

Wood at its best



GERMANY

EN

OSB INSTALLATION MANUAL

Natural Stability





Practical Tip

The holding strength of SWISS KRONO OSB has been demonstrated. According to test report no. U 2435/2006 [Kr] of the Fraunhofer Institute for Wood Research (WKI) in Braunschweig, Germany, "in terms of its ability to hold the fasteners typically used for metal roofing and slate, the tested OSB may be regarded as equivalent to solid wood."

Photograph courtesy of Ansbach SUITES in Ansbach, Germany

No Chemicals – Fast to Install Applications

Stabilises and Strengthens

SWISS KRONO OSB/3, T+G excels in a vast range of applications with its reinforcing properties and very high flexural strength. Despite its relatively low weight, it achieves flexural strength similar to that of plywood.

For Renovation, Refurbishment and New Eco-Friendly Houses

Thanks to its good technical properties and seamless surface, SWISS KRONO OSB/3, T+G is excellently suited for renovating and refurbishing existing buildings and constructing new, eco-friendly houses. The precisely fitting tongue-and-groove system permits fast, easy installation directly on binders and joists or on top of insulation for reducing transmitted impact sound.

Environmentally Friendly

SWISS KRONO OSB/3 and SWISS KRONO OSB/4 have been used with outstanding results in countless flat roof constructions. In contrast to other engineered wood materials used in flat roofs, no chemical treatments are required with SWISS KRONO OSB/3 or SWISS KRONO OSB/4.

Fast Installation

Another advantage is how much faster SWISS KRONO OSB is to lay than solid-wood boarding.

Applications

SWISS KRONO OSB is an engineered wood material that lends itself for a vast range of applications. It is most often used in timber construction and for interior finishing.



Floors

SWISS KRONO OSB boards perform loadbearing and reinforcing functions in ceilings. Their high strength allows them to be relatively thin, which saves costs. SWISS KRONO OSB also provides optimal acoustic insulation and fire resistance.



Walls

In wall constructions in timber-frame and timber-panel buildings, SWISS KRONO OSB excels in its function as a reinforcing, water-vapour-impermeable, airtight layer. Storey-high formats and thicknesses starting at 6mm allow efficient use with a minimum of cutting and trimming.



CodeMark >>>
(CM70077)



Das Zeichen für verantwortungsvolle Waldbewirtschaftung





A project of MAX-HAUS based in Marienwerder, Germany

Attachment

Which Fasteners for Which Materials?

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

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

Attachment Guide for Different Materials and Thicknesses

Method	Beam/joist material	Fasteners	Thicknesses OSB/3, T+G	Minimum fastener size
Manual nailing	Hardwood, coniferous wood	Ball or flat head nails	18mm, 22mm	50mm x 2.8mm
Manual nailing	Hardwood, coniferous wood	Ball or flat head nails	25mm	65mm x 3.75mm
Manual nailing	Softwood	Ball or flat head nails	18mm, 22mm	65mm x 2.8mm
Manual nailing	Softwood	Ball or flat head nails	25mm	75mm x 3.75mm
Power nailing	Hardwood, coniferous wood	D-head, round head or finish nails	18mm, 22mm	50mm x 2.5mm
Power nailing	Hardwood, coniferous wood	D-head, round head or finish nails	25mm	65mm x 2.5mm
Power nailing	Softwood	D-head, round head or finish nails	18mm, 22mm	65mm x 2.5mm
Power nailing	Softwood	D-head, round head or finish nails	25mm	75mm x 2.5mm
Power nailing	Steel	Hardened twisted steel nails, conical point nails	18mm, 22mm	32mm x 2.5mm
Power nailing	Steel	Hardened twisted steel nails, conical point nails	25mm	40mm x 2.6mm
Pneumatic nailing	All wood types	T-head or finish nails	18mm, 22mm	50mm x 2.5mm
Pneumatic nailing	All wood types	T-head or finish nails	25mm	75mm x 3.15mm
Screws	All wood types	Type 17 countersunk, self-drilling wood screws	18mm, 22mm	10g x 50mm
Screws	All wood types	Type 17 countersunk, self-drilling wood screws	25mm	14g x 65mm
Screws	Steel	Countersunk self-embedding head or self-drilling head screws, preferably with self-breaking cutter nibs	18mm, 22mm	9g x 45mm or 10g x 45mm



Photograph courtesy of Ansbach SUITES in Ansbach, Germany

General Information on Use



Transport and Handling

- Take steps to prevent boards, and especially unprotected edges, from absorbing large amounts of moisture during transport and installation.
- Protect corners and edges before lifting, moving or stacking (especially with T+G boards).
- Check 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-edged or tongue-and-groove).
- Whilst installation work is ongoing, 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 those prevailing at the installation site.
- This adjustment to the ambient moisture at the installation site will prevent excessive shrinkage or swelling.



Sawing, Milling, Sanding and Drilling

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



Storage

- Protect boards from exposure to significant moisture or very high relative humidity.
- Prevent boards from directly contacting the ground.
- Only store outdoors temporarily, and if unavoidable cover stacks with watertight but water-vapour-permeable tarpaulins.
- Always stack boards horizontally on pallets and wooden sleepers (spaced up to 600mm apart).
- Align sleepers precisely with one another and parallel to the shorter side of the boards.
- Lay boards so their edges line up (with a maximum overhang of 15mm).



Laying and Boarding

- For interior or exterior boarding applications, leave expansion gaps at least 3mm wide between boards.
- When laying closely on interior walls with butt joints, leave room for expansion where boards adjoin other structures.
- When used as flooring, the panel's in-service moisture content must not exceed 20%. If the board has become wet then it is the responsibility of the installer to ensure that the board dry out to 20% moisture content before covering
- During moderate weather conditions three months exposure is possible. Panel edges should be sealed or taped.

SWISS KRONO

OSB

MADE IN GERMANY



Nailing, Stapling, Screwing and Gluing

- SWISS KRONO OSB can be attached to wooden studs and rafters using screws, nails or staples.
- Use in accordance with official approvals (Z-9.1-618 and Z-9.1-503 in Germany) and/or standards (DIN 1052 or EN 1995-1-1 (EC 5)).
- Additionally bond or glue tongue-and-groove joints.



Coating and Painting

- SWISS KRONO OSB with a ContiFinish® face may be coated with a solvent-containing PU (DD) or synthetic-resin varnish.
- Sanded surfaces may be coated like normal wood (e.g. with varnishes, paints, oils, waxes and glazes).
- It is advisable to apply at least three coats, sanding after the first one.
- Application of at least three coats is recommended.
- The only way to achieve an absolutely smooth surface is to apply filler.

Important Note on Coating and Painting!

When coating SWISS KRONO OSB with oil or hard wax oil, ingredients in the oil may interact with natural wood resins in the SWISS KRONO OSB. This can result in an intense odour that persists for quite a while. We therefore recommend that you consult the manufacturer of the oil or hard wax oil before using it.

