...the right choice

INSTALLATION GUIDE FOR OSB SIMBOARD® FLOORING

Tongue and Grooved made with Formaldehyde-Free Binders

The Right Choice for the Environment

Distributed by

Simmonds Lumber
Timber importers & wholesalers

Manufactured by

Simmonds SimBoard®

SWISS KRONO

General Information

The unsanded version SimBoard® T + G has a water and moisture-repellent ContiFinish® surface for use in kitchens, bathrooms and laundry rooms. SimBoard® T + G excels in a vast range of applications with its stiffening properties and very high flexural strength. Despite its relatively low weight, SimBoard® achieves bend strengths similar to those of plywood.

Thanks to its good technical properties and closed surface, SimBoard® T + G is excellently suited for renovating and refurbishing existing buildings and for constructing new, eco-friendly houses. The precisely fitting tongue and groove system permits fast, easy installation directly on bearers and joists or on top of insulation for reducing footfall sound. Another advantage is how much faster SimBoard® is to lay vs. solid timber flooring.

SimBoard® is an engineered wood material that lends itself to a vast range of applications, most often used in timber constructions and interior finishing's. SimBoard® is a very good and cost effective solution for construction projects.

Laying Instructions

When using boards outdoors, cover them immediately after installation to protect them from the weather.

Leave expansion gaps where boards adjoin other structures.

Surfaces longer or wider than 10 metres should have at least one expansion joint in the middle.

When installing on beams or rafters, place the boards with their short sides down.

Boards with straight edges should be laid on joists with a surrounding expansion gap of at least 3mm.

When installing boards with tongue and groove joints, leave an expansion gap at walls. With floating floors, the expansion gap should be 12mm wide.

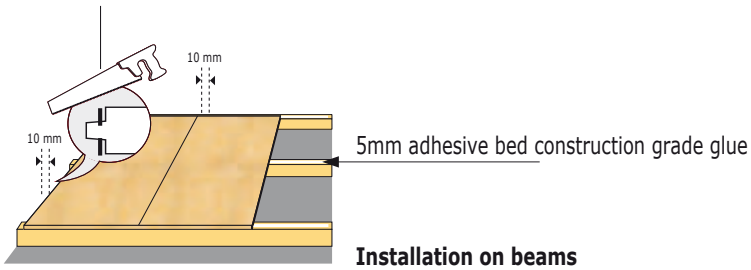
Place boards with their long sides perpendicular to the joists.
Joints must always be on joists.

Long board edges that don't rest on a joist must be connected by tongue and groove joints or provided with an appropriate support or connecting element.

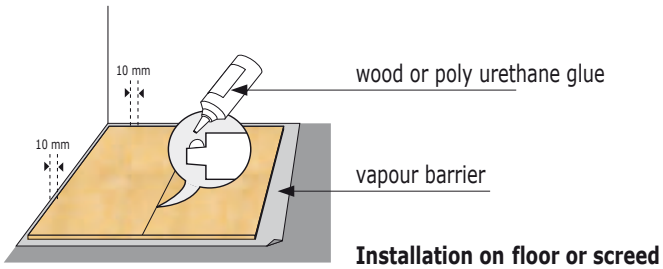
For ground-floor hardwood flooring, that rests directly on the ground or foundation, seal the underside of the floor construction against wind and moisture. Use wood screws, staples or nails to attach SimBoard® boards to the floor. Observe the applicable standards and regulations.

Before laying the board on the joists apply a 5mm adhesive bed of construction grade glue on the support.

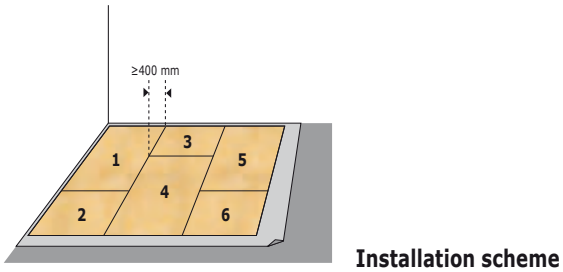
Also use a wood or poly urethane glue on the tongue.



