

Bonding Wood Floors - Concrete and conventional sand-cement Screed sub-floors

Both solid & engineered flooring can be bonded to a variety of sub-floors using purpose made adhesives, creating a traditional solid feel underfoot.

Environmental Conditions

- All wet trades must be thoroughly dry before flooring materials are delivered to site.
- Maintain suitable ambient humidity 40 to 60% RH. (Monitor with a hygrometer)
- If necessary employ a domestic humidifier / dehumidifier to maintain suitable conditions.

Moisture condition of mineral based sub-floors

- Ensure that screeds, concrete, etc are < 60% RH before installation commences.
- Employ a suitable primer moisture barrier if necessary.
- At ground floor level and below, wood flooring must be protected from ground water by an integral DPM, or in the case of basements by tanking.

Soundness of sub-floors

- Ensure all sub-floors are sound, of load-bearing strength and free from contaminants that may impede adhesion. (Note: If sub-floors are contaminated or affected by adhesive residues seek further advice).
- Check that the sub-floor has a satisfactory cohesive strength before adhering wood flooring.
- Avoid accelerated drying of new concrete/screeds as this may lead to poor cohesive strength.

Evenness of sub-floor

- In order to achieve satisfactory contact between wood flooring and adhesive, sub-floors must be even to within 2mm over any 2 lineal meter area.
- If levelling is required above a suitable primer moisture barrier, apply a purpose-made fine graded aggregate over the second coat of wet primer, allow to cure then vacuum off all loose aggregate; (This will aid adhesion between primer and levelling compound). Then use 'rapid dry formulae' water-mix (i.e. instead of latex mix) levelling compound, as these are typically stronger and develop strength quicker (See product instructions for further details).
- Ensure that levelling compounds are fully cured and thoroughly dried in favourable drying conditions before installation commences (see manufacturers instructions for further advice).

Adhesive bonding of wood flooring to sub-floor

- Use a purpose made, permanently flexible adhesive such as 1-part polyurethane, when adhesive fixing.
- Apply adhesive to the sub-floor not the wood flooring or the tongue and groove.
- Always use the trowel type recommended by the adhesive manufacturer for the type of flooring being installed (e.g. solid plank, strip, woodblock, engineered plank etc).
- Replace worn trowels.
- Ensure full contact between the underside of the flooring element and adhesive.
- Any adhesive that that comes into contact with the face of the boards must be cleaned off whilst wet, as residues are not removable when cured.

IMPORTANT NOTE

Always check the mutual compatibility of moisture barriers, primers, aggregates, levelling compounds and adhesives before installation. Refer to instructions for use for each product.

Provision for expansion

- As a guide only allow a minimum 15mm expansion wherever the floor meets obstacles including perimeters walls, structural supports, hearths etc.
- Create additional expansion breaks in doorways using suitable profiles such as T-section thresholds or transition strips.
- Create additional expansion breaks in large floors.
- Where possible install flooring so that planks, strips run parallel to the longest walls, so the direction of greatest potential expansion (i.e. across the grain) does not coincide with the direction of greatest dimension, esp. in large floors.
- The precise combined provision for expansion must be judged by the installer taking into account environmental humidity, moisture content of wood at time of installation, timber specie and size of the floor.

Tip

- Flooring must not be exposed to artificial heat sources from the sub-floor. Hot water pipes within screeds can cause excess heat and must be thoroughly insulated. Floor temperatures must not exceed 24 Celsius.

Further information

The combination and order of products used for sub-floor preparation can vary according to specific conditions of the sub-floor. This information is not intended to be exhaustive, or 'how-to' instructions for the novice but will serve as a further guide only for the experienced installer. Further information is available on request.

Bonding Wood Floors - Bonding to Wood based Sub-floors

Wood-based sub-floors are materials such as floorboards, flooring grade chipboard, plywood, or OSB.

Existing hardwood floor coverings should be removed before installation of new hardwood floors.

Environmental Conditions

- All wet trades must be thoroughly dry before flooring materials are delivered to site.
- Maintain suitable ambient humidity 40 to 60% RH. (Monitor with a hygrometer)
- If necessary employ a domestic humidifier / dehumidifier to maintain suitable conditions.

Moisture condition of Wood based sub-floors

- Ensure that wood based sub-floor materials are not > 2% higher in moisture than the new wood flooring materials being installed.

Suspended wood based sub-floors at ground level

- Voids beneath suspended wood based sub-floor on ground level must be well ventilated to avoid high humidity in the sub-floor void.
- First lay a building paper moisture barrier (e.g. Sisalkraft Moistop), over the existing sub-floor overlapping joints by 100mm and taping with a waterproof tape.
- Then install a WBP ply layer, securely fixing through the building paper to the sub-floor.

Soundness of sub-floors

- Ensure all sub-floors are sound, of load-bearing strength and free from contaminants that may impede adhesion. (Note: If sub-floors are contaminated or affected by adhesive residues seek further advice).

Evenness of sub-floor

- In order to achieve satisfactory contact between wood flooring and adhesive, sub-floors must be even to within 2mm over any 2 lineal meter area.
- Floor boarded sub-floors typically require a WBP plywood covering to be securely fastened to the floorboards before adhesive fixing new wood flooring.
- It is recommended that flooring grade chipboard, OSB & old floorboards are first covered with WBP plywood which is securely fastened to the sub-floor before adhesive fixing new wood flooring to protect against surface contaminants that may impede adhesion.