Built by Holzhäuser & Zimmerei Richardsen GmbH based in Langenhorn, Germany





Applications

- Timber frame construction
- Industrial and commercial construction
- Shops and exhibit stands (decorative uses)
- Trade fair stands, formwork, prefabricated housing
- Loadbearing ceiling boards
- Floor structures
- Reinforcing wall boards
- Roof decking (instead of raw timber)
- Stiffening roof surfaces
- Packaging



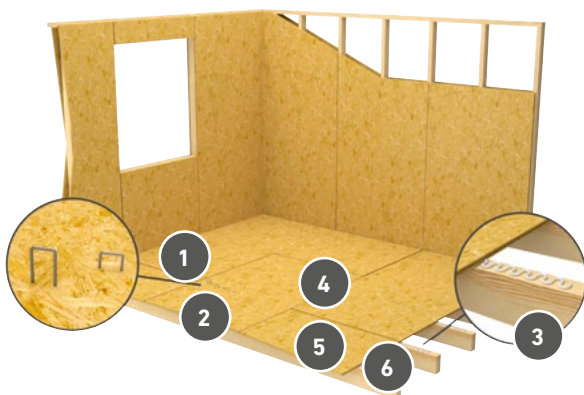
Photograph courtesy of Ansbach SUITES in Ansbach, Germany

Laying Instructions for Floors

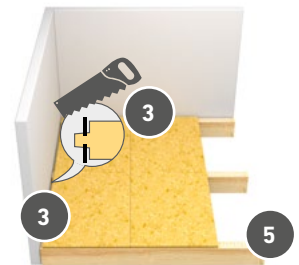
- When using boards outdoors, cover them immediately after installation to protect them from the weather.
- Leave expansion gaps where boards adjoin other structures.
- Surfaces longer or wider than 10 metres should have at least one expansion joint in the middle.
- When installing on beams or rafters, 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 OSB/3 boards to the floor.
- Observe the applicable standards and regulations.
- Before laying the board on the joists take 5mm adhesive bed on the joist. Use wood or PU glue.

Installation Scheme

- | | |
|--|---|
| 1 10mm expansion gap | 4 3mm expansion gap |
| 2 Max. distance between fasteners (such as screws and nails): 15cm | 5 Connection on beams |
| 3 5mm adhesive bed | 6 Small side of the gap must rest on the beam |

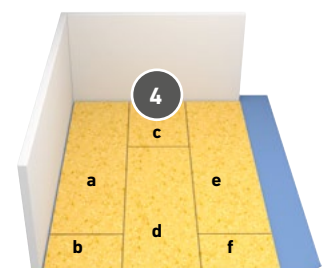
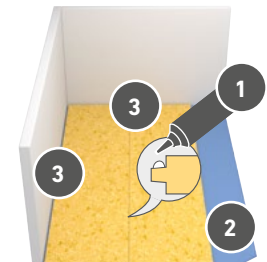


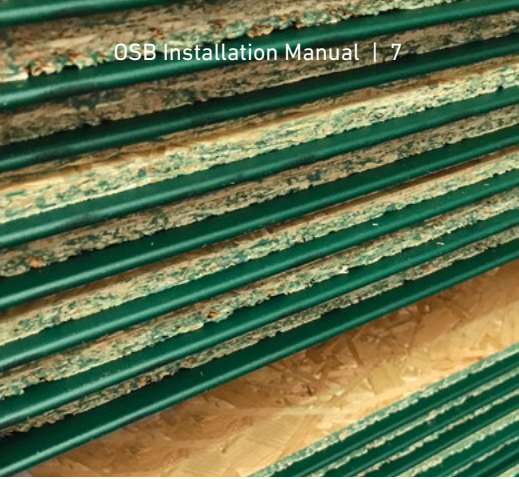
Installation on beams



Installation on floor or screed

- 1 Wood or PU glue
- 2 Vapour barrier
- 3 10mm distance to wall
- 4 First panel at least 400mm
- 5 5mm adhesive bed





Facts That Matter

- Proven performance
 - Tried and tested building material
 - Strong and reliable
 - Contractor familiarity
 - Efficient on-site construction
- Easy to install
 - Easily installed in new or existing homes
 - Provides an ideal working platform during construction
- Provides design flexibility
 - Can easily accommodate future alterations or additions
- Ideal for sloping sites
 - Less disruption
 - Reduced site preparation costs compared to having to create a level area for a concrete slab – cut and fill earthwork and soil-retaining structures
- Suspended (ground) floors keep you high and dry
 - Being off the ground, suspended flooring systems are less affected by water seepage
- Underfloor space
 - Ideal storage area and ideal spot for hiding unsightly water storage tanks
 - Timber subfloors provide access to the underfloor – for easier inspection, maintenance and modification.

Delivery Programme and Product Overview

SWISS KRONO OSB/3

3600 x 900 x 18mm untreated Green Edge

SWISS KRONO OSB/3 anti-termite (H2)

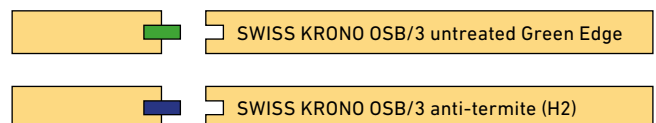
3600 x 900 x 18mm H2 Treated Blue Edge

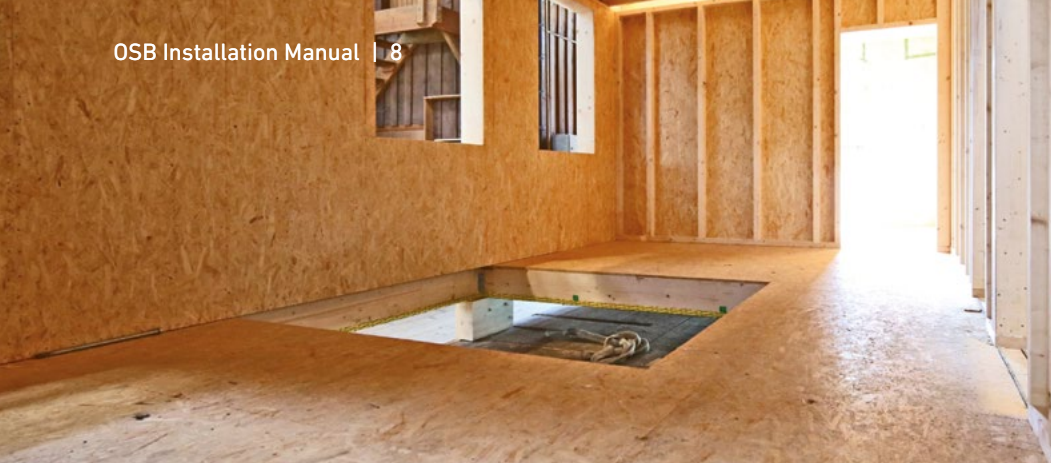
SWISS KRONO OSB/3

3600 x 900 x 22mm Untreated Green Edge

SWISS KRONO OSB/3 anti-termite (H2)

3600 x 900 x 22mm H2 Treated Blue Edge





A project of MAX-HAUS based in Marienwerder, Germany

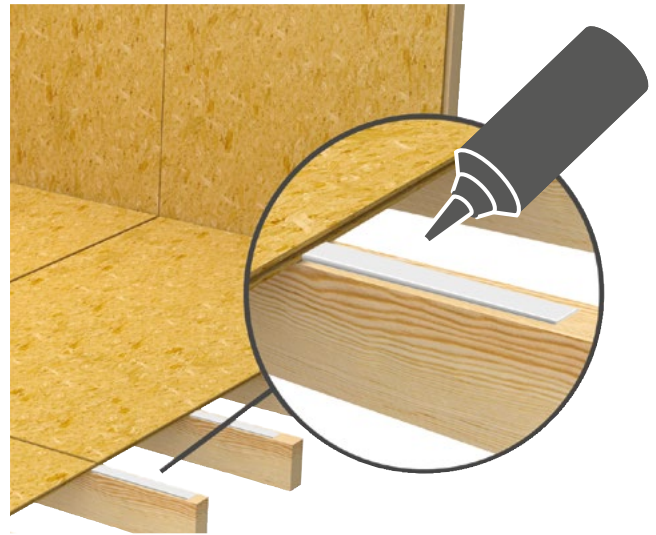
Adhesives

For Requirement & Application

- Elastic adhesive specifically formulated for SWISS KRONO OSB flooring must be additionally used with nails and screws. Apply as follows:
- Load the cartridge into caulking gun or foam canister into dispensing tool. With cartridge systems, cut the nozzle to allow a 5mm bead diameter, and with foam systems regulate the flow to achieve the required adhesive bead diameter.
- Clean any dirt, grease or water off surfaces to be bonded.
- Apply a continuous, 5mm diameter bead of adhesive to each joist to be covered by flooring. Apply two beads to joists where sheets butt together.
- Adhesive fixing ensures a stiffer floor. An extra bead applied along the tongue before sheets are pressed together will help to achieve a squeak-free floor system. Any excess glue should be cleaned off.
- Position sheets within approximately ten minutes of applying the adhesive. Do not allow the adhesive to skin over before applying sheets.
- Nail or screw flooring sheets within 15 minutes after positioning them.
- Remove excess adhesive from the sheet surface before it dries. Use a scraper and rag dampened with mineral turpentine (or another appropriate solvent).
- To seal cut sheet edges, apply a bead of adhesive. Butt the edge firmly up to the adjoining sheet and remove excess adhesive. Alternatively, the adhesive may be spread over the cut edge with a spatula.
- It is mandatory to additionally use elastic adhesive with nails and screws.

