KOPINE®

FLOORING SYSTEMS

INSTALLATION GUIDE

AND TECHNICAL SPECIFICATIONS

TONGUE & GROOVE 12
KOPINE

ULTRA LOCK™ 12
KOPINE

CodeMark AQ-220917-CMNZ

Environmental Choice New Zealand
Floor Coverings
Licence No. 2817146

kopine.co.nz

ULTRA LOCK™ 12 KOPINE

TONGUE & GROOVE 12 KOPINE

KOPINE FLOORING SYSTEMS INCLUDE BOTH ULTRALOCK12 AND TONGUE & GROOVE12 HIGH-DENSITY PARTICLEBOARD FLOORING.

- Codemark compliant
- 12 week exposure time
- Meets AS/NZS1860 Standard
- Adhesive provided at no extra cost
- Easy to install - no nogs or dwangs required
- Moisture-resistant joints
- 2-hour walk on time
- Environmental Choice NZ
- Low formaldehyde emission (E1)
- 20mm thick
- Two panel sizes – 2400 x 1200mm and 3600 x 1200mm
- Made right here in New Zealand at Kopu near Thames.
- Using sustainable NZ grown Radiata pine

WHAT'S IN THIS GUIDE

1. **How to install Ultralock12**
2. **How to install Tongue & Groove12**
3. **Technical Specifications**

1 HOW TO INSTALL ULTRALOCK12

Kopine Ultralock™12 is a high-density particleboard flooring that uses a patented system to bond the panel edges together for a seamless finish. You don't need nogs or dwangs and the Gorilla Grip glue (provided at no extra cost when you buy the board) provides an effective moisture seal and an excellent strong joint when set.

WHAT YOU NEED BEFORE YOU START

- Holdfast Gorilla Grip – supplied when you buy the panels and the only one tested with our board for Codemark compliance.
- No. 8 gauge x 50mm countersunk screws (recommended).

OR

- A minimum of 65mm x 2.8mm hot-dipped galvanised annular grooved flooring nails if you've got a nail gun and know how to use it.

OR

- A minimum of 60 x 2.8mm hot-dipped galvanised jolt head nails or 60 x 3.15mm hot-dipped galvanised csk annuler grooved flooring nails (if you're old school and using a hammer).

STEP 1

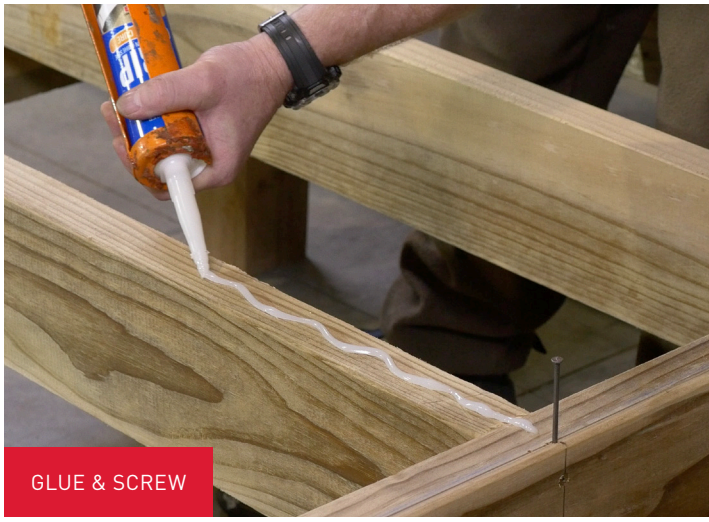
JOIST SPACING

- Joist spacing should be no more than 600 mm centres. The closer the joists the more rigid the floor.
- Before you lay your first panel, put some nails into the joist to hold it in place.
- Irrespective of the size of the floor allow for an 8mm expansion gap between the panel edges and any fixed elements i.e. masonry walls, bottom plates etc.

