a foil or waterproof tape to ensure the formation of a vapour barrier. *Undatech is a foil-backed underlay to be used foil side down.*

A vapour barrier is not a DPM and an adequate surface DPM is required where substrate moisture content is found to be above 75%RH.

## Specific to Click-System Floors

Click-system locking profiles do not require the application of glue to the joints, except where trimmed adjustments to the joint profile need to be made (e.g. under door frames or undertaking board replacements).

Remove any damage or debris from the joint prior to installation of the flooring materials.

Always use a tapping block to fit planks together along the long edge of the boards first. At an angle, insert the 'tongue' / male section of the joint into the opposing joint section on the adjacent board – this will normally sit at a 30° angle from the subfloor. Tap along the length of the plank, knocking the boards together laterally to ensure that the joint is fully engaged – the plank should sit flat to the subfloor after doing this. Short ends of planks can either be levered together (joint-type 2G) or engaged vertically (joint-type 5G, 5S etc.) once the long-edge is engaged.

*Note: Forcing the plank down vertically without first tapping together from the side risks the joint being incorrectly positioned and can lead to gapping or tension within the floor.*



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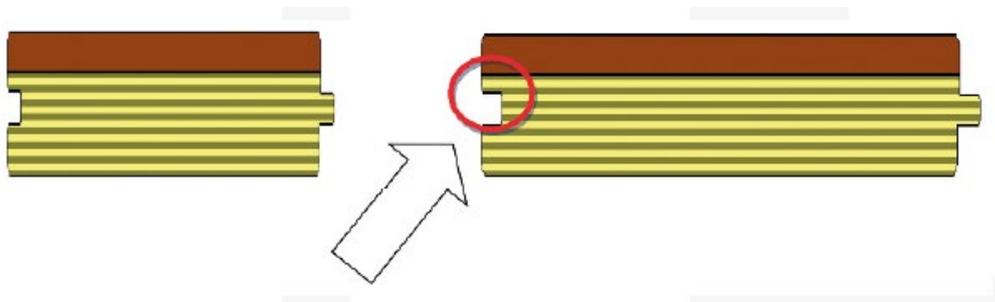
### Specific to Tongue & Groove Floors

Floated T&G boards are fixed together by applying glue (D3 or D4 type) in a continuous bead along all grooves. The glue should be applied to the upper corner of the groove to ensure full coverage around the tongue. To check for full coverage around the tongue remove an occasional board.

Spot-gluing leaves the join weak. Applying the adhesive to the bottom of the groove with the excess adhesive falling downwards means that the adhesive does not wrap fully around the tongue. Always remove excess adhesive from the face of the board immediately with a moist cloth (not wet) or as per adhesive manufacturer's instructions.

We recommend using clamps across the boards to prevent the adhesive pushing the boards apart. Adhesive is hydraulic and until the pressure of pushing the boards together has dispersed, boards tend to open slightly.

Glue Application location:



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## UNDERFLOOR HEATING (UFH)

We advise using a water pipe UFH systems that is set into a screed or electric type set into a smoothing compound under wood flooring.

Electric cable systems must have a minimum of 8mm coverage above the cables using a reinforced smoothing compound.

Heating elements (pipes or cables) should not be in direct contact with the reverse of the plank or the underlay. This is to avoid over-drying of the timber materials through direct transfer of heat into the wood. Electric mats or water pipes that are placed on top of screeds in routed panels must have a distribution board fitted above them to ensure an even heat distribution to the underside of the engineered board. This is typically a layer of plywood, particleboard or dry-screed panel. Aluminium spreader plates sit below pipes and do not offer separation of heating elements from the underside of the flooring.

Note: Some systems can create hot spots (when rugs or other items not on feet are placed directly onto the wood floor) which will negatively affect the stability of the wood flooring.

To ensure the surface of the wood flooring does not exceed 27°C (81°F), we recommend temperature probe(s) be installed within the subfloor build up to regulate the surface temperature. These should be located in each room / zone.

Havwoods' engineered floors which are stated as being suitable for use over UFH systems can be installed on electric or water-fed underfloor heating systems BUT the construction and joint profile of the product will dictate suitable installation methods.

