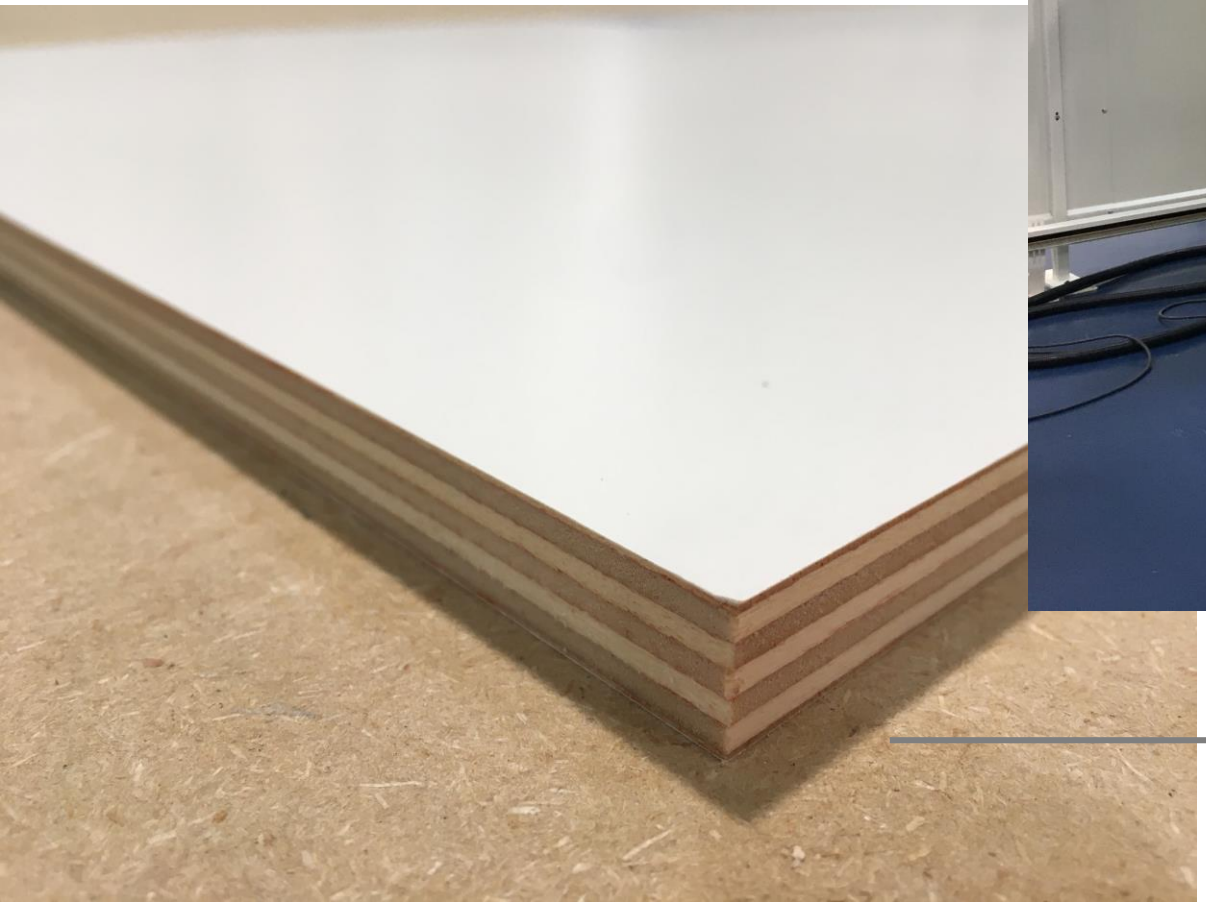
Nesting trials performed by M.GI. Tools – 30/10/2020

- Cutting tools designed & manufactured by M.GI. Tools
- Trials conducted on behalf of **RS Group** Slovenia with the cooperation of SCM
- Location - SCM Showroom Rimini, Italy
- Machine – Morbidelli x200

www.mgitools.it

Machine – Morbidelli x200



Material – 12mm thick Melamine Faced Plywood

The trial involved using 3 different PCD cutters.