STEP 2

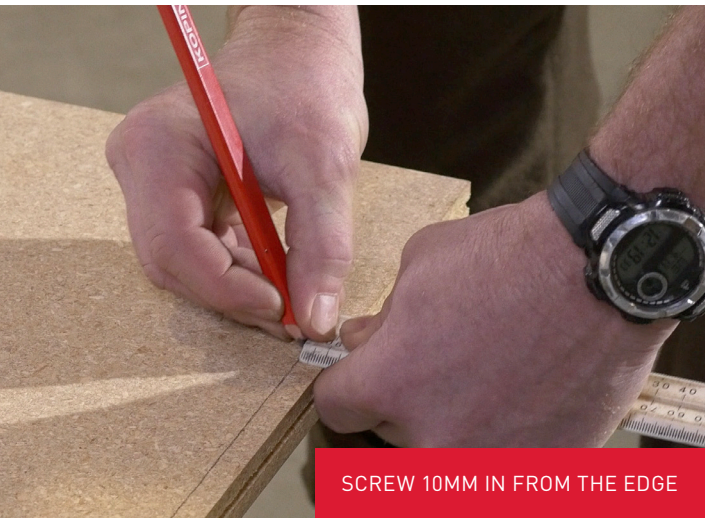
GLUE THE JOISTS

Before you put down your first panel, apply a continuous bead of glue to the top of the joists it's going to sit across, and then all subsequent joists as you lay further sheets.



GLUE & SCREW

ALLOW 8MM EXPANSION GAP



SCREW 10MM IN FROM THE EDGE

STEP 3

LAYING THE FIRST SHEET

- Make sure the panel edges are square, and free from dirt and grease.
- Take a straight, square line from one corner of the floor and lay the first panel down this line, across the glued joists.
- Screw the first panel down.
- Nails or screws should be spaced at 150mm centres along the short edge of the panels and around the perimeter edge of the entire floor, and at 200mm centres along intermediate joists.
- Nails or screws must be a minimum of 10mm from the edge.
- Completely fix panels when you lay them down – corner fixing only is not good practice and not enough to hold the panels while the glue cures.

Using screws? Use a lower torque setting to reduce the risk of overdriving and tearing the threads loose in the timber. Overdriven screws must be removed and set in a new position. Screw fixing gives the tightest result of all the methods.

Using a nail gun? A depth adjuster attachment should be used on the nail gun and adjusted to ensure that the nails do not penetrate more than 2 mm below the surface of the panel. Do not rely on the nails to pull panels down tight on the joists – panels must be in contact with the joist before the nail is fired.

Using a hammer? Drive nails at a slight angle (alternating) and parallel to the sheet edge for improved lateral holding. Nail vertically at corners. Nails should be hammered flush when laying, then punched below the surface just before sanding.

STEP 4

GLUEING THE PANELS

Note: Gorilla Grip adhesive works best in conditions above 10C. Do not use below 5C. It's the ONLY adhesive tested and recommended for use with Kopine flooring to achieve Codemark compliance.

- Apply the glue bead to all edges of the first panel in a continuous run of at least 5mm diameter – more is better!
- The glue should squeeze out of the top of the joint when you push the panels together.
- Lay panels in a staggered, brick-like pattern with panels at right angles to the joists, making sure you glue all edges and the joists underneath – this will help stop the squeaking and peaking.
- Gorilla Grip cures fast so don't mess about. Fix the panels within 15 minutes of the glue being applied.
- If you move the panels apart after 15 minutes, you'll need to put some fresh glue on before you rejoin them.

GLUE GENEROUSLY ALONG EDGE

EXCESS GLUE MEANS IT'S RIGHT

JOB DONE!

STEP 5

AVOID THE PANELS FOR TWO HOURS

- Clean any excess glue off the joints with a scraper.
- Don't walk on the joints for a minimum of two hours after you've glued – especially if joists are at 600mm centres or in cold conditions.
- If you have to walk over it, lay planks across or walk across the joists only.

2

HOW TO INSTALL TONGUE & GROOVE12

Kopine Tongue & Groove12 is a high-density particleboard flooring that uses black plastic tongues with a grooved edge to provide a super tough join. You don't need nogs or dwangs and the glue (provided when you buy the board at no extra cost) provides an effective moisture seal to minimise joint peaking.

WHAT YOU NEED BEFORE YOU START

- Holdfast Gorilla Grip –the only one tested with our board for Codemark compliance.
- No. 8 gauge x 50mm countersunk screws (recommended).
- A rubber mallet.

OR

- A minimum of 65mm x 2.8mm hot-dipped galvanised annular grooved flooring nails if you're using a nail gun.

