

## PRODUCT DESCRIPTION

KeyFloor FOSB is a high-density engineered wood panel. FOSB has a particleboard-like finish while retaining the structural integrity of a standard oriented strand board. It is a reconstituted wood-based product manufactured primarily for use as flooring. KeyFloor FOSB Flooring has been manufactured to meet or exceed the specifications of:

**AS/NZS 1860.1:2017 Particleboard Flooring.**



### Tongue and Groove Flooring

2400 x 1200 mm, and 3600 x 1200 mm, 20 mm thick

## SCOPE AND COMPLIANCE

KeyFloor FOSB flooring is intended for use as flooring in residential buildings designed and constructed within the scope of **NZS 3604:2011 Timber-Framed Buildings**.

When used in a flooring diaphragm, the requirements of **NZS 3604:2011**, including **Clause 7.3**, shall be adhered to.

When handled and installed following the instructions of this guideline, KeyFloor FOSB flooring will meet the requirements of the **New Zealand Building Code**:

- **Clause B1 STRUCTURE:** Performance B1.3.1, B1.3.2 and B1.3.3 for loads arising from self-weight, imposed gravity loads arising from use, earthquake, wind and impact (i.e., B1.3.3 (a), (b), (f), (h), and (j)).
- **Clause B2 DURABILITY:** Performance B2.3.1(a) not less than 50 years, and B2.3.1(b) 15 years.
- **Clause F2 HAZARDOUS BUILDING MATERIALS:** Performance F2.3.1.

## LIMITATIONS

- KeyFloor FOSB Flooring is suitable for floor loads at a 600 mm joist spacing within the scope of **NZS 3604:2011**. Where static concentrated point loads exceed 180 kg or where uniformly distributed loads exceed 200 kg/m<sup>2</sup>, a qualified design professional should be consulted.
- During construction every effort should be made to stop water ponding. Exposure to the weather should not exceed 12 weeks. Where the 12-week exposure period is likely to be exceeded, laying the floor after close-in (Post-Lay) should be undertaken.
- Wet areas and wet splash areas should be sealed with an impervious coating or waterproof membrane. **NZS 3602:2003** states: "Where maintenance of the impervious coating cannot be assured in wet areas, plywood or timber flooring treated to a minimum of H3 should be used."
- This manual only specifies the requirements for KeyFloor FOSB fixed to solid timber and LVL floor joists per **NZS 3604:2011**. Steel floor joists are outside the scope of this manual.

- The moisture content of the installed panels should not exceed 18%. Installation should not proceed if joist moisture content exceeds 18%.
- Do not apply waterproof sealers, impervious coatings or membranes before close-in, and sheet moisture content must be below 16% before application.
- Floor areas are limited to the scope of NZS 3604:2011. Floor areas outside the scope of NZS 3604 will require specific design by a certified design professional.
- Exposure to excessive ground atmosphere will increase the moisture content of the installed flooring panels. Underfloor ventilation must meet the requirements of NZS 3604:2011 6.14. Where moisture is too high or cross-flow ventilation inadequate, a vapour barrier should be installed per NZS 3604:2011 6.14.3 Ground Cover.
- KeyFloor FOSB flooring is not suitable for exterior situations such as decking substrate, open verandas, or where the ongoing moisture content is likely to exceed 16%.
- Diaphragm floors using KeyFloor FOSB flooring must be within the scope of NZS 3604:2011. If outside the scope of NZS 3604:2011, or if the bracing lines are more than 6 m apart below the floor in question, then the floor will need to be a specifically designed floor diaphragm. Diaphragm floors will require specific design, which will require nogs under the joints and fixings on all sides of the sheets.

## SUBFLOOR PREPARATION

### Framing

- Timber-based floor joists only. Spacing must not exceed 600 mm centres.
- KeyFloor FOSB can be laid over timber framing compliant with NZS 3604:2011 Section 7.

### Moisture

- Subfloor member moisture content must be <18% before installation.
- Use a moisture barrier over concrete or damp-prone areas.
- Minimum clearance of 550 mm between the underside of the flooring and the ground surface is required.

### Subfloor Ventilation

- To prevent subfloor dampness, cross-flow ventilation must comply with NZS 3604:2011 6.14.
- A vapour barrier must be used where ventilation is less than specified in NZS 3604:2011 6.14, where airflow is obstructed, where the nearest ventilation point is >7.5 m, or where the ground is permanently or seasonally damp. The vapour barrier must meet the minimum requirements specified in NZS 3604:2001 6.14.3 & C6.14.3.
- Subfloor ventilation must provide an ongoing moisture content of the KeyFloor FOSB that remains at or below 16%.
- To allow the panels to “breathe”, the underside (ground-facing side) of the panels should not be coated.

## PANEL LAYOUT AND FIXING

### A. Orientation

- Lay panels perpendicular to the joists. Sheets should be continuous over a minimum of three joists, except where fill sheets are used at the edges.
- Stagger joints between adjacent rows (brick pattern).
- Lay panels with the brand down.