Adhesive bonding of wood flooring to wood based sub-floor

- Use a purpose made, permanently flexible adhesive such as 1-part polyurethane, when adhesive fixing.
- Always use the trowel type recommended by the adhesive manufacturer for the type of flooring being installed (e.g. solid plank, strip, woodblock, engineered plank etc).
- Replace worn trowels.
- Ensure full contact between the underside of the flooring element and adhesive.
- Any adhesive that comes into contact with the face of the boards must be cleaned off whilst wet, as residues are not removable when cured.

Provision for expansion

- As a guide only allow a minimum 15mm expansion wherever the floor meets obstacles including perimeters walls, structural supports, hearths etc.
- Create additional expansion breaks in doorways using suitable profiles such as T-section thresholds or transition strips.
- Create additional expansion breaks in large floors.
- Where possible install flooring so that planks, strips run parallel to the longest walls, so the direction of greatest potential expansion (i.e. across the grain) does not coincide with the direction of greatest dimension, esp. in large floors.
- The precise combined provision for expansion must be judged by the installer taking into account environmental humidity, moisture content of wood at time of installation, timber specie and size of the floor.

Further information

The combination and order of products used for sub-floor preparation can vary according to specific conditions of the sub-floor. This information is not intended to be exhaustive, or a how to guide for the novice, but will serve as a further guide only to the experienced installer. Further information is available on request.

Bonding Wood Floors - Traditional Secret-Nail Fixing of Wood Floors

Solid tongued and grooved strip and plank flooring may be installed by secret-nail fixing to suitable wood-based sub-floors such as floorboards, flooring grade chipboard, plywood, or OSB.

In most cases existing decorative hardwood floorcoverings should be removed before the installation of new hardwood flooring.

Environmental Conditions

- All wet trades must be thoroughly dry before flooring materials are delivered to site.
- Maintain suitable ambient humidity 40 to 60% RH. (Monitor with a hygrometer)
- If necessary employ a domestic humidifier or dehumidifier to maintain suitable humidity.

- Ambient temperature to be 18 to 22 Celsius during acclimatisation and installation.

Basic Requirements of the Sub-floor

- Wooden sub-floors must not be installed as a floating floor, but be securely fixed (e.g. floorboards to joist).
- Ensure all sub-floors are sound, free from decay, and of load-bearing strength.
- Wood based sub-floor materials must not be more than 2% higher in moisture content than the new wood flooring materials being installed.

Tip

- Flooring must not be exposed to artificial heat sources from the sub-floor. Hot water pipes beneath suspended wood floors can cause excess heat and should be thoroughly insulated. Floor temperature must not exceed 24 Celsius.

Evenness of sub-floor

- All wood based sub-floors must be even to within 2mm over any 2 lineal meter area.
- In order to achieve the necessary degree of evenness, traditional softwood floor boarded sub-floors typically require a WBP plywood covering to be securely fastened (preferably by screwing) to the floorboards before secret-nail fixing new wood flooring. (Plywood must also be of suitable moisture conditions. See 'Basic Requirements of the sub-floor' above.
- It is recommended that flooring grade chipboard, OSB & old floorboards are first covered with WBP plywood which is securely fastened to the sub-floor before secret-nail fixing new wood flooring, as this will hold nails well and help avoid squeaking.

Suspended wood based sub-floors at 'ground level'

- Voids beneath suspended wood based sub-floor on ground level must be well ventilated to avoid high humidity in the sub-floor void.
- First lay a building paper moisture barrier (e.g. Sisalkraft Moistop), over the existing sub-floor overlapping joints by 100mm and taping with a waterproof tape.
- Then install a WBP ply layer, securely fixing through the building paper to the sub-floor.

Secret-Nail Fixing

- When fixing flooring solely by secret-nailing, we recommend that a building paper moisture barrier (e.g. Sisalkraft Moist Stop), is laid over the existing sub-floor overlapping joints by 100mm and taping with a waterproof tape.
- Boards of 150mm or wider may be secured with adhesive in addition to secret nail fixing.
- When using the combination of secret-nailing and adhesive, a moisture barrier building paper is first laid over the existing wood based sub-floor, followed by WBP ply. The WBP ply is securely fixed through the building paper into the wood based sub-floor. Hardwood flooring is then bonded to - and nailed through the ply base into the existing wood based sub-floor.
- Secret-nail fixing is achieved using a purpose made floor nailer (e.g. Portanailer, Primatech etc) which are used with purpose made serrated galvanised floor nails of varying length depending on the thickness of flooring being installed. (18-20mm flooring thickness = 50mm nail).
- Tongue and groove flooring is secret-nailed (also called 'blind nailed') fixed through the tongue at approx 45 degrees into the sub-floor at intervals of 200 to 250mm.
- Nails are placed 40 to 60mm to each end of each boards, with not less than two nail fixings per board.
- In addition to secret-nailing on the tongue side, starting rows one and two are face nailed or can alternatively bonded to sub-floor to secure the groove side that is not linked into an adjoining tongue.
- If starting from a centre line using biscuit tongues, the two centre boards may be face

nailed or preferably bonded to the sub-floor using a flexible adhesive.

Provision for expansion

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- Create additional expansion breaks in large floors.
- Where possible install flooring so that planks, strips run parallel to the longest walls, so the direction of greatest potential expansion (i.e. across the grain) does not coincide with the direction of greatest dimension, esp. in large floors.
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