OR

- A minimum of 60 x 2.8mm hot-dipped galvanised jolt head nails or 60 x 3.15mm hot-dipped galvanised csk annuler grooved flooring nails (if you're old school and using a hammer).

STEP 1

JOIST SPACING

- Joist spacing should be no more than 600 mm centres. The closer the joists the more rigid the floor.
- Before you lay your first panel, put some nails into the joist to hold it in place.
- Irrespective of the size of the floor allow for an 8mm expansion gap between the panel edges and any fixed elements i.e. masonry walls, bottom plates etc.

GLUE & SCREW

STEP 2
GLUE THE JOISTS

Before you put down your first panel, apply a continuous bead of glue to the top of the joists it's going to sit across, and then all subsequent joists as you lay further sheets.

STEP 3
LAYING THE FIRST SHEET

- Make sure the panel edges are square, and free from dirt and grease.
- Take a straight, square line from one corner of the floor and lay the first panel down this line, across the glued joists.
- Screw the first panel down, ensuring screws (or nails) are a minimum of 15mm from the edge to avoid the plastic tongue.
- Nails or screws should be spaced at 150mm centres along the short edge of the panels and around the perimeter edge of the entire floor, and at 200mm centres along intermediate joists.
- Completely fix panels when you lay them down – corner fixing only is not good practice and not enough to hold the panels while the glue cures.

Using screws? Use a lower torque setting to reduce the risk of overdriving and tearing the threads loose in the timber. Overdriven screws must be removed and set in a new position. Screw fixing gives the tightest result of all the methods.

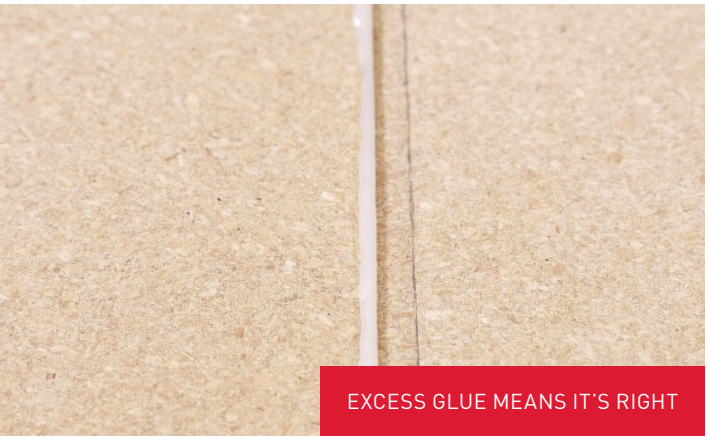
Using a nail gun? A depth adjuster attachment should be used on the nail gun and adjusted to ensure that the nails do not penetrate more than 2 mm below the surface of the panel. Do not rely on the nails to pull panels down tight on the joists – panels must be in contact with the joist before the nail is fired.

Using a hammer? Drive nails at a slight angle (alternating) and parallel to the panel edge for improved lateral holding. Nail vertically at corners. Nails should be hammered flush when laying then punched below the surface just before sanding.

ALLOW 8MM EXPANSION GAP

SCREW 15MM IN FROM THE EDGE

GLUE GENEROUSLY ALONG EDGE



EXCESS GLUE MEANS IT'S RIGHT

STEP 4

GLUEING THE PANELS

Note: Gorilla Grip adhesive works best in conditions above 10C. Do not use below 5C. It's the ONLY adhesive tested and recommended for use with Kopine flooring to achieve Codemark compliance.

- Apply the glue bead to all edges of the first panel (including the top and bottom of the tongue) in a continuous run of at least 5mm diameter – more is better!
- The glue should squeeze out of the top of the joint when you push the panels together. You'll need to use the rubber mallet to join the panels tightly.
- Lay panels in a staggered, brick-like pattern with panels at right angles to the joists, making sure you glue all edges and the joists underneath – this will help stop the squeaking and peaking.
- Gorilla Grip cures fast so don't mess about. Fix the panels within 15 minutes of the glue being applied.
- If you move the panels apart after 15 minutes, you'll need to put some fresh glue on before you rejoin them.

STEP 5

AVOID THE PANELS FOR TWO HOURS

- Clean any excess glue off the joints with a scraper.
- Don't walk on the joints for a minimum of two hours after you've glued – especially if joists are at 600mm centres or in cold conditions.
- If you have to walk over it, lay planks across or walk across the joists only.