Each cutter was fitted to a Thermo-grip holder. Secure and precise clamping is fundamental to good edge finish and extended tool-life.

These cutters are made with Heavy Metal bodies. They all have PCD plunging and 3mm tip heights.

1. Ø12 x 24 – Z3+3 – 20° compression shear
2. Ø12 x 24 – Z2+2 – 20° compression shear
3. Ø12 x 26 – Z1+1 – 54° compression shear

All cutters are balanced to G2.5 at 24.000 RPM.
This is standard procedure at M.GI.

Results, first tests using:

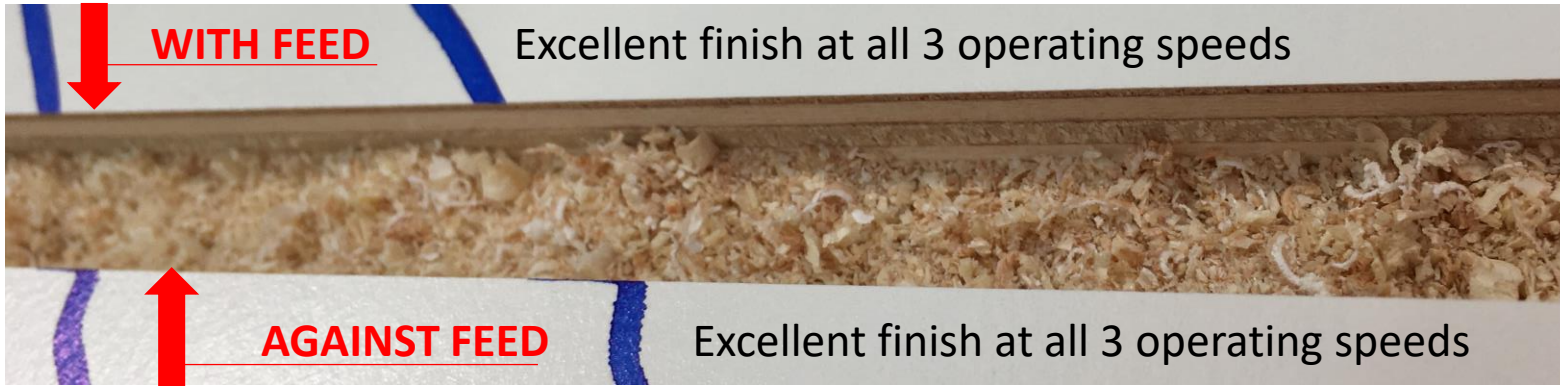
Ø12 x 24 – Z3+3 – 20°

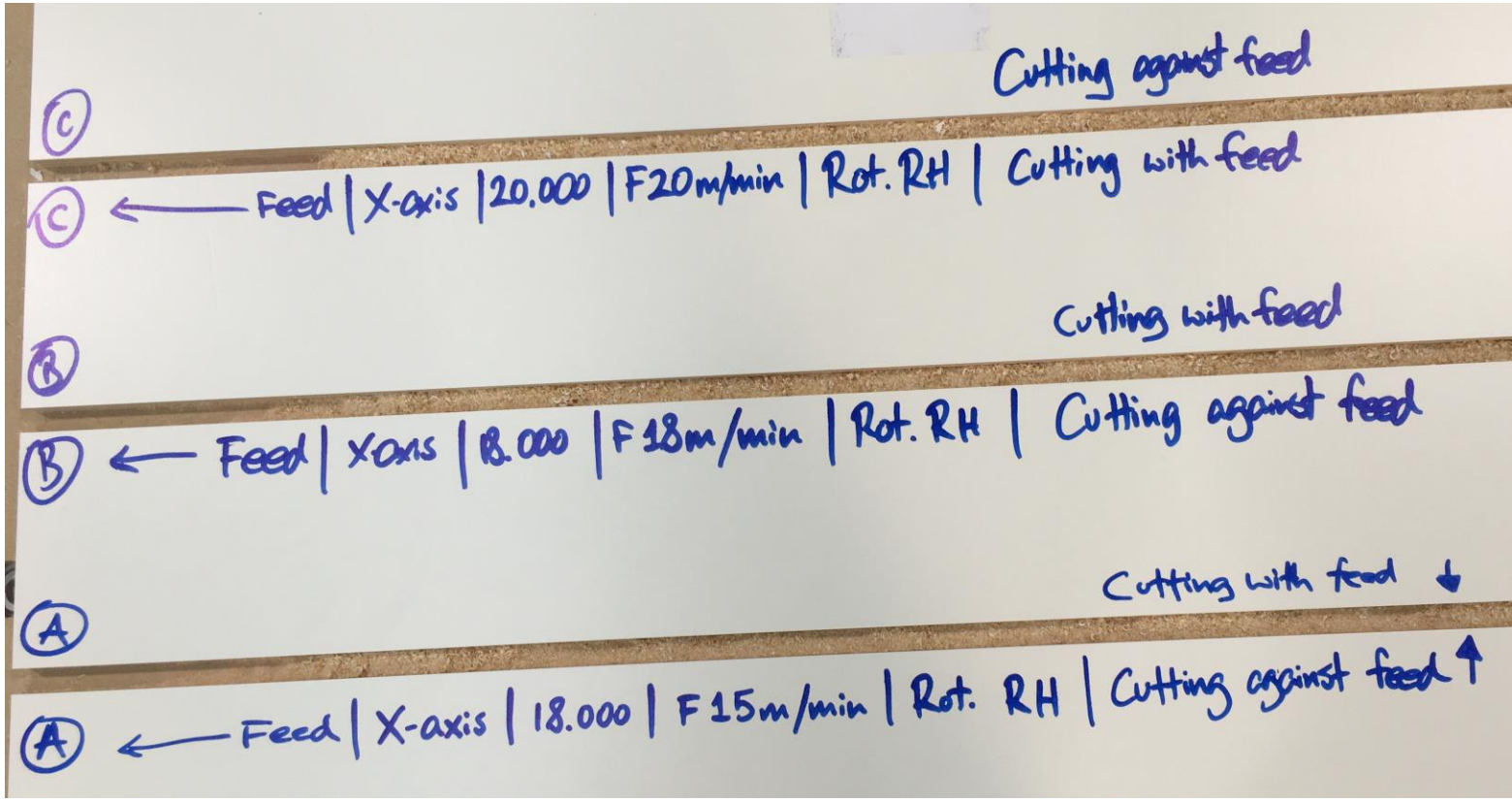
Common Chip Load: 0,33

C. 20.000 RPM @ 20m/min

B. 18.000 RPM @ 18m/min

A. 18.000 RPM @ 15m/min





Results, second tests using:

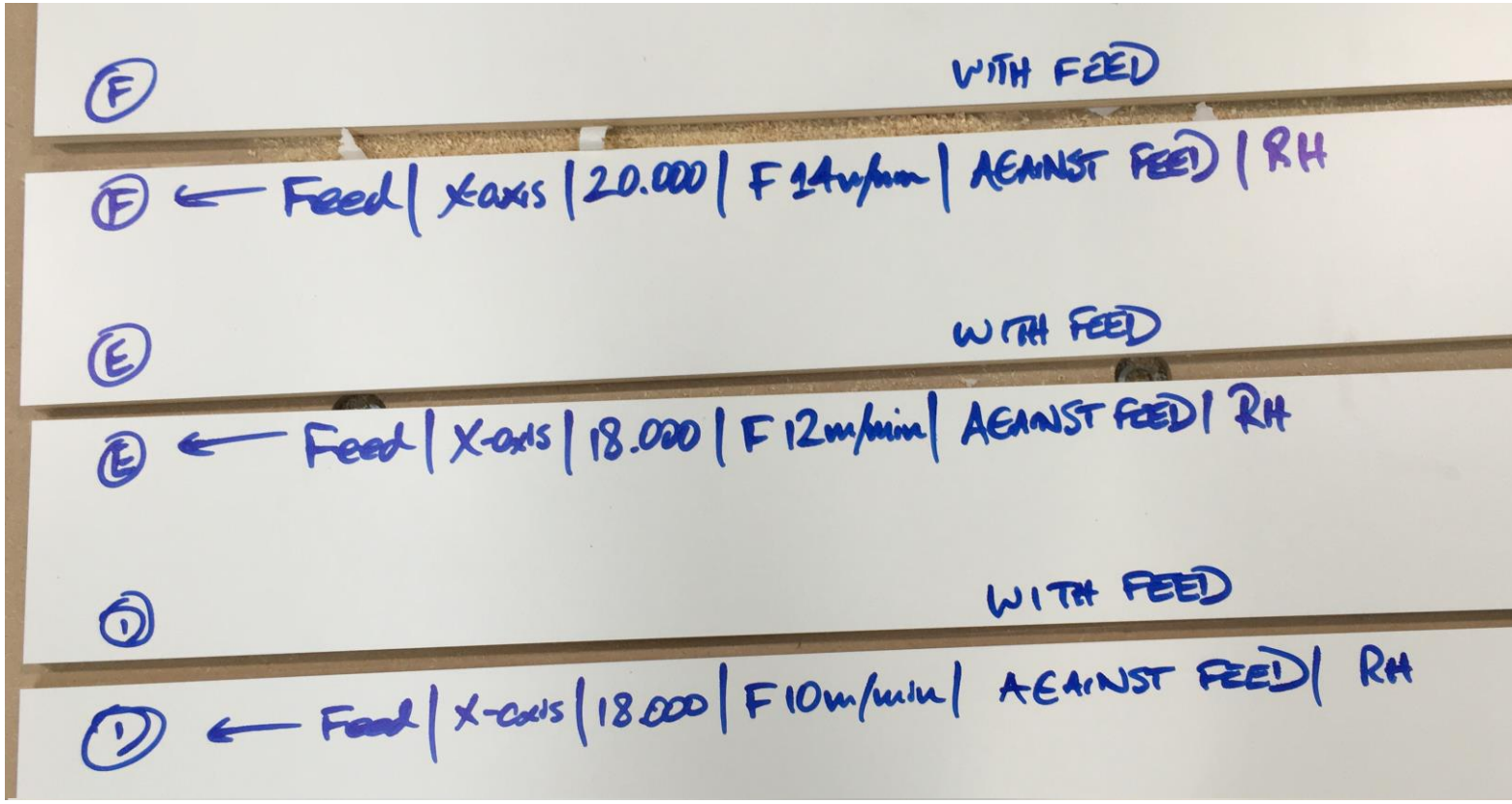
Ø12 x 24 – Z2+2 – 20°

Common Chip Load: 0,33

C. 20.000 RPM @ 14m/min

B. 18.000 RPM @ 12m/min

A. 18.000 RPM @ 10m/min



Results, third tests using:

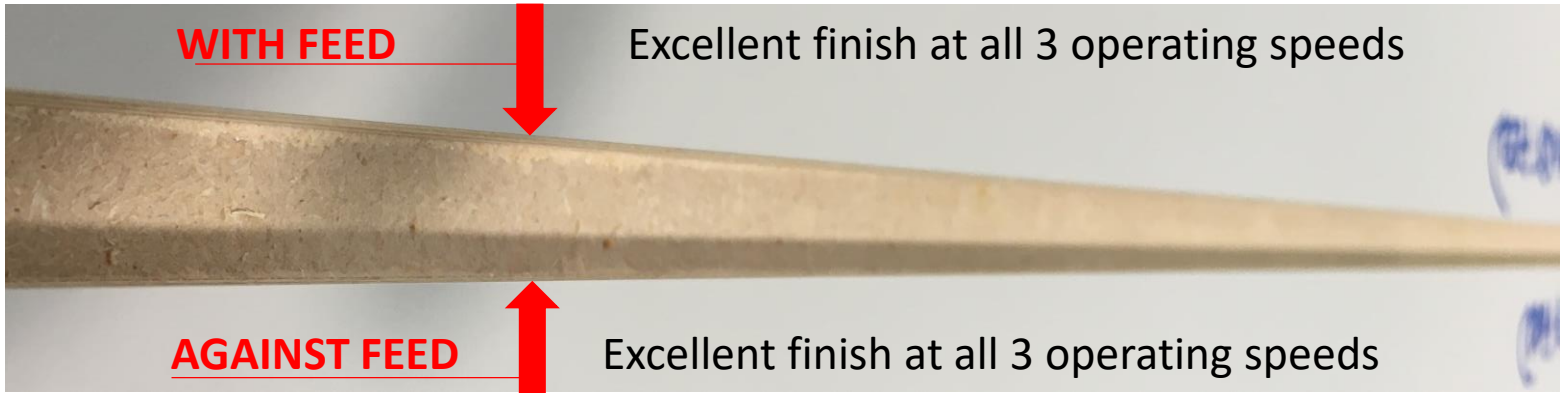
Ø12 x 26 – Z1+1 – 54°

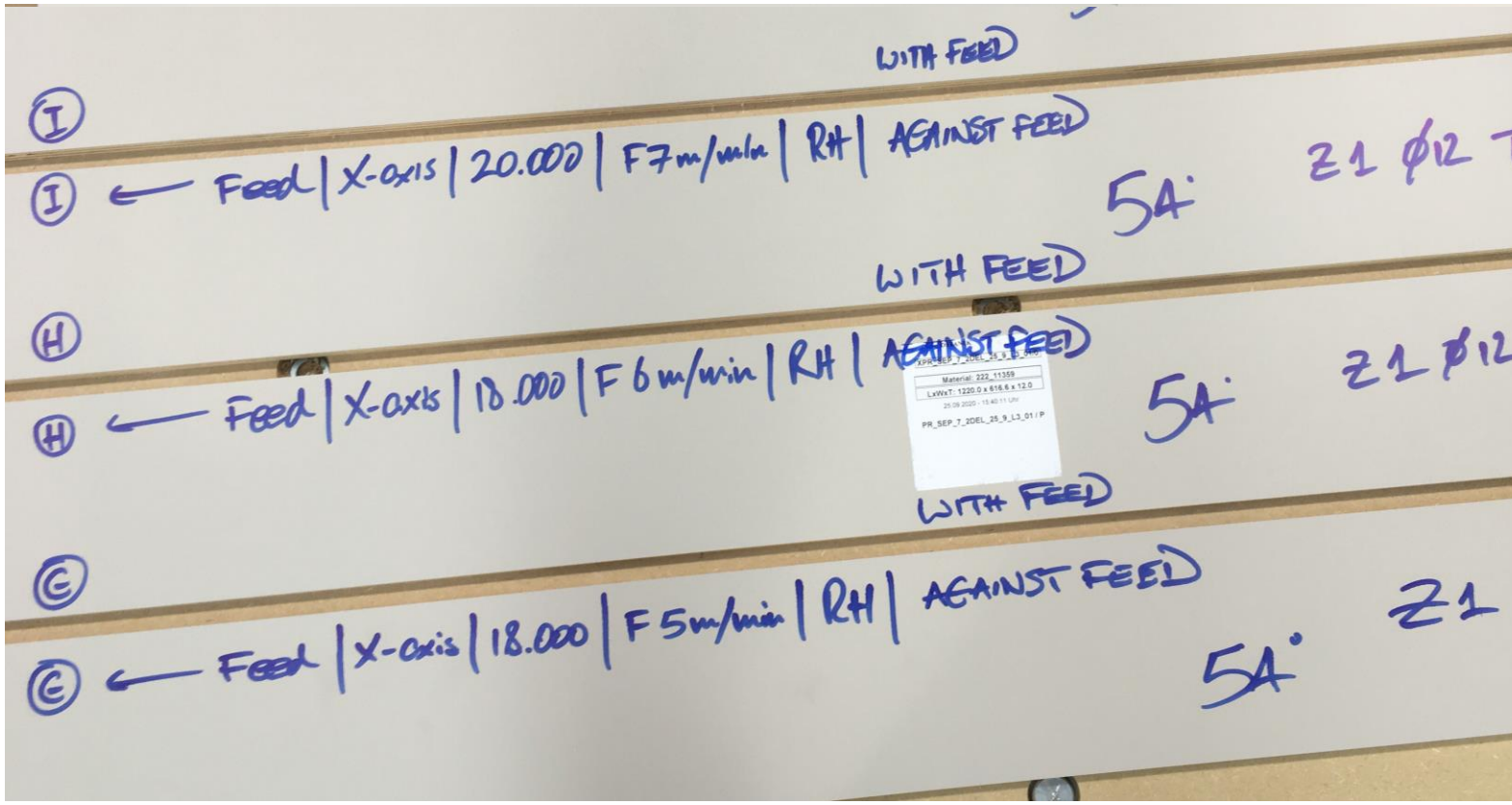
Common Chip Load: 0,33

C. 20.000 RPM @ 7m/min

B. 18.000 RPM @ 6m/min

A. 18.000 RPM @ 5m/min





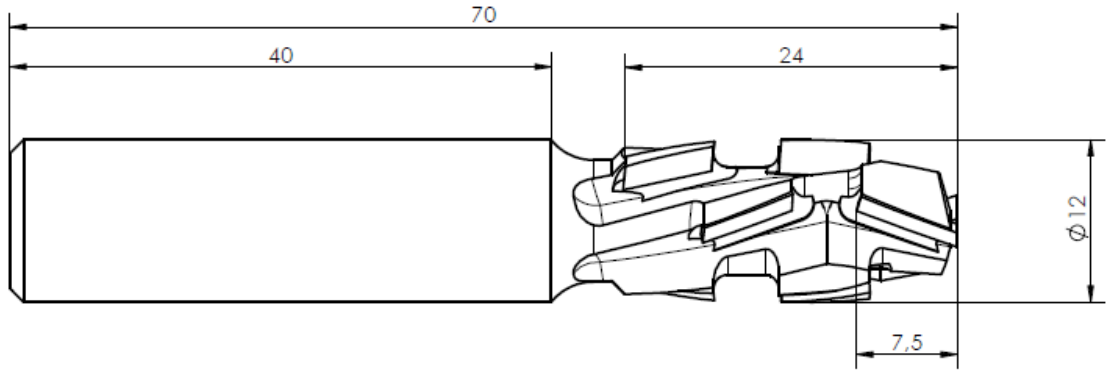
Useful information:

START-UP GIUDE 1.
- 12mm x 24mm Z3+3
- Nesting 12mm Plywood
- Desired Chip Load a for good finish 0,33