Underfloor Heating systems must not generate temperatures above 27°C in the timber floor surface.

Plank and herringbone format floors with a click joint may be installed over UFH in a floating installation or fully bonded to the substrate.

Tongue and groove profile floors in all formats must be installed fully bonded to the substrate with a suitable flexible adhesive where UFH is present.

Chevron, Versailles panels and other parquet patterns must be bonded to the substrate, regardless of joint type, unless advised by Havwoods on a project-specific basis.

Havwoods solid timber floors are not suitable for installation over UFH.



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There are 5 main types of UFH systems which are discussed below:

- Hot water pipe systems embedded in a screed
- Hot water pipe systems in overlay panels
- Hot water pipe systems beneath a suspended/structural deck
- Electric foil or carbon mat systems
- Electric loose cable or sticky mat systems

*N.B: The final responsibility for the installation lies with the installer. If there is any doubt about product suitability, it is the duty of the installer to check with Havwoods staff before installing any Havwoods timber floor on an underfloor heating system.*

Below recommended flow temperatures are general recommendations only and a Heating Engineer should be consulted regarding the R-value/TOG of the substrate construction and chosen floor covering when determining the exact flow or operating temperature of the UFH system.

FLOW TEMPERATURES OF >45°C ARE NORMALLY NOT APPROPRIATE WHERE TIMBER FLOORS ARE TO BE INSTALLED

## **HOT WATER PIPE SYSTEMS**

The most common issues experienced with water pipe UFH systems are due to moisture ingress into the timber floor from the substrate or from excessive heat generated from the heating system. *Generally, the flow temperature at the manifold for a water pipe UFH system should not be above 40°C for an embedded system or 35°C for an overlay panel or suspended timber deck system.*

Havwoods recommend that surface temperature probes are installed to provide a cut-off when the surface exceeds 27°C.

### ***WATER PIPES EMBEDDED IN A SCREED: recommended flow temperature of c.40°C***

Tongue and Groove profiled timber floors must be fully bonded with a suitable flexible timber floor adhesive (Marldon MXA200) when installed over UFH. This is because the effect of UFH on the D3 type adhesive normally used for floating installations of T&G floors can result in gapping between planks over time.

Click System profiled plank format floors may be floated on an underlay or fully bonded to the substrate over embedded UFH. Click system herringbone pattern floors must be bonded to the substrate unless otherwise agreed with Havwoods.

Subfloor Moisture and Commissioning of UFH: it is a requirement that underfloor heating systems be commissioned prior to the installation of floor coverings. This is detailed in BS8201 and BS8204 national requirements. Failure to commission the UFH system by bringing the system up to temperature over several days, leaving to run for 5 days and then cooling down over several days means that deep-lying moisture may remain in the screed which will be released when the heating system is turned on. The release of this moisture can cause damage and floor failure. Always record substrate moisture levels prior to flooring installation.



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Any substrate above 65%RH / 2.0%CM for bonded installations or above 75% RH/2.5%CM for floated installations requires a surface applied DPM prior to timber floor installation. Anhydrite screeds with UFH should not be above 0.3%CM.

It is Havwoods recommendation that an Epoxy (Marldon MXS140) or Polyurethane liquid DPM (Marldon MXS150) be applied to the screed surface prior to timber flooring installations over embedded UFH systems. Where a floating installation of a click plank is to be carried out, a 250 micron polythene layer that's overlapped by 150mm at joints and taped with vapour tape can be used in place of a liquid DPM if preferred before the underlay and flooring are installed.

#### **WATER PIPES IN OVERLAY PANELS: *recommended flow temperature of c.35°C***

Tongue and Groove profiled timber floors must be fully bonded with a suitable flexible timber floor adhesive (Marldon MXA200) to an intermediate heat distribution layer when installed on overlay panel UFH. The proximity of the pipes to the back of the timber floor in this type of system can lead to hot spots on the floor surface and cause localised over-drying, shrinkage and cracking.

By introducing an intermediate heat distribution layer of min. 6mm thickness between the tops of panels/pipes and the timber floor, the heat will be more evenly spread, and these issues can be avoided. Suitable intermediate layers are; a fibre-reinforced flexible levelling compound, dry screed board, fibre-cement panels, plywood and P5 chipboard. A cementitious material (levelling compound or screed or fibre cement board) will provide lower thermal resistance and is preferable.