JOB DONE!

3

TECHNICAL SPECS

Ultralock™12 and Tongue & Groove12 are high-density particleboard flooring systems made here in New Zealand by Kopine. Strong and fast to install, with water-resistant joints, both flooring systems are quiet, cost-effective and will stand the test of time.

The specifications here cover both systems – where differences occur they are clearly identified.

Both flooring products have been tested to AS/NZ 1860 and have Codemark Certification and Environmental Choice NZ certification.

ULTRA LOCK™ 12
KOPINE

Kopine Ultralock™12 system uses a patented system to glue the grooved panel edges together in a continuous flooring membrane. The adhesive, which is supplied at no extra cost when you buy the board, eliminates the need for nogs or dwangs, saving time and money.

The glue also provides an effective moisture seal at the joints, significantly reducing the chance of edge peaking that requires additional sanding.

TONGUE & GROOVE 12
KOPINE

Kopine Tongue & Groove12 is a traditional method of jointing but uses a glue bond in addition to the black PVC tounge to produce a strong joint which significantly reduces edge peaking compared to glueless systems.

PRODUCT DESCRIPTION

Kopine Ultralock™12 and Kopine Tongue & Groove12 flooring systems are reconstituted wood panels manufactured by bonding radiata pine wood particles with a melamine urea formaldehyde resin using a combination of heat and pressure.

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Floor Coverings
Licence No. 2817146

PROPERTIES OF KOPINE FLOORING SYSTEMS

Dimensions		
Size (mm)	2400 x 1200	3600 x 1200
Nominal Thickness(mm)	20 mm	20 mm
Sheets per pack	50	20
Sheet weight (kg)	41	61

Tolerances	
Board squareness	Length of sheet diagonals does not differ more than 1.5 mm
Thickness	+/ – 0.4 mm
Length and width	+/ – 1.5 mm
Sheet edges	2.0 mm max. deviation from line

Physical properties of Kopine particleboard	
Density	> 670 kg/m3
Internal bond[1]	> 500 kPa
Modulus of rupture[1]	> 17 MPa
Modulus of elasticity[1]	> 2650 MPa
Moisture content (at dispatch)	5 – 13 %
Surface water absorption[1]	< 210 g/m2
Thickness swell (24 hour soak)[1]	< 14 %
Extractable formaldehyde	E1:≤1.5 mg/L when tested in accordance with AS/NZS 4266.16.
Surface	Upper surface is sanded, underside is sanded
Thermal insulation	R = 0.13 m2 C/W

[1] Physical properties based on lower 5th percentile values in relation to particleboard flooring panels when tested internally (based on the procedures stated in AS/ NZS 4266).

BUILDING MATERIALS FOR USE WITH KOPINE® FLOORING SYSTEMS

Holdfast Gorilla Grip Adhesive

Holdfast Gorilla Grip is a fast curing, one component, polyurethane-based adhesive with high bond strength. It bonds deeply into the panel fibres, even on damp surfaces. Holdfast Gorilla Grip cures to a transparent glue line and gives added protection against moisture penetration into the joint significantly decreasing the risk of edge swell or peaking. The glue is temperature resistant to 100˚C.

For more information contact Holdfast on 0800 701 080.

Construction adhesives are supplied in 310 ml cartridges and will fit any standard glue gun. Cartridges are included at no extra cost as part of the Kopine Ultralock™12 and Tongue & Groove12 flooring systems.

Sustainability

Kopine Ultralock™12 and Tongue & Groove12 are made from radiata pine shavings and chips. New Zealand plantations are managed in compliance with the New Zealand Forest Accord.

Kopine Flooring Systems have Environmental Choice NZ accreditation under the Floor Coverings category.

Joists

The choice of joists will play a part in determining the performance of the flooring system. Moisture content of the joists must be less than 18%. It is highly recommended that joists be either Machine Stress graded, high temperature kiln dried timber such as laser frame, OR where longer spans and higher performance is required, use LVL (laminated veneer lumber) joists.

The benefits are a stiffer, more level floor than one laid with conventional wet, visual graded joists. This will result in reduced vibration, transmitting less sound above and below the floor.