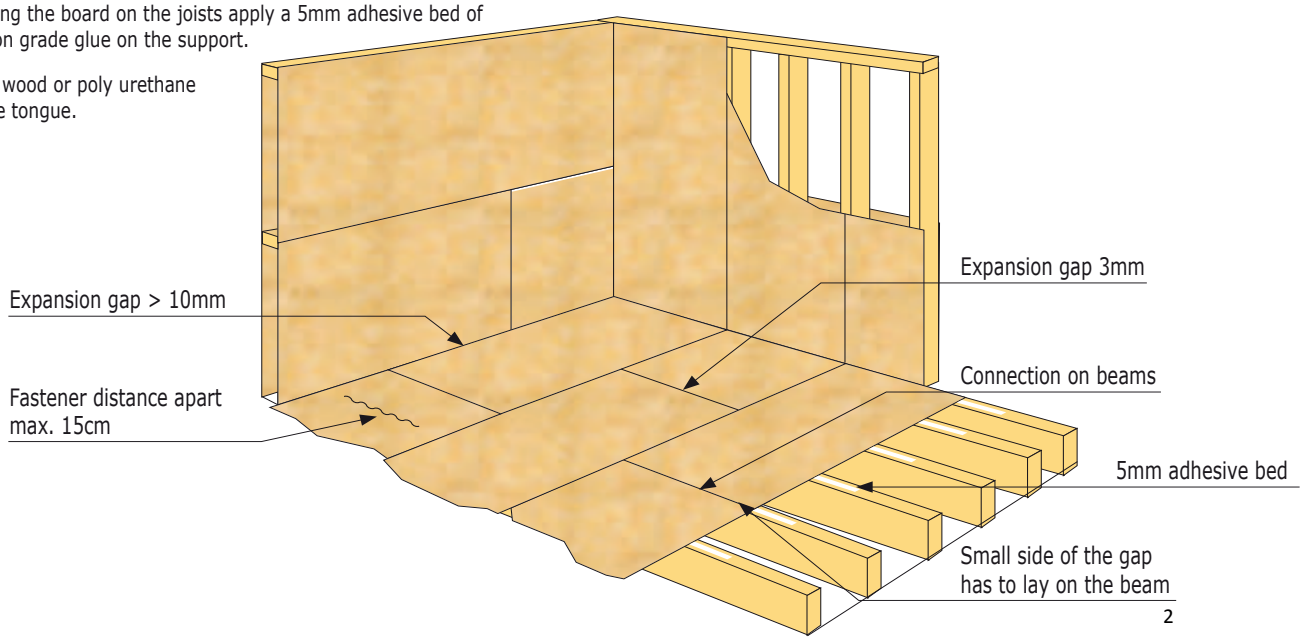
Installation on beams



Installation on floor or screed



Installation scheme



Laying Instructions Cont.

SimBoard® is often used to make large floors. The product can remain visible or be covered by another material. Regardless of which part of the floor the boards are used for it is essential to leave expansion gaps and joints otherwise moisture induced deformation can cause buckling. Therefore always leave an expansion gap of at least 10mm at all walls, projecting elements and those that rise out of the floor (pipes, conduits, thresholds, columns, room dividers etc.).

In rooms more than 10 metres wide or long, provide an additional 15mm wide expansion joint in the middle. In rooms more than 20 metres long, provide two expansion joints. Cover expansion gaps at walls with skirting mould.

Cover joints in the middle with special expansion units.

When attaching strips or covers, do not screw them to the OSB boards, as this would defeat the purpose of a floating floor.

Minimum Thickness

	attic floor 100 kg/m²	residential used floor + flooring 220 kg/m²	residential used floor + dry screed 335 kg/m²	residential used floor + screed 415 kg/m²
Single span distance [mm]				
450		18 mm	18 mm	22 mm
600	18 mm	22 mm	22 mm	
750	22 mm			
Multiple span distance [mm]				
450				18 mm
600		18 mm	22 mm	22 mm
750	18 mm	22 mm		

The use of 18mm boards on 600mm centre to centre joist spacing requires a stiff flooring material like parquet, timber flooring or laminates. A 22mm boards maybe used under thin flooring materials like vinyl or linoleum.

The boards should be installed with the long side perpendicular to the floor joists and the tongue and groove joints glued with an adhesive designed for sub-floor installation. End joints should be staggered and always be continuously supported by joists. SimBoard® may be applied in platform constructions where the boards are exposed to direct precipitation for a limited period.

Tiled (or similar) Areas

A suitable underlay is recommended (ceramic tile underlay) in order to avoid cracking at the joints of OSB SimBoard® as this is a manufactured wood product which can be subject to expansion and contraction, a flexible adhesive recommended by the tile manufacture should also be used.

Type of Fixing Recommended

The kind of nail or screw that should be used to attach OSB boards depends on several factors. The most important factors are the material of the rafters and the thickness of the OSB SimBoard®.

