

# Creaking Joints.

Phil Buckley, ATFA Inspector, Mint Floors & Shutters.

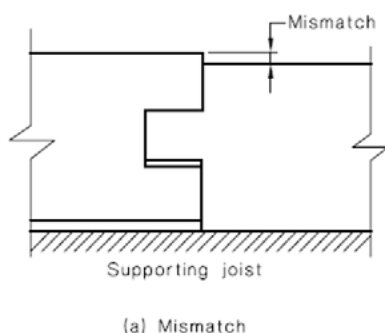


Ever installed an almost perfect floor only to be let down by a creaking end joint? There is no easy fix and often a section of a floor needs to be removed and the whole floor re-sanded if the client is insistent.

The really confusing and unfortunate reason contractors and service providers get caught up in this problem is the gap between the Australian Standards for the manufacture of T&G Flooring (AS2796.1) and the various Guides to Standards and Tolerances published in each state and territory.

AS2796.1 (Timber – Hardwood – Sawn and milled products, Part 1: Product Specification) has quite detailed tolerances for the side profiling of both face fixed and secret nail profiled boards; but end joints are less specifically controlled. Generally, the 0.5mm mismatch tolerance is the standard used when assessing an end joint.

These tolerances have been in place for many years and work exceedingly well, with the dimensions of boards being one of the least reported problems in all ATFA reports on record (being less than 0.5% of all reports).



However, the various guides to standards and tolerances published around Australia have a statement that new floors should not squeak or creak in the first 2 years after installation.

## 15.6 Squeaking floors

Floors that consistently squeak by a person walking normally in a trafficable area within the first 24 months from handover are defective.

Fortunately for our NZ counterparts, their published guide states that new floors can be expected to creak and squeak occasionally at times (gold star for the people who published that). However, it also states that squeaks in floors caused by incorrect installation are defective, so some caution is still required.

Now this problem only presents itself on the odd occasion on floors installed over joists or battens, as the end joints on other installations are fully supported. However, as mentioned earlier, the remediation for this seemingly minor problem can be very costly and time consuming.

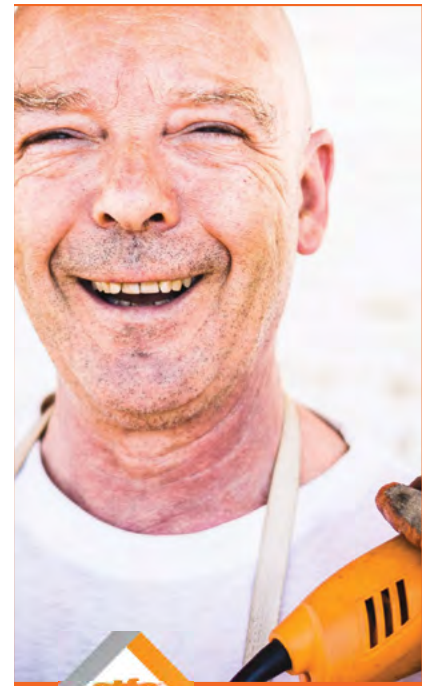
So, what can we do?

One solution is to make sure our installations are on fully supported subfloors – that is, installed over a sheet subfloor. Generally speaking, an installation over a sheet subfloor is a superior installation as it allows for more fixings and adhesive to be applied, and it also can provide some moderation to the rate moisture can affect the underside of the boards when used over joists.

In combination with recommending the use of a sheet subfloor system, we can manage the expectations of our clients who opt for battens or direct to joist installs. We can do this by informing them that some minor movement on end joints could be expected, possibly even explaining that the tolerances in machining are part of the Standard and therefore some movement is unavoidable.

However, there will be times when there is no budget or height to fit a sheet of plywood or particleboard between the joists/ battens and the flooring, exposing us to this end joint movement risk. In fact, Mint completed an installation in 2021 where this very problem raised its head – with 400m<sup>2</sup> of 130mm American White Oak over 8 ground floor apartments!

continued »



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The installation team noticed movement on many end joints and the works were halted while we investigated. The manufacturer of the boards attended site and all end joints were found to be within the tolerances (noting that American White Oak is not actually constrained by the Australian Standards anyway) and that there were no reasons (or time) to recall the boards. At this stage, we had installed 4 of the 8 units (or about 200m<sup>2</sup> of flooring).

To help mitigate the risk, I instructed the team to start applying PVA adhesive to the end joints of all boards for the remainder of the ground floor units.

The results 18 months down the road? We have attended site 7 times to remediate squeaking end joints on the first 4 units installed (with no PVA), with variable success and at considerable cost. We have had no claims at all lodged against the floors with PVA end joints. Not only that, but sunlight has also caused some shrinkage in all units, with units with the PVA end joints having no edge bonding as a result of the adhesive at all – noting that we did take care to ensure we did not extend the adhesive down the sides of the boards.

As a result of this simple and very effective risk mitigation, Mint Floors now has a standing instruction that ALL floors installed over joists or battens have a cross-linked PVA applied to all end joints. We have not had a single complaint raised on moving end joints since.

I have spoken to a number of installers, manufacturers and ATFA inspectors about this simple procedure and so far, have not had anyone raise any concerns regarding possible negative effects of this step – other than applying too much adhesive and having edge bonding develop adjacent to the end joints.

ATFA is constantly trying to test and document installation methodology and systems that can help the industry deliver more consistent, high-level results for our end users. To continue this development, we need to hear from contractors out in the field who are coming across new problems or finding new solutions.

So, if you have tried the PVA on the end joint system, or if you have other tips and tricks for us to test out, get in touch. Working together to deliver more consistent results boosts the reputation of our industry, leading to more sustainable work for everyone. 