Notes (Acc. to AS 1860.2 on installation of particleboard flooring):

1. Adhesive applied along the tongue helps to keep tongues tight in their grooves and minimises squeaking in installed floors.
2. Panels should be factory-sealed against water penetration. When panels are not factory-sealed, and when panels are cut to size on site, the edges should be sealed with the adhesive used to bond the panels to the joists.



3. It is not recommended to lay foil-type insulation between joists and flooring, as it may impede proper gluing of the flooring to the joists as set out in AS 1860.2 – consult your supplier to determine whether subfloor insulation products are suitable.



Detailed Information on Floors

Laying Floor Coverings on SWISS KRONO OSB

For floating floors, eg with KRONOTEX laminate flooring, the surface of the OSB boards doesn't have to meet any special requirements, as there is no connection between the two.

When gluing the flooring to SWISS KRONO OSB, follow these instructions:

- Apply PUR adhesive or wood glue to tongue-and-groove joints in the SWISS KRONO OSB. This will prevent cracking around the joints.
- Leave a gap of about 10mm between the boards and all walls.
- Wait at least three days after laying the SWISS KRONO OSB boards before applying the floor covering, so that the boards can acclimatise to conditions in the room.
- In large rooms, make sure to include expansion joints and gaps (see page 10).
- You can then glue the flooring in place.
- SWISS KRONO OSB is excellently suited for use as a substrate for hardwood flooring. Requirement: the surface must be sanded. Even better: use the SWISS KRONO OSB version that comes with a presanded surface.
- Especially for hardwood floors, the SWISS KRONO OSB should be thicker than the flooring in order to provide a stable base and prevent deformation. Hardwood swells and shrinks more than SWISS KRONO OSB. Also make sure to following the instructions of the hardwood floor supplier.
- We recommend using a permanently elastic adhesive that lets the substrate and flooring shift slightly relative to one another.
- Whenever possible, have a professional glue hardwood flooring to SWISS KRONO OSB.
- Other floor coverings, such as linoleum, vinyl, PVC, carpet and cork flooring, are also suitable for gluing to SWISS KRONO OSB. The use of sanded SWISS KRONO OSB boards is recommended. Sanded boards have a smoother surface, which improves adhesion.

For use of over 18mm OSB with 450mm spacing following floor coverings are suitable:

- 6mm -14mm Laminate flooring
- > 5mm Rigid / Hybrid Vinyl Plank
- Engineered parquet, floating or adhered
- Glued and / or nailed Hardwood
- Ceramic Tiles on Cement sheet underlay (taking into account the dimensioning table)
- Carpet on foam or rubber Underlay

Floor finishes „**Not**“ recommended for use over 18mm OSB on 450mm joist centres are:

- Direct adhered Ceramic Tiles
- Sheet Vinyl
- < 4mm Loose Lay Plank Vinyl (LVT)

Direct adhered Ceramic Tiles, Sheet Vinyl or LVT is only recommended either reducing the joist spacing to < 450mm or using 22mm thick SWISS KRONO OSB at < 600mm.



A project of Noah Haus based in Heede, Germany

Did You Know?

SWISS KRONO OSB/3 and SWISS KRONO OSB/4 have been issued environmental product declarations (EPDs) under DIN EN ISO 14025 and EN 15084 by Germany's Institute for Construction and Environment (IBU). An EPD evaluates a product's entire lifecycle according to international standards to establish its suitability for sustainable construction.



A project of MAX-HAUS based in Marienwerder, Germany

Detailed Information on Floors

Expansion Gaps and Joints for SWISS KRONO OSB

SWISS KRONO OSB is often used to make large floors. The product can remain visible or be covered by another material. But 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 base moulding.
- Cover joints in the middle with special expansion units.
- When attaching strips or covers, do not screw them to the SWISS KRONO OSB boards, as this would defeat the purpose of a floating floor.

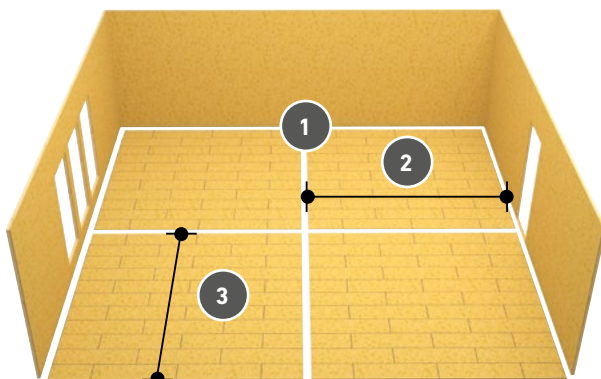
Dimensioning Tables for Downloading:



18mm SWISS KRONO OSB may be used as subflooring on floor joists spaced up to 450mm (22mm to 600mm) apart, provided that the imposed load does not exceed 3.0 kN/m² (uniformly distributed) and 2.0 kN (concentrated).

Do not install boards with the long side perpendicular to the floor joists, and glue tongue-and-groove joints with a suitable adhesive for subfloor installations.

Stagger end joints and make sure that they are continuously supported by joists. SWISS KRONO OSB/3 may be used in platform constructions where the boards are briefly exposed to precipitation.



- 1 15mm expansion gap
- 2 Max. width of 10m
- 3 Max. length of 10m



Decorative Use

Coating of SWISS KRONO OSB – Floors etc.

Because of their decorative surfaces, SWISS KRONO 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 SWISS KRONO OSB or unsanded SWISS KRONO 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 causes the surface to become rough.

When using a water-based coating system, the strands on the surface can swell slightly. It can therefore be necessary to sand it and then apply another coat.

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.

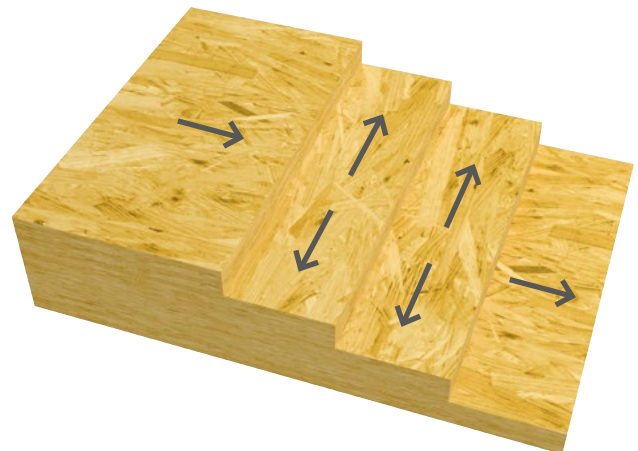
SWISS KRONO OSB is a natural product. The colour of the boards can therefore vary depending on the time of year and the source of the wood.

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 technical properties. For large surfaces, it is advisable to mix up the boards to create an irregular pattern.

Coating of SWISS KRONO OSB – Floor Coverings

Please go to “Laying Floor Coverings on SWISS KRONO OSB” on page 12 of this brochure.