Click system profiled floors should also be installed onto an intermediate layer (as above), whether being floated on an underlay or fully bonded on overlay panel UFH systems.

*N.B Any intermediate layer (other than a levelling compound) should be fixed with a suitable adhesive or screw-fixed at close centres of no more than 300mm to the overlay panel. An aggregated primer may be necessary prior to any levelling compound application in order to provide a physical key over panels.*

**WATER PIPES BENEATH A SUSPENDED/STRUCTURAL DECK: *recommended flow temperature of c.40°C where a void is present between pipes and deck / recommended flow temperature of c.35°C where pipes are in contact with the underside of the deck.***

18mm+ thickness Tongue and Groove planks can form a structural deck by being nail or screw-fixed through the T&G as a hidden fixing directly to bearers/joists, provided that either a void is present between heating pipes and the underside of the deck or the pipes between bearers are encased in a cementitious compound. If pipes will be in contact with the underside of the deck, then a structural layer of min.18mm thickness T&G screed board, Plywood or P5 chipboard should first be installed.

Any T&G plank which is <18mm in thickness or is in a format other than a plank (i.e., a patterned floor) must be fully bonded with a suitable flexible timber floor adhesive (Marldon MXA200) onto a structural layer of min.18mm thickness T&G screed board, Plywood or P5 chipboard.

Click system profiled plank format floors should also be installed onto a structural layer (as above), whether being floated on an underlay or fully bonded on this type of UFH system. Click system herringbone pattern floors must be bonded to the substrate unless otherwise agreed with Havwoods.



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## COMMISSIONING & USAGE of HEATING, VENTILATION and AIR CONDITIONING (HVAC) SYSTEMS

This relates specifically to the transition from construction-phase environmental conditions to normal operating conditions where Havwoods timber floors are to be installed.

The concern relating to this project type is detailed in the expected Equilibrium Moisture Content (EMC) in the timber material as dictated by its environment:

### Construction-Phase Environment Example

Temperature: 15°C

Ambient Relative Humidity (RH): 60%

EMC: 11.14%

### Operational Environment Example

Temperature: 21°C

Ambient RH: 35%

EMC: 6.95%

Under the example transition above, the timber flooring will lose over 4% of moisture content once the environmental control system is brought into operation. This equates to ~1% of dimensional contraction (typical 0.22% dimensional change per 1% change in EMC). If this transition is made too quickly, the timber will be subjected to a high level of stress and this can result in surface cracking, gaps between timber elements, distortion of timber elements and other undesired actions.

Because of this, there is a requirement to bring the heating/ac system into operation slowly in order to allow staged-adaptation of the timber to the environment. This should be done as follows:

- Environmental conditions measured and recorded, and the temperature of the system set to that which is present in the environment at that time.
- The system should be allowed to operate at this temperature for at least 24 hours. RH should be monitored and recorded in the environment in this time.
- No more than 2°C increase in the system per 24-hour period with recordings to be made of RH.
- System brought up to operating temperature with each stage recorded and documented over several days with RH to also be recorded.
- An environmental measure should be in place (such as a LogTag temperature and humidity device) to monitor RH and provide an alert when RH levels fall below 35% so that plants or other moisture sources may be introduced.



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The optimum performance of the timber flooring will remain between 45–65% RH and between 18–22°C due to the 8% ( $\pm 2\%$ ) moisture content at the time of manufacture. The above process is designed to prevent failure of the timber flooring under sudden exposure to altered environmental conditions. BS8201:2011 states that acceptable seasonal gapping can be expected.

Requirements for temporary heating, during the installation at construction phase, in colder months to be operational 24 hours a day remain. All efforts should be made to achieve temperatures of 18°C at the time of timber flooring installation and until the project completion. If RH levels are found to be above 65% at the time of installation, works should be postponed until ventilation and/or dehumidifiers have been introduced in order to provide suitable installation conditions.

## FLOOR PROTECTION

When Havwoods floors are installed in a construction environment, they should be adequately protected in order to prevent damage from any following trades.