Note: Kopine Flooring systems provides maximum performance using the specified components only when used in accordance with the installation instructions at the front of this brochure. Substitute components have not been tested and may not perform to the same standard and are not recommended.

DESIGN CONSIDERATIONS

Design responsibility

The specifier for the project must ensure that the details in the specification are appropriate for the intended application and that additional detailing is provided for specific design or any areas that fall outside the scope and specifications of this literature.

Ground clearance

A minimum clearance of 550 mm must be provided between the underside of the flooring and the surface of the ground. Refer NZS 3604:2011. Inspection access is also required.

Heavy loadings

For concentrated loads over 180 kg or uniformly distributed loads over 200 kg/m2, a structural engineer should be consulted. Joints must be supported by nogs/dwangs beneath heavy loads.

Floor frame spacings

Kopine Ultralock™ particleboard flooring is suitable for residential flooring applications with a maximum frame spacing of 600 mm for a maximum 1.8 kN live load. Live loads above 2.0 kPa / 1.8 kN are required to be specifically designed using Kopine flooring properties outlined earlier in this technical section.

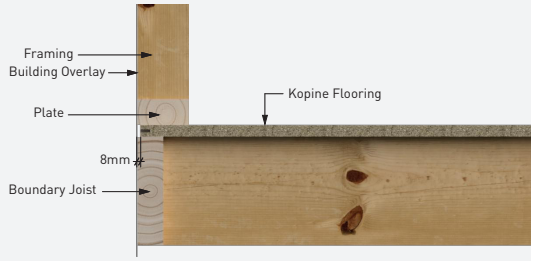
For greater strength and stiffness consider a frame spacing of 400 mm centres or 450 mm centres where 3600 x 1200 mm sheets are used.

Expansion gaps

Regardless of the size of the floor, an 8 mm expansion gap must be provided between the panel edges and any fixed elements e.g. masonry walls, bottom plates etc. This is important to allow for any linear expansion and applies whether pre or post laying.

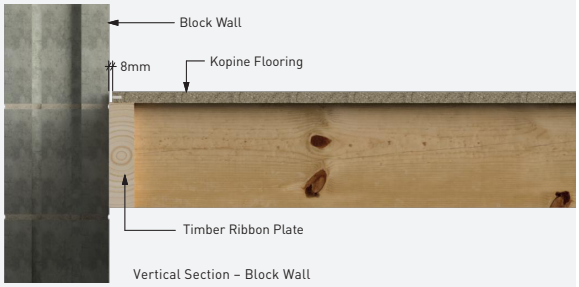
Where the effects of expansion in the flooring may be critical with respect to achieving the desired floor or wall finishes, then it is recommended that expansion joints be incorporated into the design. Allow expansion of 2.0 mm/m of floor dimension utilising the details given under 'Large Floor Areas' section.

Expansion Gap at Exterior Wall



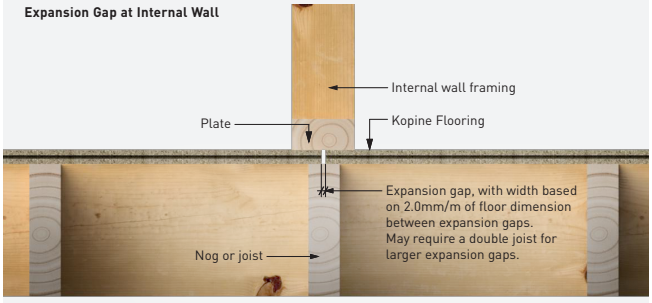
Vertical Section

Expansion Gap at Exterior Block Wall



Vertical Section – Block Wall

Expansion Gap at Internal Wall



Vertical Section

Large floor areas

As with all wood products, particleboard floors will expand and contract with changes in moisture content of the panels. For large floor areas, provision must be made for expansion of the panels in addition to the perimeter gaps. It is recommended that expansion joints should be designed into the floor at a minimum of 20 mm per 10 metre of floor at a maximum of 10 metre spacing's or smaller gaps with closer spacing to give an equivalent space.

Where floors are laid in wet conditions, consideration should be given to decreasing the distance between expansion joints.