The layers of SWISS KRONO OSB (oriented middle and surface layers)



SWISS KRONO OSB/3 Bracing Instructions

- Oriented strand board (OSB) is the most frequently used structural board for timber framed buildings around the globe, including the USA and Europe.
- Available as both untreated and H2-treated boards.
- Lightweight and extremely strong; it has replaced plywood and particleboard in most applications.
- OSB/3 is made of 100% fresh pinewood thinnings from PEFC®/FSC® certified sustainable forests.
- The strands are glued together with formaldehyde-free binders: OSB/3 can therefore also be used for food packaging applications.
- OSB/3 has excellent resistance to water and moisture, thus making it especially suited for exterior bracing in construction applications – especially in areas where moisture is a concern.
- OSB/3 is CE-certified under EN 13986 and produced in accordance with EN 300.
- OSB/3 can be used with standard woodworking tools.
- May be purchased with PEFC® or FSC® certification on request.

SWISS KRONO OSB/3 Installation Information

SWISS KRONO OSB/3 must be installed in compliance with the Australian construction and building standards. In particular, the design methodology and criteria for applications using structural bracing panels are based on the following documents:

- AS1684 – 2010 SAA National Timber Framing Code (incl. Amendment 2 – 2013)
- AS1720.3 – 2016 SAA Timber Structures: Design criteria for timber-framed residential buildings
- AS1720.1 – 2010 (including Amendments 1, 2 & 3 – 2015) SAA Timber Structures: Design Methods
- EN 13986:2004 Service Class 2 – SWISS KRONO OSB/3 complies with this Australian service class 2 requirement when installed in the cavities of buildings with a brick veneer or used on external walls before the cladding is applied to the exterior.

Moisture Levels and SWISS KRONO OSB/3

- Prolonged contact with water, moisture and excessive condensation must be avoided.
- SWISS KRONO OSB/3 has been tested and approved for use in humid environments where the moisture content does not exceed 20%.
- SWISS KRONO OSB/3 takes at least 48 hours to acclimatise to the ambient moisture at the installation site. Minor dimensional changes may occur, both vertically and horizontally. Please follow the instructions below to accommodate these changes.

This table deals with installing OSB/3 in conditions with different ambient moisture:

Rel. air humidity	Approx. ambient moisture Notes on use	Approx. ambient moisture
30-65% (dry conditions)	4%-11%	Minimal risk of SWISS KRONO OSB/3 boards getting wet
65-85% (wet conditions)	11%-17%	There is a risk that SWISS KRONO OSB/3 boards will get wet, either during installation or during use.



A project of MAX-HAUS based in Marienwerder, Germany

SWISS KRONO OSB/3 Bracing

Working with SWISS KRONO OSB/3

Whenever working with and handling SWISS KRONO OSB/3 boards, keep in mind that safety comes first.

Use personal protective equipment and work in a safe, flat, open area that is well-ventilated and well-lit.

- Wear a protective face mask, gloves, eye protection, ear protection and steel-toe boots.
- Holes can be made in SWISS KRONO OSB/3 board without compromising its structural integrity. However, follow these rules:

Multiple holes measuring up to 100mm wide x 100mm high may be made in the surface of the board, provided that:

 - None is closer than 100mm to the top and side edges.
 - None is closer than 200mm to the bottom of the bracing board.
 - Their centres are spaced at least 600mm apart.
- Like other board and panel products, SWISS KRONO OSB/3 can be cut and shaped using standard hand and power tools. However, practise first using a slightly lower feed rate than for plywood and MDF.
 - Sharpen hand tools before use to ensure clean, neat cuts.
 - With power tools, use diamond- or carbide-tipped blades to ensure clean, precise cuts.
- Do not install OSB/3 boards close together, as they may shift while acclimatising. Leave a gap at least 2mm wide on all sides and edges.

- Before using SWISS KRONO OSB/3 boards in an area with high wind speeds (cyclonic area), consult an appropriately qualified engineer to determine whether they exceed the limits of Australian Standard 1684-1999 (in order to comply with Australian Standards 4055-1992 and/or 1170.2-1989).

Attachment Systems: Nails, Screws and Staples

Various fastener systems are recommended for use with OSB/3, including:

- Hand-driven flathead nails with a diameter of 2.8mm and length of 30mm, either hot-dip galvanised or of a noncorrosive material such as stainless steel.
- Nail gun-driven flathead nails with a diameter of 2.8mm and length of 30mm, either hot-dip galvanised or of stainless steel in compliance with Australian Standard 1684-1999.
- When fastening to top and bottom wall plates or edge studs, space nails at least 15mm apart. When attaching SWISS KRONO OSB/3 boards to interior framing timbers, they should be at least 8mm apart.

Stapling of SWISS KRONO OSB/3 Boards

The holding strength of staples is less than that of screws and nails, so more of them are needed to securely hold SWISS KRONO OSB/3 boards in place. To calculate how many staples are needed, multiply the number of screws or nails that would be needed by a factor of 0.66.



Applications

Multifunctional SWISS KRONO OSB/3 delivers persuasive results in a long list of applications, including timber construction and interior finishing. It's also the ideal solution for cost-effective constructions that must comply with energy-efficiency or passive-house standards or regulations.

A project of MAX-HAUS based in Marienwerder, Germany

Recommended Fasteners for SWISS KRONO OSB/3

Gun-Driven Nails

Senco: TN22-38 APB.
Flathead nails 2.33mm in dia. and 38mm long

Bostich: AC45P-250-GW
Flathead nails 2.5mm in dia. and 38mm long

Duo-Fast: C27.32GDTN22-38 APB
Galvanised nails 2.7mm in dia. and 32mm long

Jambro: B20998
Zinc-plated bars 2.8mm in dia. and 32mm long

Gun-Driven Staples

Senco: N167 BAB
Wire dia. 1.53mm
Crown width: 10.5mm

Bostich: BCS4-1232
Wire dia. 1.53mm
Crown width: 10.5mm

Hand-Driven Nails

Hot-dipped galvanised or stainless steel
Stainless steel
Flathead clouts or connector nails
2.8mm in dia. x 30mm long

Important notes on the fasteners listed above:

- Other makes of screws, nails and staples may also be used, but make sure that they have the same dimensions as indicated above.
- All fasteners used with SWISS KRONO OSB/3 boards must be made of hot-dip galvanised or another noncorroding metal such as stainless steel.
- If hand-driven nails with a smaller diameter are used, space them closer together.
- Check the lateral loads on the board being attached in conjunction with Table 4.1 of Australian Standard 1720.1 to make sure that the nail diameter is sufficiently large.

Bottom Plates Installed on SWISS KRONO OSB/3

The installation of bottom plates is subject to Australian Standard 1684-1999 and the design constraints of Australian Standard 1720.1-1997.

- The bracing resistance is dependent on the tie-down capacity of SWISS KRONO OSB/3 boards.
- In applications calling for considerable bracing resistance to prevent uplift, site-appropriate cyclone rods or other measures may be needed.

Using Brick ties with SWISS KRONO OSB/3

Face-fixed brick ties are required by Australian Standard 2699 when installing SWISS KRONO OSB/3 boards inside the cavity of a brick veneer wall. The brick ties must be secured through the boards to the outer face of the framing wall stud.



SWISS KRONO OSB/3 Bracing

Timber Framing with OSB/3

The detailed racking resistance information provided here applies to timber with a nail pullout resistance corresponding to joint strength group JD5 and a max. centre-to-centre stud spacing of 600mm.

No reduction factors are advised for fixing to JD5 materials. Other panel and board materials call for a reduction factor, like plywood (12.5%) and hardboard (16%), but not SWISS KRONO OSB/3.

OSB/3 Uplift Resistance Capacity

The table below stipulates the permitted uplift resistance capacity of SWISS KRONO OSB/3 board when used in enclosed wall systems.