The following table provides information on different beam/joist materials (hardwood, softwood, steel), the corresponding attachment methods (manual or powered) and types, OSB SimBoard® thickness and minimum fastener dimensions.

Attachment Guide for Different Materials and Thickness:

Method	Beam/joist material	Fasteners	Thicknesses SimBoard® T + G	Minimum Fastener size
Manual nails	Hardwood, coniferous Wood	Ball or flat head nails	18 mm, 22 mm	50 mm x 2.8 mm
Manual nails	Hardwood, coniferous Wood	Ball or flat head nails	25 mm	65 mm x 3.75 mm
Manual nails	Softwood	Ball or flat head nails	18 mm, 22 mm	65 mm x 2.8 mm
Manual nails	Softwood	Ball or flat head nails	25 mm	75 mm x 3.75 mm
Powered	Hardwood, coniferous Wood	D-head, round head or finish nails	18 mm, 22 mm	50 mm x 2.5 mm
Powered	Hardwood, coniferous Wood	D-head, round head or finish nails	25 mm	65 mm x 2.5 mm
Powered	Softwood	D-head, round head or finish nails	18 mm, 22 mm	65 mm x 2.5 mm
Powered	Softwood	D-head, round head or finish nails	25 mm	75 mm x 2.5 mm
Powered	Steel	Hardened twisted steel nails, conical point nails	18 mm, 22 mm	32 mm x 2.5 mm
Powered	Steel	Hardened twisted steel nails, conical point nails	25 mm	40 mm x 2.6 mm
Pneumatic nails	All wood types	T-head or finish nails	18 mm, 22 mm	50 mm x 2.5 mm
Pneumatic nails	All wood types	T-head or finish nails	25 mm	75 mm x 3.15 mm
Screws	All wood types	Type 17 countersunk, self-drilling wood screws	18 mm, 22 mm	10 g x 50 mm
Screws	All wood types	Type 17 countersunk, self-drilling wood screws	25 mm	14 g x 65 mm
Screws	Steel	Countersunk self-embedding head or self-drilling head screws, preferably with self-breaking cutter nibs	18 mm, 22 mm	9 g x 45 mm or 10 g x 45 mm

SimBoard® Floor Coating

Due to their decorative surfaces, OSB boards are often used exposed, for example as ready-made flooring, for furniture or shelves, or as ceiling or wall panelling.

In these cases, it is a good idea to protect the boards against soiling and wearing and/or to stain or paint them as appropriate.
The approach taken differs depending on whether sanded OSB or unsanded OSB with ContiFinish® surface is used. For directly coating unsanded boards, only solvent-containing PU (DD) or synthetic resin paints should be used. For other coating systems, it is advisable to use sanded boards instead.

Any type of coating suitable for solid wood can be applied to sanded surfaces. This includes paints, varnishes, oils, waxes and glazes. Like with solid wood, the wood fibres stand up after applying the first coat, which initially may cause the surface to become rough.

Transport and Handling

Protect the corners and edges before lifting, moving or stacking (especially with T + G boards).
Take steps to prevent the boards, and especially the unprotected edges, from absorbing large amounts of moisture during transport and installation. Be careful not to damage the edges when lifting, moving and stacking boards (this applies especially to tongue-and groove boards)

Check against the labels or producer's documentation on-site to make sure that the following are correct: thickness, approved utilisation class, surface (sanded or unsanded) and edge type
(square-edge or tongue-and-groove).

During installation, boards may be briefly leaned against a solid structure at a 70° angle.

Always carry individual boards in an upright (vertical) position.

Acclimatisation

Precondition boards prior to installation.
Store boards for about three days under the same climatic conditions as at the installation site.
This adjustment to the ambient moisture at the installation site will prevent excessive shrinkage or swelling.

Storage

Protect boards from exposure to significant moisture or very high relative humidity.
Prevent direct contact of the boards with the floor.
Only store outdoors temporarily, and if unavoidable cover boards with watertight but water vapour-permeable tarpaulins.
Always stack boards horizontally on pallets and wooden supports (spaced no more than 600mm apart).
Align wooden supports precisely with one another and parallel to the shorter side of the boards.
Lay the boards so their edges line up (with a maximum overhang of 15mm).

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Dealing with 'Nests' and Blue Stain

OSB boards are characterised by so-called 'nests'. These are small flaws caused by overlapping strands that cannot be removed by sanding. The only way to obtain an absolutely smooth surface is by applying and trowelling a filler, which can be a mixture of clay and sanding dust from the board or a special product for this purpose.

