Australian Hardwood Flooring Manufacturers

The End Matching Process

Ross Lakin, Development Manager, Parkside.

Hello again! This edition will focus on the process of **End Matching**. It may seem a relatively simple process; however, it does call for a number of very strict production systems, and if it is done incorrectly… well, the pending problems – mostly with laying – are time consuming and costly.

End matching is the process of machining a tongue and groove into the opposing ends of the flooring, which then allows for the pieces to be joined anywhere they meet without having to create a joint specifically over a joist. The benefits are significant as it greatly reduces waste, allows for faster installation and eliminates the need to dock a piece to length. Aesthetically, it creates a floor where joins are completely random and hides this 'lining up' of joins – which can appear as an unnatural looking system if the end joints all line up over the same joist line.

As a flooring manufacturer, we can put as much time and finances into our end matching system as we do our moulders – meaning to complete this process is not cheap nor is it easy. They have to be built into the production line, often taking up a large footprint if the system is high speed and can often be a bottle neck if they are not as fast as the moulder.

There are two types of systems used by small and large manufacturers. These are 'cross feed' systems and 'through feed' systems and depending on your daily output determines what machine type you would use.

The most common is the through feed system supplied by a variety of manufacturers. The Australian-made MPB machine is one I see used by many manufacturers; the Italian Friulmac machine and the Marinus systems are also very popular. No doubt there are others, and I mean no offence if I have not mentioned a brand you use or sell. The downside is they all go through a cycle to end match two opposing ends at a time – meaning the process can become a bottle neck, that they (the end matcher) then determine the feed speed of your moulder, not you or your available volume. The way to overcome this is by having two or three end matching systems all interconnected (which can be a problem in the transfer of material).

The upside, they have a much smaller footprint and are lower cost units individually. The tooling used are similar to planing heads set on a spindle and run at very High RPM.

Inside a typical through feed system

Cross feed systems are used by high volume manufacturers, easily running in excess of 80 to 100 plus meters per minute – where the end matcher has the capacity to handle this without slowing down the line. They are generally very large and expensive units and the last machine we installed was well over $1M supplied, installed and commissioned. There are a number of companies supplying cross feed systems – including OSI and Doucet from Canada, Friulmac from Italy, and there are still old Windsors and even one that Bunnings self-made in WA that was running when we took over the mill

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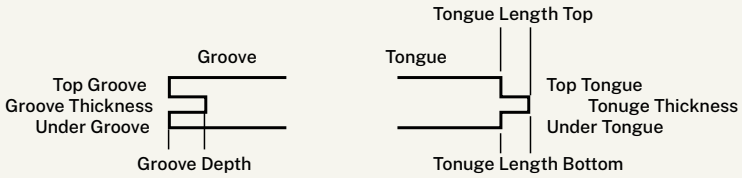
The End Matching Process. continued

at Manjimup/Greenbushes. Again, no offense to anyone using or selling another brand. The cross feed system allows for boards to be delivered into each lug and regardless of length is fed through at whatever LPM or lugs per minute you set it to, so for a simple hypothetical example – if every board you produce is 5m long and you are running at 35 LPM then effectively you can be capable of 35x5 MPM equalling a possible planer feed speed of 175 MPM. Now we don't run at those speeds, but you see why they will never be the bottle neck of a flooring production line. Most cross feed systems use saws to deliver the profile rather than profile heads.

OSI cross feed end matcher at Parkside Wondai Dry Mill

Most flooring manufacturers include this process as part of the Wood Machinest role to manage and set up including tool changes and monitoring; however, it can be another person who is switched on enough to understand this process. Size checks and the recording of the production run is also critical to maintaining the accuracy and tolerances allowed for – this is as important as the profile of the T&G itself.

End Match Check Sheets



Time	Groove Thickness 7MM	Under Groove 6MM	Top Groove 6MM	Groove Depth 6.9MM	Tongue Thickness 6.3MM	Under Tongue 6MM	Top Tongue 6.7MM	Tongue Length Top 7MM	Tongue Length Bottom 7.2MM
7.30									
8.00									
8.30									
9.00									
9.30									
10.00									
10.30									
11.00									
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End matcher size check sheets as used at Parkside

So, as you can see this is just another process that brings into people's homes the beautiful product we call flooring, and (I believe) the most sustainable, stunning and long lasting is Australian Native Hardwood Flooring in whatever species and grade you could hope for…

On the subject of grades and species, I will cover off on Grading in the next issue.

Until then, cheers

Ross