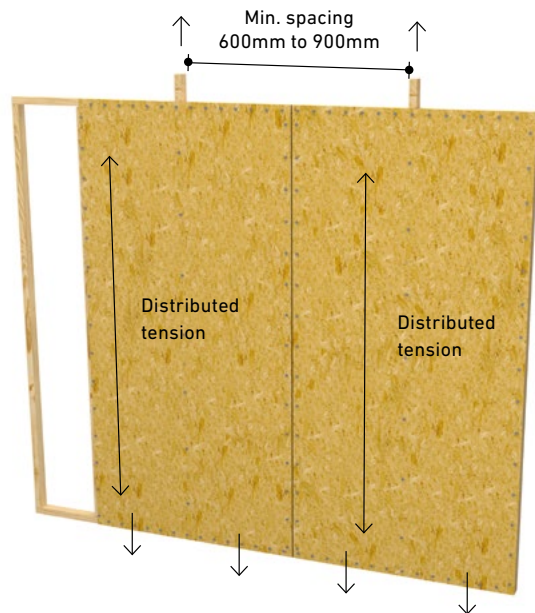
Note: Minimum rafter/truss spacing of 900mm.

Permitted uplift resistance (kN per rafter)	Fastener spacing: top and bottom plates
7.5	80mm
8.5	40mm

The rafter/truss top plate connection is responsible for the distribution of the wind uplift load across the SWISS KRONO OSB/3 board. This uplift load is transferred to the bottom plates and then, distributed across the SWISS KRONO OSB/3 board. This back-and-forth tension distribution continues between the plates until the wind pressure subsides.

The SWISS KRONO OSB/3 board exerts holding tension between the top and bottom plates. This is shown in the figure below – note the tension spread across the SWISS KRONO OSB/3 board.

Top plate to rafter or truss connection as per Australian Standard 1684



Bottom plate to floor or sub floor connection as per Australian Standard 1684

Using SWISS KRONO OSB/3 on Both Sides of a Wall

This installation guide applies to the use of SWISS KRONO OSB/3 board on one side of a wall, with an acceptable racking resistance of 3.4kN/m for short wall bracing. SWISS KRONO OSB/3 board is more than suitable for use as structural bracing on both sides of a wall, provided that the hold-down strength of the bottom plate is doubled.

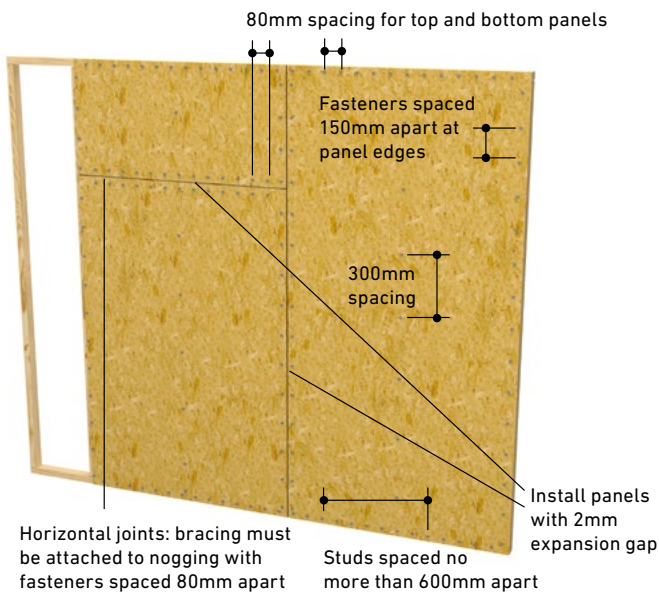
Note: Make sure that the larger bottom plate is secure before attaching sheets of SWISS KRONO OSB/3 to the wall framing.



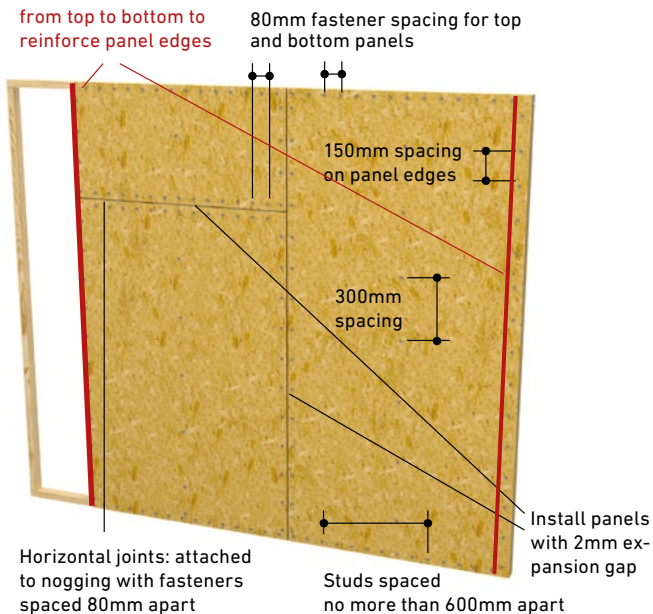
A project of Holzhäuser & Zimmerei Richardsen GmbH based in Langenhorn, Germany

SWISS KRONO OSB/3 Wall Design Guide

Information on four common wall designs is provided below.



M12 steel rods
from top to bottom to
reinforce panel edges



Wall Design (A): 3.4 kN/m

- Minimum bracing size: 900mm
- Avoid butt joints between SWISS KRONO OSB/3 boards:
 - Leave at least a 2mm gap on all sides and edges to allow for expansion.
- For panels 600mm long, the structural bracing capacity is half the strength of 900mm-long panels.
- Minimum joint strength of framing: JD5
- No noggings needed for full-height panels unless used for internal wall bracing.
- Sheets between 600mm and 900mm long. The structural bracing strength can be calculated by multiplying the corresponding capacities:
 - 0.5 for 600mm long, varying linearly to 1.0 for 900mm long
- **Attachment information:**
 - Top and bottom panels with 80mm fastener spacing
 - 150mm spacing on vertical edges
 - 300mm spacing on studs between boards

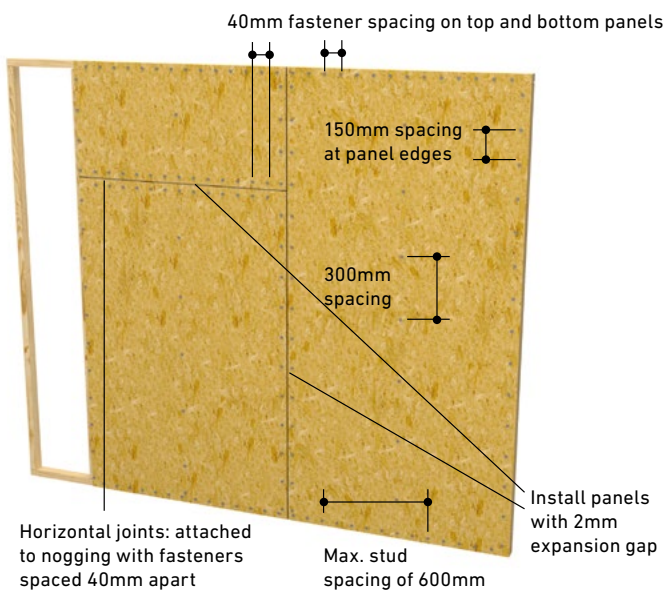
Wall Design (B): 5.6 kN/m

- Minimum bracing size: 900mm
- Avoid butt joints between SWISS KRONO OSB/3 boards:
 - Leave at least a 2mm gap on all sides and edges to allow for expansion.
- Minimum joint strength of framing: JD5
- No noggings needed for full-height panels unless used for internal wall bracing.
- Attachment information:
 - 80mm spacing on top and bottom panels
 - 150mm spacing on vertical edges
 - 300mm spacing on studs between boards
 - Vertical M12 metal rods at panel ends



A project of Counter Entropy House, RWTH based in Aachen, Germany (Solar Decathlon 2012)

