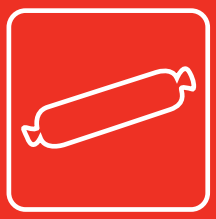
Dribond
CONSTRUCTION CHEMICALS

Direct Adhesive Fixing of Timber and Parquetry Floors

Packaging



Mixing

Application

Uses

Substrates

- Structural timber
- Compressed cement sheet
- Concrete
- Plywood
- Levelling compound

The Sub-Floor

The sub-floor, when direct fixing timber flooring can be concrete, compressed cement sheet, structural timber flooring, existing timber floors and ceramic tiles.

The surface must be structurally sound and free from all contaminants and coatings (e.g., paint, sealers, waxes, old adhesives) that could compromise the adhesive bond. The surface needs to be sound and the integrity of the sub-floor must be able to withstand forces associated with timber floor movement, which under certain conditions can be quite high. As such, any contamination needs to be removed, which may entail sanding, mechanical grinding or dustless shot blasting.

Existing timber floor must be sound and sanded to remove previous coatings (fix strip flooring at 90° to the existing timber).

If there are any doubts about the suitability of the substrate for adhesive fixed timber flooring, an adhesion trial should be carried out to determine suitability. In such instances adhered samples should be removed after 24 hours and the failure assessed. A combination of sub-floor, adhesive and flooring failure is the best result.

The contractor must be satisfied and be responsible for the suitability of the sub-floor prior to installation. When fixing to existing tiles, the surface must be structurally sound, free of coatings, contaminants and primed with **Epecrete**.

Concrete Floor Flatness

The surface of the floor must be flat and when there is greater than 3mm variation beneath two high points when a 3m straight edge is placed on the slab, then the slab must be levelled with **Level Floor**. Holes and ramping can be fixed with **Feather Floor** or **Rapid Set 45**.

Moisture Barrier

All slabs should be at least 3 months old prior to considering laying a timber floor. The moisture in the slab must also be assessed prior to installation. If the in-slab relative humidity is below 70% RH, or 5.5% moisture content (testing in accordance to the test kit instructions and AS1884) then the timber flooring can be laid.

As moisture content in concrete is difficult to assess, **Epecrete** (epoxy moisture vapour barrier) can be used to protect the timber from sub-floor moisture and there is no need for moisture testing.

Underlays

Underlays can be used as a base for direct adhesive fixing of timber floors. Common products are structured timber flooring, plywood and cement fibreboard.

When in doubt about the moisture content of the sub-floor, **Epecrete** (epoxy moisture vapour barrier) is applied prior to the underlay.

Underlays must be adhesive fixed and nailed to achieve a sound base that is well-bonded and solid underfoot. The underlay must be free of contaminants that could compromise the adhesive bond.

Acoustic

Acoustic sound deadening (BCA compliant) in multilevel construction can be satisfied by the use of **Acoustiflor** used to suppress sound and level the floor and **Elastafix** hybrid polymer adhesive to fix the timber.

Acoustiflor can be applied to concrete floors that have less than 5.5% moisture content without the use of a moisture barrier.

Adhesive Fixing

Adhesive for fixed timber flooring should be **Elastafix** manufactured by **Construction Chemicals**.

Elastafix

A hybrid-polymer adhesive used for bonding solid wood and engineered timber to common, interior building surfaces.

Adhesive Application

Apply the adhesive with the recommended notched trowel. Spread the adhesive at 90° to the direction of the timber.

The adhesive must be well adhered to the sub floor achieving a solid bond with no underfoot movement and minimum of 75% adhesive coverage bonding the timber to the floor.

Remove adhesive spills immediately. Do not let it dry on the surface. Allow the adhesive 24 hours to cure before walking on, or removing nails or weights. Full cure 7 days @ 23°C @ 50% relative humidity.

Clamping & Cramping

Clamping/cramping is done to reduce gaps between boards when adhesive fixing.

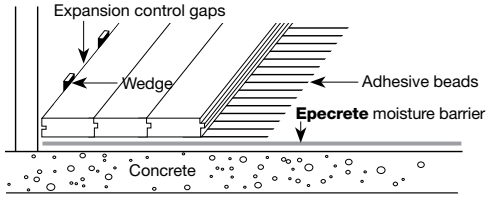
The degree of cramping will vary with on-site conditions and evaluation of the timber.

Not all installations are gap free and gaps are considered normal when adhesive fixing, an average gap of 1.5mm for every 80mm is permissible provided it is filled and sanded in accordance with the standard.

Expansion Allowance

A 10mm–12mm expansion gap must be provided around the perimeter of every floor to allow for movement.

Direct adhesive fixing of timber and parquetry floors



Securing Timber until the Adhesive Sets

Nails (secret, temporary or permanent) wedges or weights can be used in the normal way to secure the timber. Secret and permanent nail where the nail is left and wedges and weighting will not affect the integrity of the moisture barrier.

Temporary nailing can be used without affecting the performance of the moisture barrier if there are no more than 10 nails per square metre. The contractor is to determine the amount/type of fixing dependent on the site, material conditions and flatness of the sub-floor.