Exposure to weather

- Kopine flooring systems may be exposed to weather for up to three months. For best results keep exposure to a minimum.
- Pre laying - make sure the building is closed in within three months, preferably sooner. Post lay if there is a risk of over-exposure.
- Clear surface water from the floor quickly - do not allow to pond.
- To allow moisture to evaporate freely, do not apply sealer's, tape or other impervious sheet material to pre laid floor while it is exposed.
- Kopine flooring panels are designed to be laid across joists and glued together at the edges. This continuous glue bond eliminates the need for further edge support such as timber nogging. All end joints (short edges) must be made over a joist and glued.

Floor diaphragms

Kopine Ultralock™12 and Kopine Tongue & Groove12 are suitable for use as a floor diaphragm within the scope of NZS 3604.

Ventilation

Cross-flow ventilation must comply with NZS 3604 6.14 Prevention of Dampness. Ventilation openings must be evenly distributed around the entire perimeter – in the foundation and/or substructure walling.

A ground cover vapour barrier must be installed in sub-floor areas where:

- The ground will be permanently or seasonally damp.
- The airflow is obstructed by party walls, internal foundation walls or attached terraces.
- Points on the ground are greater than 7.5 metres from a ventilation opening.

Refer to NZS 3604 – 6.14.3.

Underside coating

The underside of Kopine flooring panels facing the ground must not be coated with any form of sealant and only approved product is to be used as insulation as per the NZ Building Code.

This allows the sheet to breathe.

Surfacing for wet areas

In water-serviced areas such as laundries, bathrooms, toilets and showers the floor must be covered with a moisture-impervious membrane, coved at the walls, extending under toilet pans. Vinyl tiles, carpet or clear coatings must not be used in these areas. Refer Acceptable Solution E3/AS1. 2.12

Spread of fire

Kopine Flooring Systems can be used where the NZ Building Code requires no specific fire protection criteria.

Heat and fire safety

The floor must be protected from heat sources such as free-standing heaters, space heaters, hot air ducts and pipes containing hot water or steam. Floor temperature must not be allowed to exceed 35˚C for prolonged periods.

NZ Building Code C1.3.2 specifies how the floor must be separated from fireplaces, flues, chimneys and fuel burning appliances. Consult appliance manufacturers to determine minimum clearances which will ensure the floor does not exceed 50˚C for short periods or 35˚C for longer.

Floor Heating Systems

- Over Floor Heating Systems
  Over floor heating e.g. under carpet or tiles, may be used with Kopine Flooring Systems , provided the floor surface temperature does not exceed 35˚C.

  Care must be taken to ensure that the floor temperature is normally maintained at or less than the recommended long-term maximum of 35˚C. In these applications, care must be taken to ensure that flooring is laid over dry framing and is well protected from the weather until the building is closed in. Laying of the flooring after close in is recommended. Any failure of the heating system is the responsibility of the floor heating system manufacturer.
- Under Floor Heating Systems
  Under NO CIRCUMSTANCES should any floor heating system be attached to the underside of Kopine flooring panels or be attached or placed between joists or any cavities of the floor framing.

Insects – fungus

The risk of damage from insects such as borer or termites is very low. For best results ensure the moisture content does not exceed 18% for prolonged periods and install in accordance with the ventilation requirements of NZS 3604.

Structure

Kopine® Flooring Systems are manufactured to AS/NZS 1860 and as such comply with B1 of the NZ Building Code. The long-term performance of the floor depends almost entirely on the dryness and flatness of the subfloor and the standard of fixing.

Durability

When used in accordance with the instructions and recommendations in this guide and in accordance with NZS 3602, Kopine Ultralock™12 and Kopine Tongue & Groove12 flooring will meet the durability performance requirements of NZ Building Code. Both flooring systems carry Codemark accreditation, meeting the requirement for 50 years durability under the code and this includes the supplied adhesive.

HEALTH & SAFETY

Kopine Flooring Systems should be handled as per the Particleboard Material Safety Data Sheet (MSDS) downloadable from **www.kopine.co.nz**

Storage and work areas should be well ventilated and dust cleared regularly by vacuum or wet sweeping methods.

If skin irritation occurs, wear long-sleeved shirts, trousers and comfortable work gloves.

For respiratory protection, wear dust masks which comply with AS/NZS 1715 and AS/NZS 1716, EN 143:2000 and EN 149:2001, ANSI 288 or national equivalent.