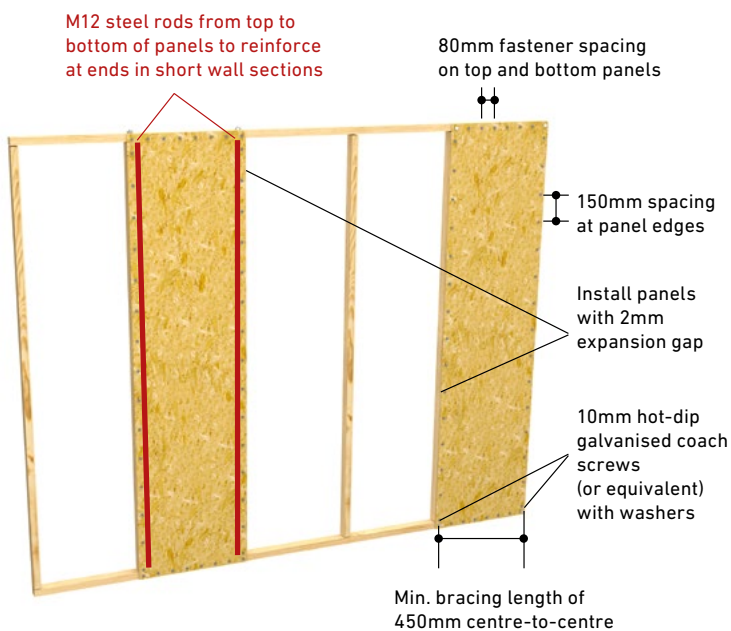
SWISS KRONO OSB/3 Wall Design Guide



Wall Design (C): 6.0 kN/m

- Minimum bracing size: 900mm
- Avoid butt joints between SWISS KRONO OSB/3 boards:
 - Leave at least a 2mm gap on all sides and edges to allow for expansion.
- Minimum joint strength of framing: JD5
- No noggings needed for full-height panels unless used for internal wall bracing.
- **Attachment information:**
 - 40mm spacing on top and bottom panels
 - 150mm spacing on vertical edges
 - 300mm spacing on studs between boards

Wall Design (D): 2.2 kN/m Short wall bracing applications



- Minimum bracing size: 450mm
- Avoid butt joints between SWISS KRONO OSB/3 boards:
 - Leave at least a 2mm gap on all sides and edges to allow for expansion.
- Minimum joint strength of framing: JD5
- No noggings needed for full-height panels unless used for internal wall bracing.
- **Attachment information:**
 - 80mm spacing on top and bottom panels
 - 150mm spacing at vertical edges
 - 10mm × 70mm long hot-dip galvanised (or equivalent) coach screws in all corners of short wall sections
 - Use coach screws with square washers (50x5mm) 3mm thick
 - When using vertical M12 metal rods at panel ends instead of coach screws, the bracing resistance can be increased to 3.2 kN/m.

SWISS KRONO OSB/3 for Interior Bracing and Lining

SWISS KRONO OSB/3 is the result of intensive R&D that has included testing its performance when used together with plasterboard, a combination that has yielded excellent results worldwide for many years.

For best results when using SWISS KRONO OSB/3 boards with plasterboard:

- Leave a gap of at least 2mm on all sides and edges of OSB/3 boards to allow for expansion.
- SWISS KRONO OSB/3 boards need at least 48 hours to acclimatise to the ambient moisture at the installation site. During this period, you can expect minor dimensional shifts in both axes.

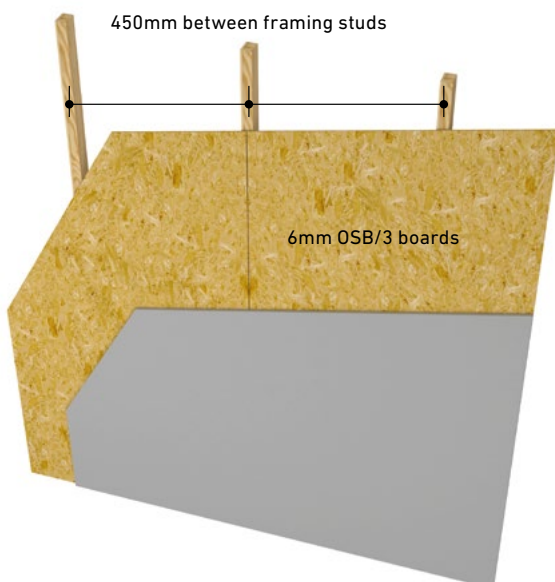
Dimensional changes in OSB/3 board size (mm)

Increase in moisture content	OSB/3 board width of 900mm	OSB/3 board width of 1200mm
+ 3%	0.81mm	1.08mm
+ 5%	1.35mm	1.80mm
+ 6%	1.62mm	2.16mm

Using OSB/3 with Plasterboard

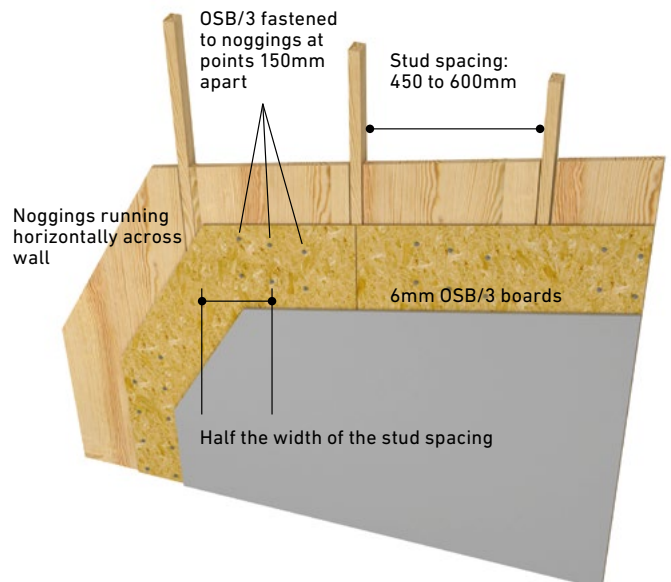
Picture 1:

- Maximum distance between framing studs: 450mm



Picture 2:

- Span between framing studs: 450mm to 600mm.
- Horizontal noggings must be distributed over the height of the wall.
 - Wall height of 2440mm: use 2 noggings
 - Wall height of 2745mm: use 2 noggings
 - Wall height of 3050mm: use 3 noggings



OSB/3 for Internal Bracing and Lining

SWISS KRONO OSB/3 as Lining

SWISS KRONO OSB/3 boards are specifically manufactured and intended for use as bracing, but can also be used as lining if appropriately attached and supported by battens. The fasteners that may be used include:

- Hand-driven flathead nails 2.8mm in diameter × 30mm long, hot-dip galvanised or of another noncorroding material such as stainless steel
- Gun-driven flathead nails 2.8mm in diameter × 30mm long, hot-dip galvanised or of another noncorroding material such as stainless steel in accordance with Australian Standard 1684-1999

As a rule of thumb, a panel at least 12mm thick is usually used as lining board as this results in a flatter surface.

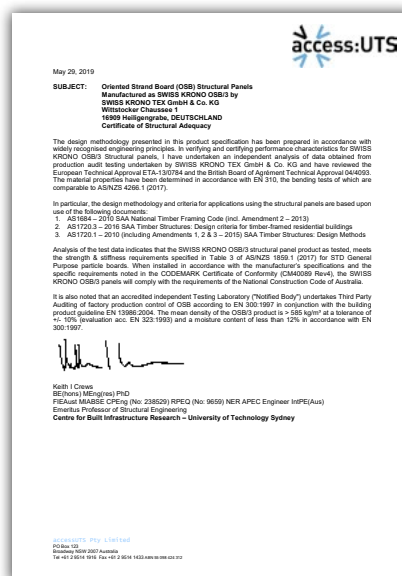
But with a sufficient number of fixing points, SWISS KRONO OSB/3 boards also deliver good results.

Storing OSB/3 Boards

It is important to correctly store SWISS KRONO OSB/3 boards to prevent damage and ensure a long life after installation.