When nailing, puncture marks are to be filled in accordance with the standard. Securing parquetry while the adhesive sets is not normally required.

Acclimatisation of the Timber Flooring

Timber is hygroscopic which means it can gain or lose moisture with its surrounding conditions. The moisture changes cause the expansion and contraction and this can vary with the species.

Acclimatisation is to allow the timber time to balance its moisture content with the ambient moisture and other building materials that contain moisture. The timber is in equilibrium when it neither gains nor loses moisture in a specific environment.

The decision for the need to acclimatise the timber lies with the contractor, his decision will be based on the moisture survey of the timber and the proposed location of the timber.

If the ambient conditions are not stable or equal to be in-service conditions the new installation should be covered to protect it, until conditions are equal to in-service conditions.

Timber flooring fixed using the direct adhesive fix method must be within ±2% of the equilibrium moisture content of the building to minimise excessive movement after installation which can overstress the adhesive.

Timber quality should be fit for purpose and conform to AS4785, AS1810 and AS2796. This should be considered a minimum standard.

Timber and its properties vary greatly. The supplier/distributor should be consulted for application and fixing direction prior to proceeding.

The application of timber floors using the direct adhesive fix method must be done by skilled applicators with a thorough knowledge of application, moisture requirements and acclimatisation conditions of timber.

According to the Bureau of Meteorology, moisture is relative to the temperature and level of humidity in the area you are working (notwithstanding other environment considerations such as air conditioning).

Acclimatisation Timber

Acclimatising relies on each board being exposed to the in-service atmosphere and therefore packs must at least be opened up and restacked in a way that allows airflow between each board. Acclimatising can only be effective in an air-conditioned building if the air-conditioning is operating at the time or in dry localities during drier periods.

The species and period for which it is acclimatised will also influence effectiveness. For some higher density species that are slow to lose or take up moisture, acclimatising may have little effect. Acclimatising in dry climates does not negate the need to provide for floor expansion during periods of wet weather and will not overcome poor drying practices.

It is important that timber flooring is laid close to the in-service moisture content that it will attain and therefore it is necessary to assess both the moisture content of the flooring supplied and the expected in-service conditions prior to laying. Moisture content testing of the flooring should be undertaken in accordance with AS1080.1.

The diagram flow is provided as a guide as to whether acclimatisation should be considered and also the need for possible additional expansion allowance.

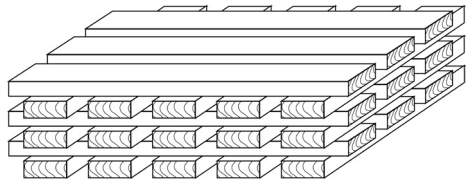
The following table may assist you to assess the % moisture content in your area.

Assessing moisture content

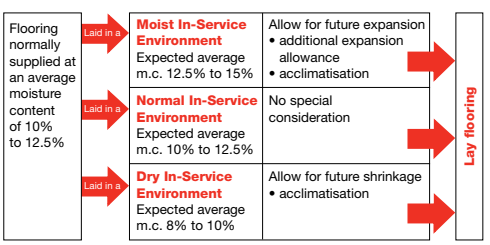
	1°C	5°C	10°C	16°C	21°C	27°C	32°C	38°C
5%	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.2
10%	2.6	2.6	2.6	2.5	2.5	2.4	2.3	2.3
15%	3.7	3.7	3.7	3.6	3.5	3.5	3.4	3.3
20%	4.6	4.6	4.6	4.6	4.5	4.4	4.3	4.2
25%	5.5	5.5	5.5	5.4	5.4	5.3	5.1	5.0
30%	6.3	6.3	6.3	6.2	6.2	6.1	5.9	5.8
35%	7.7	7.7	7.7	7.0	6.9	6.8	6.7	6.5
40%	7.9	7.9	7.9	7.8	7.7	7.6	7.4	7.2
45%	8.7	8.7	8.7	8.6	8.5	8.3	8.1	7.9
50%	9.5	9.5	9.5	9.4	9.2	9.1	8.9	8.7
55%	10.4	10.4	10.4	10.2	10.1	9.9	9.7	9.5
60%	11.3	11.3	11.3	11.1	11.0	10.8	10.5	10.3
65%	12.4	12.4	12.4	12.1	12.0	11.7	11.5	11.2
70%	13.5	13.5	13.5	13.3	13.1	12.9	12.6	12.3
75%	14.9	14.9	14.9	14.6	14.4	14.2	13.9	13.6
80%	16.5	16.5	16.5	16.2	16.0	15.7	15.4	15.1
85%	18.5	18.5	18.5	18.2	17.9	17.7	17.3	17.0
90%	21.0	21.0	21.0	20.7	20.5	20.2	19.8	19.5
95%	24.3	24.3	24.3	24.1	23.9	23.6	23.3	22.9
98%	26.9	26.9	26.9	26.8	26.6	26.3	26.0	25.6

Source: Wood as an Engineered Material, courtesy of Tait Timber.

The correct way to stack timber, which allows airflow



In-service moisture content (m.c.) guide



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