For eye protection wear safety glasses which comply with AS/NZS 1337.

Holdfast Gorilla Grip Adhesive: Observe normal industrial hygiene measures and for further information refer to the MSDS sheet available from Holdfast Manufacturing, 0800 701 080.

STORAGE & HANDLING

Kopine® Ultralock™12 & Tongue & Groove12 Flooring:

- May be exposed to weathering for up to 12 weeks during the construction process. It must not be exposed for longer periods and should be protected from extreme weather during construction.
- Must not be installed over timber supports with moisture content over 18%.
- Is not suitable for use as a substrate for roofing or decking membranes.
- Interior surfaces must be sealed with polyurethane or covered with carpet or sheet vinyl prior to occupation of the building.

Before Installation

- Protect the panels from weather and keep dry before laying. Store the pack clear of the ground on level bearers.
- A breather-type cover must be supported clear of the panel surface allowing air to circulate freely around the pack.

Handling

- Use gloves when handling product to avoid splinters.

After Installation

- Kopine flooring may be exposed to weather for up to 12 weeks. For best results keep exposure to a minimum.
- Clear surface water from the floor quickly – do not allow it to pond. Remove the bottom plate from doorways to make clearing easier.
- To allow moisture to evaporate freely, do not apply sealers, tape or other impervious sheet materials to a pre-laid floor while it is exposed.

Dimensional changes of up to 0.2% in panel length and width may occur in response to humidity changes.

FINISHING

CLEAR FINISHING PREPARATION

If clear finishing is planned, to avoid colour variation do not mix batches of sheets. To prevent stains, avoid prolonged contact with sawdust piles, stacked timber, steel scaffolding, cement, strapping or nails especially if rusting is likely. Avoid spills of tea, coffee, paint or cement. Keep the period of exposure short.

Kopine flooring panels must be sealed with polyurethane or covered with carpet or sheet vinyl before the building is occupied. Lightly sand with 40-80 grit paper before laying floor coverings or clear finishing.

Do not over-sand. Excessive sanding can reduce structural strength and lead to colour variation, visible when the floor is clear finished.

Clear finishing

- Punch nails then carefully sand the entire floor.
- Remove dust from the floor and skirtings with a broom and vacuum cleaner.
- Apply the first polyurethane coat, following manufacturer's instructions.
- Fill nail holes with a filler such as DAP wood dough.
- Apply further coats, lightly sanding between each coat.
- Follow manufacturer's instructions to complete.

Glue-fixed floor coverings

Refer to floor covering manufacturer's specific requirements.

Maintenance

Regular underfloor inspections must be made. Any sign of moisture or mould on the floors or lower parts of walls must be investigated and corrective action taken. Plumbing leaks, moisture migration or leakage from external sources must be rectified. Moisture concentration in wall cavities must be repaired and recurrence prevented.

Keep vents in the perimeter foundation walls clear of vegetation and other obstructions to allow proper subfloor ventilation at all times. Keep subfloor vapour barriers and insulation foil in a serviceable and effective condition.

Floor coverings and coatings must protect the whole floor surface. In water-serviced areas the moisture-impervious floor covering or coating must be maintained so water cannot reach the particleboard.

Floor wastes must be kept unobstructed and drain to the outside of the building.

After flooding

Dry the floor quickly. Lift carpets and slit insulation foil drapes so all water drains.

FURTHER INFORMATION

Please refer to the appropriate Technical Data Sheets or MSDS which are downloadable from the Kopine website at **www.kopine.co.nz**

NOVEMBER 2018

Kopine® is a registered trade mark of Kopine Ltd, a business unit of New Zealand Panels Group.

This guide contains important information on the installation and maintenance of the Kopine Ultralock™ & Tongue & Groove flooring systems. The information contained in this guide is current as at November 2018 and replaces all previous publications relating to the Kopine Ultralock™ and Tongue & Groove flooring systems. Kopine reserves the right to revise this brochure without any notice.

Kopine has used its reasonable endeavours to ensure the accuracy and reliability of the information contained in this brochure, and to the extent permitted by law, will not be liable for any inaccuracies, omissions or errors in this information nor for any actions taken in reliance on this information. When specifying or installing Kopine Flooring Systems visit **www.kopine.co.nz** or call **0800 866 678** to ensure you have the current specification material.