- Store panels by laying them horizontally on square supports that are all the same height and measure at least 90mm on each side, spaced no more than 800mm apart.
- Remove any metal or plastic straps from packs of SWISS KRONO OSB/3 to facilitate their acclimatisation to conditions at the installation site.
- Stack multiple packs separated by vertically aligned supports. Never place boards directly on the ground without supports. It is not advisable to stack more than three packs on top of one another.

- SWISS KRONO OSB/3 should be stored in a flat, well-ventilated area sheltered from direct sunlight.
- Keep in mind that SWISS KRONO OSB/3 boards need at least 48 hours to acclimatise to the ambient moisture at the installation site. This is especially important when using OSB/3 boards in interiors together with plasterboard. Minor dimensional changes are to be expected.
- When storing SWISS KRONO OSB/3 outdoors, it is advisable to completely cover the panels, especially if rain is expected. This will also protect them from winter morning and night dew.



Access UTS certificate confirming that SWISS KRONO OSB/3 conforms to Australian Standards

Termite Risk Management

Resistance to Termites

Termites (also known as white ants), feed on any cellulose-containing material, such as timber. In termite-prone areas (check with your local authority), physical barriers such as ant caps or chemical treatments should be applied in accordance with AS 3660.1.

SWISS KRONO OSB/3 anti-termite (H2) is resistant to both subterranean termites (including *Mastoterms darwiniensis*) and timber beetles.

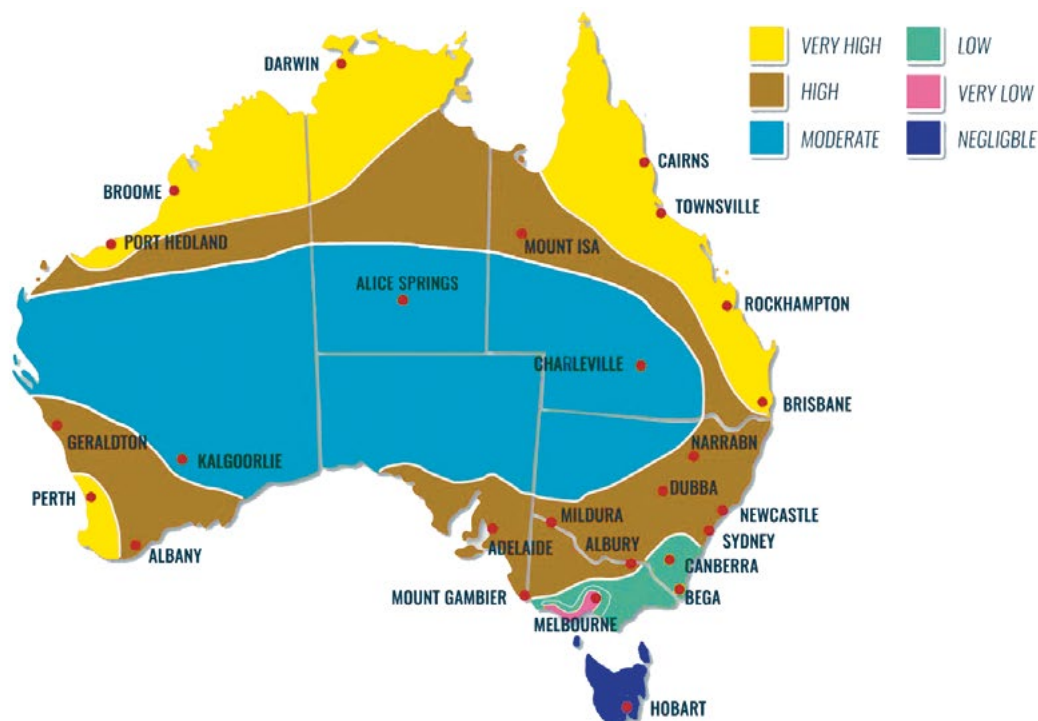
SWISS KRONO OSB/3 anti-termite (H2) flooring meets the requirements for H2 hazard level treatment according AS 1604.2. Timber and engineered wood products treated to H2 or better qualify as termite-resistant building materials under the Building Code of Australia and AS 3660.1.

State or local legislation may permit the use of termite-resistant structural timber or wood components to fully or partially meet the termite protection requirements of the Building Code. However, building owners are urged to have them regularly checked by a licensed pest controller or building inspector in accordance with AS 3660.2.

SWISS KRONO OSB/3 anti-termite (H2) flooring is treated with a synthetic pyrethroid to provide protection from the most common species of subterranean termites that occur in Australia, including *Coptotermes*, *Schedorrhinotermes*, *Nasutitermes* and *Mastoterms darwiniensis*. It is therefore suitable for use both south and north of the Tropic of Capricorn.

SWISS KRONO OSB/3 anti-termite (H2) flooring contains a AS 1604.2-compliant wood preservative that has been approved by the Australian Pesticides and Veterinary Medicines Authority, Forest NSW and the Queensland Department of Primary Industries. It also meets the requirements of the 1977 Timber Marketing Act (NSW) (if applicable) and the 1987 Timber Utilisation and Marketing Act (Qld) (if applicable) and complies with AS 3660.1.

SWISS KRONO OSB/3 anti-termite (H2) flooring is regularly tested by an accredited independent laboratory.