### B. Expansion Gaps

- 8 mm expansion gaps must be provided between sheet edges and any fixed elements such as bottom plates and masonry walls.

- For floors outside the scope of NZS 3604:2011 – see limitations.

## C. Support

- Tongue and Groove panels do not require blocking on the edges; the tongue and groove system supports the edge.
- Square edge panels must be supported continuously around the perimeter. Blocking with a minimum of 90 x 45 mm framing timber may be required.
- The ends of all sheets must be supported on a joist.

## D. Adhesive

- The application of adhesive is recommended in conjunction with mechanical fasteners.
- Apply a continuous 5 mm bead of adhesive to the top of the joists.
- Apply a continuous 5 mm bead to the edges of square-edge sheets as installation progresses.
- Apply a continuous 2 mm bead along the top of each tongue as installation progresses.

## Recommended adhesives for timber:

- Gorilla Grip 1 Hour Cure
- Bostik Alpha Grip
- Sika Nail Premium

## E. Fixing

- Panels must be fixed within 15 minutes of applying the adhesive.

## Tongue and Groove

- Fix panels with screws/nails at 150 mm centres along the short edges of each panel and around the perimeter of the floor.
- Fix at 200 mm centres on intermediate joists.
- Fix 15 mm in from the edge to avoid damaging the groove.
- Fix each panel completely before laying the next panel.

## Square Edge

- Fix with screws/nails at 150 mm centres around the perimeter of each sheet.
- Fix at 200 mm centres on intermediate joists.
- Fix 10 mm in from the edge.
- Fix each panel completely before laying the next panel.

## FIXING METHODS

Three acceptable fixing methods:

### Screws

- Countersunk 50 mm x 8 or 50 mm x 10 self-drilling timber floor screws, stainless steel or zinc-coated.
- Do not overdrive; use a low-torque setting.
- Screw head should be no more than 2 mm below the surface.
- Screws should be retightened after close-in, prior to sanding once the floor is dry.

### Nail Gun Nails

- 65 mm x 2.8 hot-dipped galvanised annular-grooved nails.
- Do not overdrive; nails should be no more than 2 mm below the surface.
- For best results, nails should be flush and hand-punched after close-in prior to sanding.

### Hammered Nails

- 60 x 2.8 jolt head hot-dipped galvanised or 60 x 3.15 hot-dipped annular-grooved flooring nails.
- Nails should be hammered flush and hand-punched after close-in prior to sanding.
- Along the edges, nail at slight alternating angles to improve lateral stability.
- At the corners, nail vertically.

## GENERAL INSTALLATION NOTES

- Excess adhesive can be scraped off before it is fully cured.
- To facilitate curing, avoid walking on the panels for 2 hours after fixing.

## WEATHER EXPOSURE

- For best results, limit exposure to less than 12 weeks.
- Post-lay if exposure is likely to exceed 12 weeks.
- Drain surface water quickly; cut out the bottom plate in doorways to assist removal of water.
- Do not seal or lay a membrane until sheet moisture is <18% and the building is closed in.

## WET AREAS

Where maintenance of an impervious coating cannot be assured, H3-treated plywood should be used. Where there is a risk that a leak may go undetected (e.g., under a bath or shower) H3 plywood should be used.

Where an impervious coating can be assured and does not require inspection to confirm 50-year performance, KeyFloor FOSB may be used in wet areas and wet splash areas as allowed in NZS 3602:2003.

110.3.1 "Floor coverings in wet areas such as laundries, bathrooms, kitchens and toilets shall be as set out in E3/AS1."

## STORAGE AND HANDLING

Prior to installation, panels must be kept dry and covered. Panels must be stored on a level surface well clear of the ground with same-sized full-width bearers spaced evenly to ensure panels stay flat and undistorted.

If not stored indoors, panels must be covered

with waterproof material. The waterproof cover must allow airflow around the edges, ends and top sheet, e.g., by placing battens between the top sheet and the plastic cover.

## FINISHING

Punch nails and tighten screws prior to applying floor coverings or sealing.

If the floor becomes wet during installation, the surface grain may rise and sanding may be required. Sand only when the floor is dry (<18% MC) and closed-in.

Excessive sanding can reduce thickness and therefore structural properties.

Fill nail holes with a wood filler.

If clear-coating, ensure the moisture content is <16%.

## HEAT AND FIRE SAFETY & HEATING SYSTEMS

- Separation from fuel-burning appliances, including chimneys and flues, must comply with NZBC Section C-AS/1.
- KeyFloor FOSB flooring must not be exposed to temperatures greater than 50°C.
- Consult appliance manufacturers' installation instructions for required clearances.
- Ducted and free-standing heaters can be used as long as the floor does not exceed 35°C for extended periods.

## MATERIAL DIMENSIONS

Dimensions	Tolerance	
Sheet Length & Width (mm)	3600x1200	+/- 1.0
	2400x1200	+/-1.0
Nominal Thickness	20 (mm)	+/- 0.1
Squareness		< 0.5mm/m
Weight Kg / M2	14.15	
Groove Depth	8 mm	