OSB is a natural product. The colour of the boards can therefore vary depending on the time of year and the source of the wood.

As a result of bad weather or inappropriate storage, pine wood can very quickly become discoloured by blue stain. However, this does not affect its structure or technical properties. For large surfaces, it is advisable to mix up the boards to create an irregular pattern.

Machining

OSB can be sanded, sawn, milled and drilled just like solid wood and using all of the same tools.

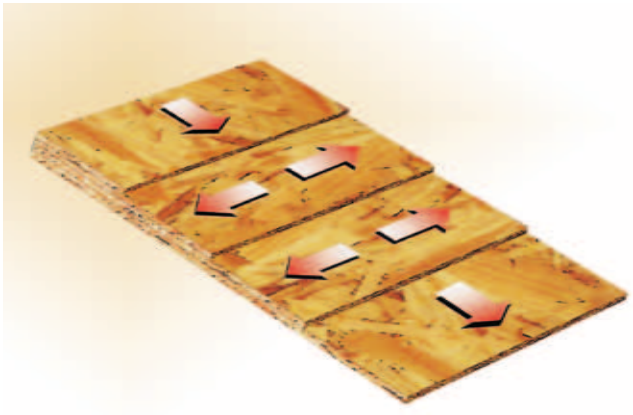
Exposure Statement

SimBoard® may be exposed to the weather for up to three months. However, it is always advisable to enclose the building as soon as possible after laying the floor.

Ponded water should be swept off, note that a high moisture content and swelling, may cause a reduction of the characteristic values.

Do not install floor coverings on a moist board.

Minor swelling that may result from weathering can be removed by a sanding following the enclosure of the building. Before sanding the board, ensure the moisture content of does not exceed 18% as this may jeopardise the structural property of the board. Note however, once a MC% reduction (less than 18%) is achieved the board will retain its original strength rating. The depth of material removed shall not exceed more than 1 mm over the whole board and max. 2mm within 80mm to the edges.



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Technical Data Sheet

Characteristic values acc. to EN 13986

For non load bearing, load bearing and stiffening applications in dry and humid conditions

		Strand direction					
		Major axis			Minor axis		
		Thickness range [mm]					
	d	6 - 10	>10 - 18	>18 - 25	6 - 10	>10 - 18	>18 - 25
Strength values [N/mm²]							
Stresses on board							
Bending	$f_{m,k}$	18.0	16.4	14.8	9.0	8.2	7.4
Compression	$f_{c,90,k}$	10.0			10.0		
Shear	$f_{v,k}$	1.0			1.0		
Plate loading							
Bending	$f_{m,k}$	9.9	9.4	9.0	7.2	7.0	6.8
Tensile force	$f_{t,k}$	9.9	9.4	9.0	7.2	7.0	6.8
Compression	$f_{c,k}$	15.9	15.4	14.8	12.9	12.7	12.4
Shear	$f_{v,k}$	6.8			6.8		
Stiffness values [N/mm²]							
Stresses on board							
Bending modulus of elasticity	E_{mean} [a]	4930			1980		
Shear modulus	G_{mean} [a]	50			50		
Plate loading							
Bending modulus of elasticity	E_{mean} [a]	3800			3000		
Shear modulus	G_{mean} [a]	1080			1080		
[a] The characteristic stiffness values E_{05} and G_{05} are calculated as follows: $E_{05} = 0.85 \times E_{mean}$ and $G_{05} = 0.85 \times E_{mean}$							
General and building physics values							
Bulk density acc. to EN 323	m	600 kg/m³					
Max. deviations in board thickness		± 0.8 mm (ContiFinish®) ± 0.3 mm (sanded)					
Internal bond acc. to EN 319	σ_{Zy}	0.18	0.15	0.13	0.18	0.15	0.13
Thermal conductivity acc. to EN 13986	λ	0.13 W/mK					
Water vapour permeability value	μ	200 (moist) / 300 (dry)					
Waste code		03 01 05					
Thickness swelling acc. to EN 317		≤ 15 %					
Coefficient of expansion for 1% change in wood moisture content		0.03 %					
Emissions class		E1 100 % formaldehyde-free binders (< 0.03 ppm)					
Environmental Product Declaration as per ISO 14025 an EN 15084		EPD-KRO-20150067-IBD1					
Service classes acc. to EN 1995-1-1		1 + 2					
Reaction to fire acc. to EN 13501-1		D-s2, d0					
Declaration of Performance No. acc. to CPR		KDE_OSB-3 CPR_2016_039					

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