



HAVWOODS
INTERNATIONAL

Havwoods Installation Guide: MAGNA Magnetic Timber Flooring Installations

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 dry-lay installation of Magnetic flooring only. 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

HVAC heating/climate control

Floor Protection

N.B: 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.

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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 1 week 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 levels can 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, which can be purchased through Havwoods, to monitor the humidity and temperature level that can be easily 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.

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.

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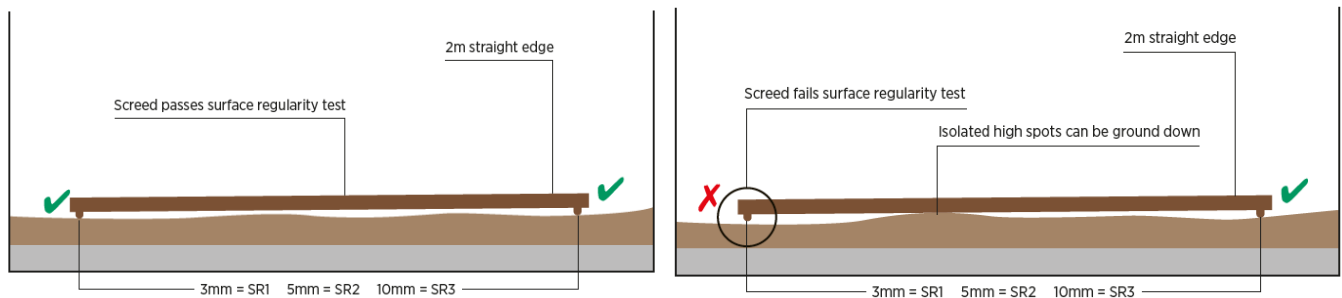
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SUBFLOOR PREPARATION

Magna magnetic wood flooring is designed for installation onto subfloors of a metallic nature, most commonly steel-encapsulated raised access floor panels.

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.

In addition to the above requirements, the lipping between access panels must not be more than 0.5mm which ensures lipping is not greater than the thickness of the magnetic backing material.



Raised Access Floors

MAGNA Floors may be installed to new steel-encapsulated raised access floor panels. This is provided that any contaminants, such as oil residues from the manufacture of the panels, are removed prior to installation.

All access floors must have pedestals adjusted to remove any rocking action and be levelled, with pedestals locked in position, to best avoid the potential for deflection in the finished flooring. Access panels should be fixed to pedestals where possible.

Existing raised access panels must be thoroughly cleaned and degreased with appropriate cleaning agents to remove any adhesive residues and other contaminants prior to direct installation of MAGNA timber flooring.

Magna installations are dependent on full contact being achieved between the underside of the MAGNA product and the substrate.

INSTALLATION

Firstly, Install a self-adhesive expanded Polyethylene foam strip to the perimeter of the area. This allows for expansion of the flooring but also ensures a tight fit. Use the appropriate depth of foam for the installation area, never less than 10mm.

The first run of MAGNA wood floor should then be installed with angled edge of the board installed against the perimeter foam. Use a string or laser-line used to ensure that the layout and pattern is set and maintained throughout the installation.

Continue laying the floor with the angled edge being pushed securely against the edge seal of the previous plank, forming an airtight joint.

Use a hammer and wooden tapping block to adjust the laying line during installation.

For areas with a greater span than 15m, install an 8mm soft mastic joint or use a cover strip which does not restrict floor movement every 15 linear metres of floor span. Mastic joints are formed using an 8mm packer which can be removed after installation. Mask the board surface on either side of the joint and fill with a colour-matched acrylic mastic filler.

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.

If the installation is over more than one day, weight the last row to prevent movement overnight (you will have packs of boards at this stage). If the boards do shift, use a string/laser line and a tapping block to re-establish a new working line

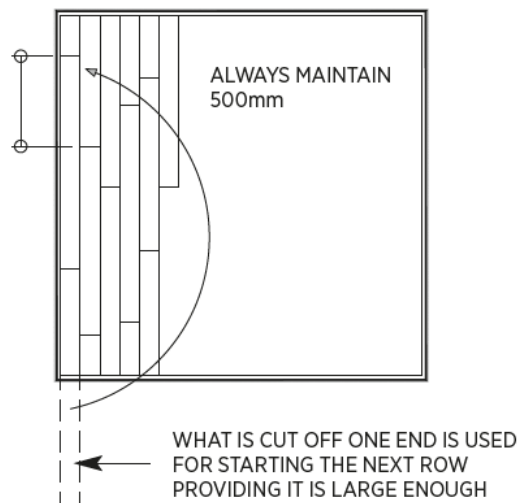
All thresholds must allow for the required expansion and contraction. Door frames and architraves can be undercut to allow the wood to slide underneath, still allowing for the expansion.

Specific to Plank Format Installations

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. If another pattern is required for the project, then Havwoods must be consulted prior to order of the materials.

When planning the area, try to balance the board width against the two most prominent walls, considering focal points such as windows. You must always try to have at least half a board at each opposing wall because smaller width boards are difficult to fit and may not give the adequate level of finish, particularly if the wall is not straight.

We recommend dry-laying the first two or three rows and adjusting the first row to the wall contours and adjusting for the width you have planned. Make sure you have at least a 300mm distance between header joins, ideally 500mm.



Note: For detailed installation advice and training on best practices, Havwoods Academy training courses are available. Please contact Havwoods for further information.

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Tips for Installation

Where short lengths are required in an area such as across a narrow corridor or walkway, additional cuts should be made across the back of planks (perpendicular to the length) to 50% of the plank thickness every 150-200mm along the plank length. This assists in ensuring full contact between the reverse of the smaller plank section and the substrate in these areas. This principle can also be used should a longitudinal bow in product inhibit contact with the substrate – bowing can occur in planks from time to time due to the balancing of moisture between the two layers of the floor and this isn't viewed as a product fault. Should an isolated area of lipping between elements occur, a 16-gauge pin (from a nail gun) may be used to remedy this. The board may still be lifted for access in future and the hole can be filled with a wax wood filler to hide the pin hole.

Removal and Replacement of Planks

MAGNA planks can be removed and replaced anywhere within the floor. Use a suction device or lifting bar as appropriate to raise the floor at the end joint and then remove the adjacent planks as required.

When replacing, take care to ensure that the short-end joint is engaged between boards. A slight twisting motion is required to ensure the seal is located under the lip of the adjacent board.

For patterned floors, such as herringbone, a combination of lifting tool and thin gauge spatula will be required to lever out the first plank within the floor and similarly to replace the last board when reinstalling after access. Take care using metal tools with timber flooring elements because chips and scratches can be caused.



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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.

The optimum performance of the timber flooring will remain between 40-60% RH and between 18-22°C due to the 8% (±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

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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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