Havwoods recommend that a layer of building paper or another suitable breathable membrane is first installed prior to an impact protection layer. The building paper should be installed over the whole floor area and overlapped at joins before being taped on the surface, ensuring not to tape the protection to the wood floor surface. An impact protection layer of fire-retardant hardboard can then be installed over the building paper, leaving the hardboard 50–100mm short of the perimeter to allow ventilation of moisture.

Caution should be taken if using corrugated plastic floor protection (i.e. Corex) because this is non-permeable to moisture and can cause construction moisture to be trapped in the timber, leading to excessive expansion or telegraphing of the floor surface. If this type of protection must be used, always install a layer of overlapped building paper (or another suitable breathable layer) first and ensure Corex is not left on the floor for any extended period.

Any floor protection should be lifted regularly, ideally every 2–3 weeks, to allow ventilation to the floor on projects with elongated periods between flooring installation and project completion.

Never tape flooring protection directly to the flooring surface because tape adhesive can cause irreparable damage to the floor finish. Overlap paper layer and tape sheets to one another and/or walls and tape impact protection to the paper layer.

Never run underfloor heating systems while floor protection is in place because the protection layers can trap moisture or generate elevated surface temperatures, potentially leading to problems such as excessive expansion or over-drying and shrinkage of the wood material respectively.



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**Wood that Works.**

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## CARE & MAINTENANCE

Havwoods timber floors are designed to withstand the wear and tear of day-to-day life. Because wood is a natural material, it will react to the environment it is installed in. Dry environments will cause a floor to lose moisture, and this can lead to issues such as gapping between planks or cracks between growth rings. Humid environments will cause moisture to be gained and this can result in expansion of the floor. Using the correct cleaning products helps a wooden floor to adapt to its surroundings while still looking and performing as required.

Havwoods flooring produced in a range of finishes. Each finish has a specific range of products designed to clean and maintain the surface and optimise performance. Here is a list of finishes and the relative cleaners and maintainers we recommend:

### ● LACQUER FINISHES

- Cleaner: MARLDON MULTICLEANER (alternatively Bona Cleaner)
- Maintainer: Bona Polish Matt/Gloss (depending on desired sheen level)

### ● UV OIL/HARD-WAX OIL FINISHES

- Cleaner: MARLDON CLEANCARE (alternatively Osmo Wash & Care)
- Maintainer: MARLDON LIQUID WAX CARE Clear/White (alternatively Osmo Liquid Wax Cleaner)
- **OR** Maintainer: Waterborne maintenance oil where oil-based liquid wax care is not desired e.g. Junckers Maintenance Oil or Bona Oil Refresher.

### ● NATURAL OIL FINISHES

- Initial treatment is required after installation with MAINTENANCE OIL or HARD-WAX OIL
- Cleaner: MARLDON CLEANCARE (alternatively Osmo Wash & Care)
- Maintainer: MARLDON LIQUID WAX CARE Clear/White (alternatively Osmo Liquid Wax Cleaner)
- **OR** Maintainer: Waterborne maintenance oil where oil-based liquid wax care is not desired e.g. Junckers Maintenance Oil or Bona Oil Refresher.

### ● UNFINISHED PRODUCTS

- Supplied as raw wood and require sanding, filling and finishing after installation
- Finish: LACQUER, HARD-WAX OIL OR OIL – TO BE APPLIED BY CONTRACTOR
- Cleaner: AS APPROPRIATE TO CHOSEN FINISH
- Maintainer: AS APPROPRIATE TO CHOSEN FINISH

## PREVENTATIVE MAINTENANCE



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Abrasive particles of dirt and grit trafficked on to a wooden floor can be very abrasive and seriously shorten the lifespan of any treatment. The floor's surface will quickly become dull due to scratches and the wood may be affected by the ingress of moisture and stains. Matting placed at external entrances is essential in prolonging the appearance and life of the floor, whilst reducing the frequency of refurbishment. It is important that matting is of a type which can remove grit and absorb moisture. Barrier matting should be regularly cleaned, and additional matting may be required during periods of snow or heavy rain.