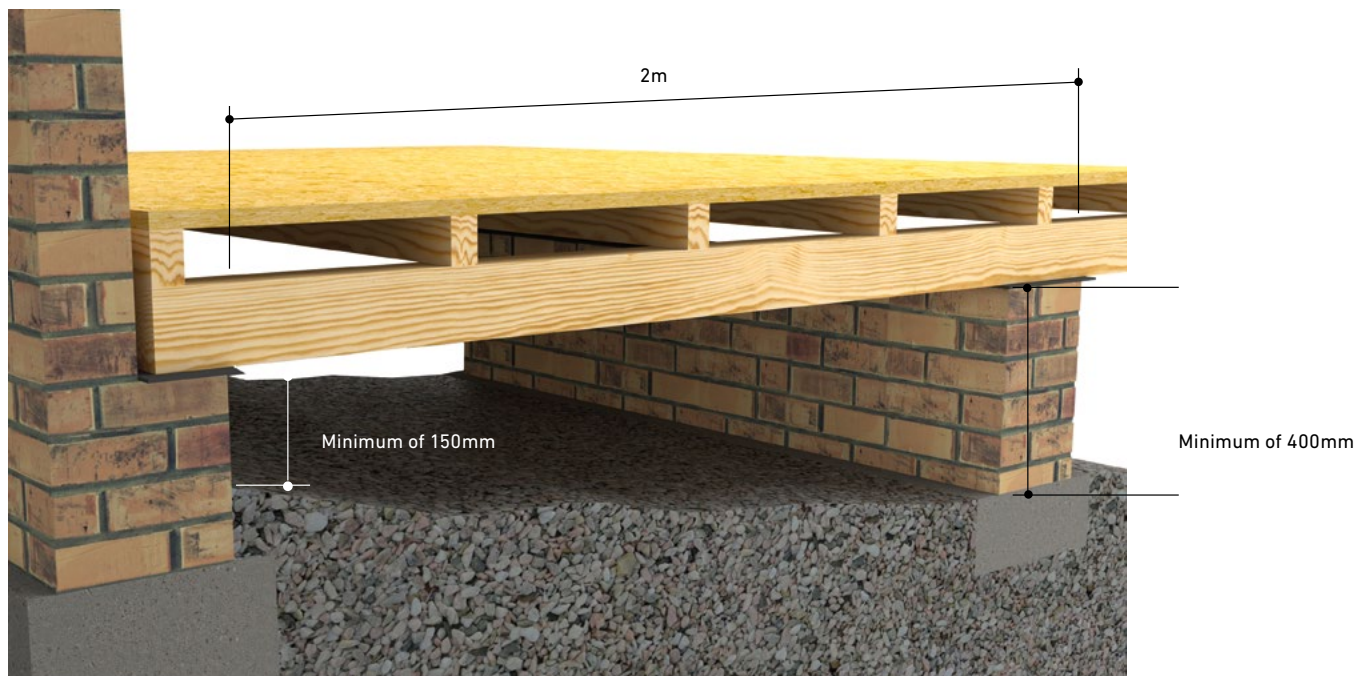


A project of BEMA based in Wald-Michelbach, Germany

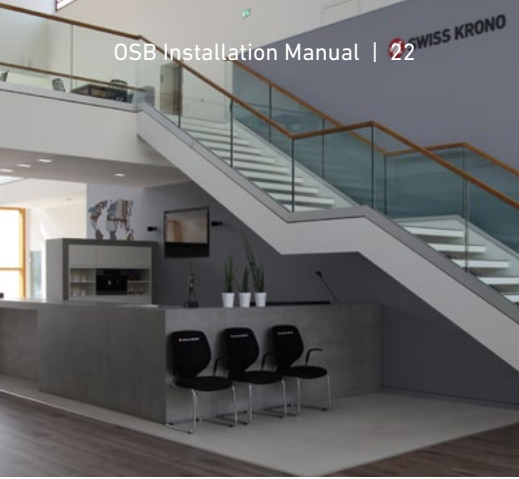
Ground Clearance

The BCA (as well as AS 3660.1: Termite Management) mandates a minimum ground clearance of 150mm to the underside of bearers if no termite inspection is required. Where termite inspection is required, there must be at least a 400mm gap above the ground surface.

On sloping sites, the 400mm clearance may be reduced to 150mm within 2m of external walls. Where termite barriers are not installed or do not require inspection, ground clearance of at least 400mm is advised as good practice.



Minimum underfloor clearance requirements



Did You Know?

At our production facility in Heiligengrabe, Germany, all combustible production waste such as sanding dust and leftover chips is used to fuel an on-site power plant. The electricity generated is used on the premises or sold to the grid.



SWISS KRONO OSB:
an innovative engineered wood product

SWISS KRONO OSB – High Tech Made from Natural Wood

Eco-friendly – Innovative – Conducive to Healthy Living

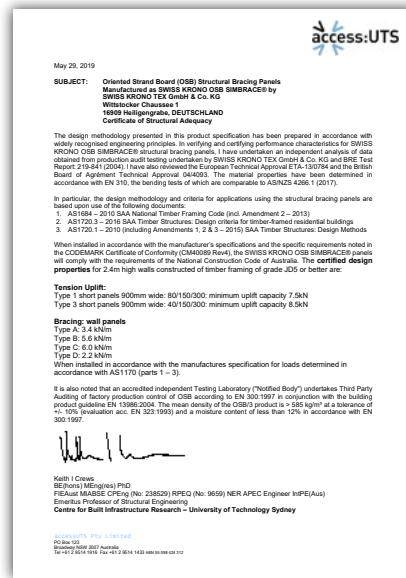
SWISS KRONO Group is one of the world's leading makers of wood-based materials. We produce environmentally friendly, innovative, healthy engineered wood products using mainly thinnings from sustainably managed forests. Our products are therefore certified under the Pan European Forest Certification (PEFC™) scheme and by the Forest Stewardship Council (FSC®).

To promote eco-friendly with SWISS KRONO OSB/3, the team of SWISS KRONO TEX GmbH & Co. KG based in Heiligengrabe, Germany has done pioneering work: SWISS KRONO OSB/3 boards have even been certified for use as food packaging.

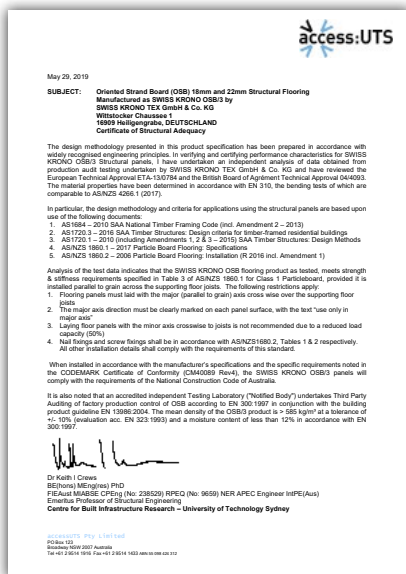
Our Latest Innovation:

SWISS KRONO OSB/3 anti-termite (H2), which is completely impregnated with a long-acting insecticide to optimally guard against termite damage.

Made in Germany



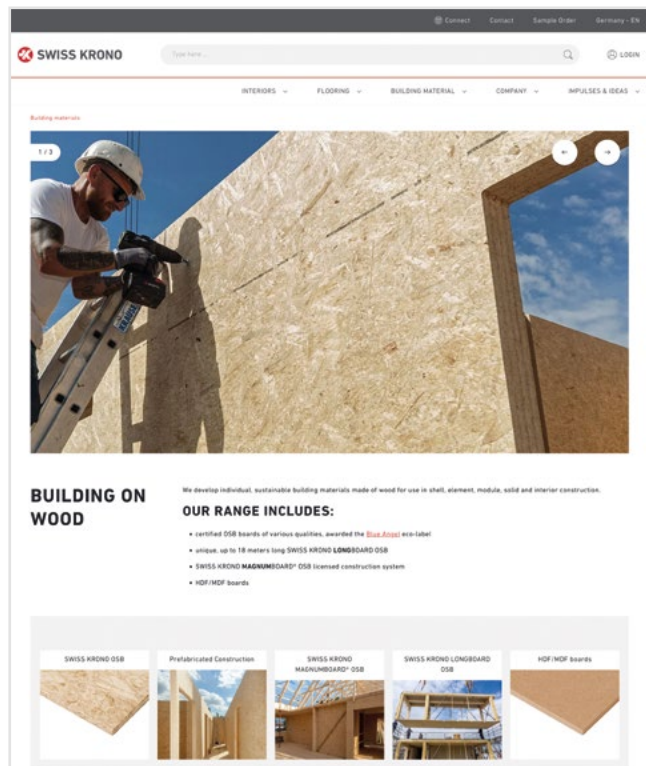
Access UTS certificate confirming that SWISS KRONO OSB/3 used as bracing conforms to Australian Standards



Access UTS certificate confirming that SWISS KRONO OSB/3 used as flooring conforms to Australian Standards



More Service from Us, Greater Success for You



SWISS KRONO on the internet

Our completely redesigned and reorganised SWISS KRONO websites now benefits you with even more services and a stronger customer focus. It's easy, straightforward and quick for you to access product information, news, services, special features and downloads. You can take advantage of the following content 24/7:

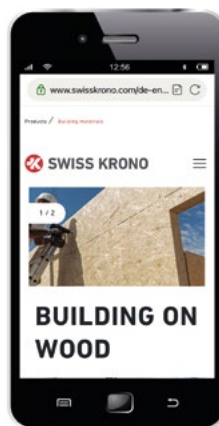
- Information materials
- Data sheets
- Certificates
- Construction details
- Condensation calculator
- Trade fairs and other events
- Environment and sustainability
- References
- Delivery programme
- Bidding documents
- U-value calculator
- Contacts
- ... and much, much more!

SWISS KRONO Is Mobile

The new mobile websites makes it easy for you to access and view all information about SWISS KRONO and our innovative products from anywhere using your smartphone!

Contact
Chris Lowry, Australia

Mobile: +61 (0) 410 677600
chris.lowry@swisskrono.com
chris.lowry@krono.asia



SWISS KRONO TEX GmbH & Co. KG
Wittstocker Chaussee 1
D-16909 Heiligengrabe
Germany
T +49 33 962 69 - 740
F +49 33 962 69 - 376
dehe.sales.osb@swisskrono.com
dehe.technicalservice.osb@swisskrono.com
www.swisskrono/de-en



CodeMark 
(CM70077)