It is also very important to ensure that the floor is protected from moveable furniture, such as tables and chairs, and a simple solution to this is to protect the floor by applying felt furniture feet to underside of the furniture legs. Regularly check and clean the felt feet to avoid / reduce embedded grit or particles from scratching the wood surface.

Stiletto heels can indent timber flooring due to the very high point loading this type of footwear applies to the timber surface, especially if the metal pin within the heel becomes exposed.

Spillages on wooden floors should always be removed as quickly as possible.

## REGULAR / DAY-TO-DAY CLEANING

An effective maintenance programme will keep the floor clean and looking as good as possible. The following information is designed to provide a starting point for such a programme and is appropriate for residential and commercial installations. In commercial installations with high usage, regular maintenance will be combined with routine specialist commercial maintenance from a flooring contractor.

- Regularly vacuum the floor to remove dust, lint and animal hair.
- Fill the SPRAY MOP reservoir with the correct dilution of cleaning solution for the floor finish type.
- There will need to be multiple mop heads so that these can be washed and changed regularly, ensuring contamination is being removed from flooring during the cleaning process.
- Spray mops ensure that there isn't standing water on the floor surface for any prolonged period, it is important to avoid this wherever possible.

## MAINTENANCE APPLICATION (RESIDENTIAL)

Apply a surface maintainer periodically (typically every 6-12 months) to saturate the floor surface to prevent staining and limit visibility of superficial marks and scratches. Marldon Liquid Wax Care can also be used as a spot cleaner for oil- type finishes to remove scuffs and residues from the floor surface. In high usage areas such as kitchens and entrance hallways, maintenance application may be required more regularly.

- Apply a small amount of product to the floor and spread evenly with a new flat microfibre mop head.
- Work across the floor in the direction of the planks where possible until the whole floor is evenly covered.
- Work around furniture other than chairs and rugs, which should be moved.
- Avoid foot traffic until the floor surface is dry, normally 30-60 minutes.



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## MECHANICAL CLEAN AND REFRESH

Periodic Mechanical Cleaning is necessary in high traffic environments and often in construction projects to remove contamination from the grained texture of the wood and ensure that contamination that builds under heavy usage is lifted from the floor before a maintenance coat is applied to refresh the floor finish.

- Use a scrubber-drier machine with rotating pads or brushes such as an iMop, Bona Power Scrubber, Pallmann Turbo Scrubber to clean both across the grain of the wood and in line with the grain of the wood. These machines dispense cleaning solution, and this cleaner is formulated for machine application. Suitable low-foaming cleaners for this application are Marldon MXC710 & MXC735 as well as Bona Deep Clean Solution and Osmo Wash & Care. Dispense the cleaner onto the floor, scrub with the rotating brushes and then use the machine suction to lift the fluid from the surface. Use a flat mop to the edges of the room where standing water may be left to absorb this. Work in areas of 10-20m<sup>2</sup> at a time so that standing water isn't present on the flooring for prolonged periods and the cleaning solution doesn't dry out before the scrubbing process is complete. Repeat if necessary.
- Allow the floor to fully dry before applying any maintenance materials.
- Once fully dry, use a flat applicator mop to apply either Marldon Liquid Wax Care (oil-based product) or Junckers Maintenance Oil (water-based product) in line with the grain of the planks at a consumption of 80-100m<sup>2</sup> per litre for Liquid Wax Care or 30-50m<sup>2</sup> per litre for Junckers Maintenance Oil (if the floor is more porous consumption may be lower). Pour the maintenance product down in small amounts directly onto the floor and immediately spread out until the surface has a saturated sheen. Once dry (30-40 mins under normal conditions) the sheen will reduce and retain the original sheen of the floor.
- UV OIL & OIL FINISHES ONLY - If there are areas where the Oak colour can be seen through an oil finish, the correct colour of Osmo or Saicos Hard-Wax Oil (or equivalent) may be used to top up the floor finish to add a greater level of pigment and a higher level of surface build. This is best applied by brushing on to the surface and buffing the floor with a white floor pad and oiling cloth either manually for small, localised areas or using a low-speed rotary scrubbing/polishing machine for larger areas. Always do a test patch to approve colour and ensure adhesion before applying a hard-wax oil finish to the wider floor area.



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