- RPM 18.000 | Feed 18m/min.

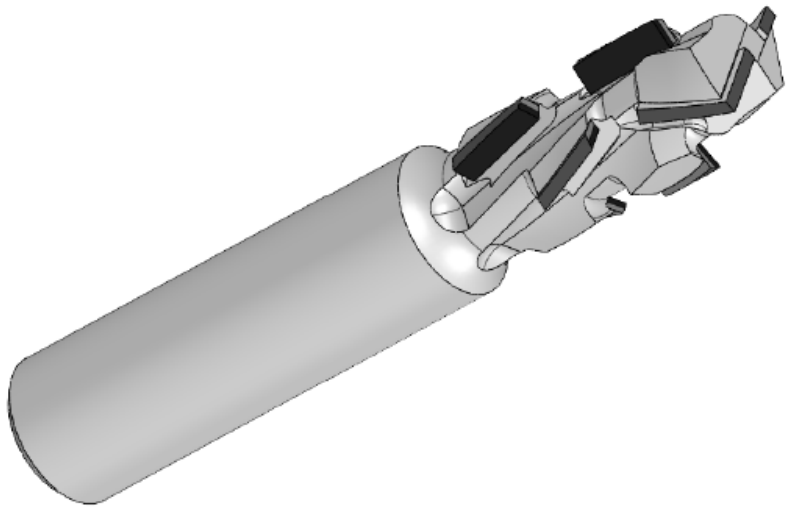
START-UP GIUDE 2.
- 12mm x 24mm Z2+2
- Nesting 12mm Plywood
- Desired Chip Load a for good finish 0,33
- RPM 18.000 | Feed 12m/min.

START-UP GIUDE 3.
- 12mm x 26mm Z1+1
- Nesting 12mm Plywood
- Desired Chip Load a for good finish 0,33
- RPM 18.000 | Feed 6m/min.

Useful information:



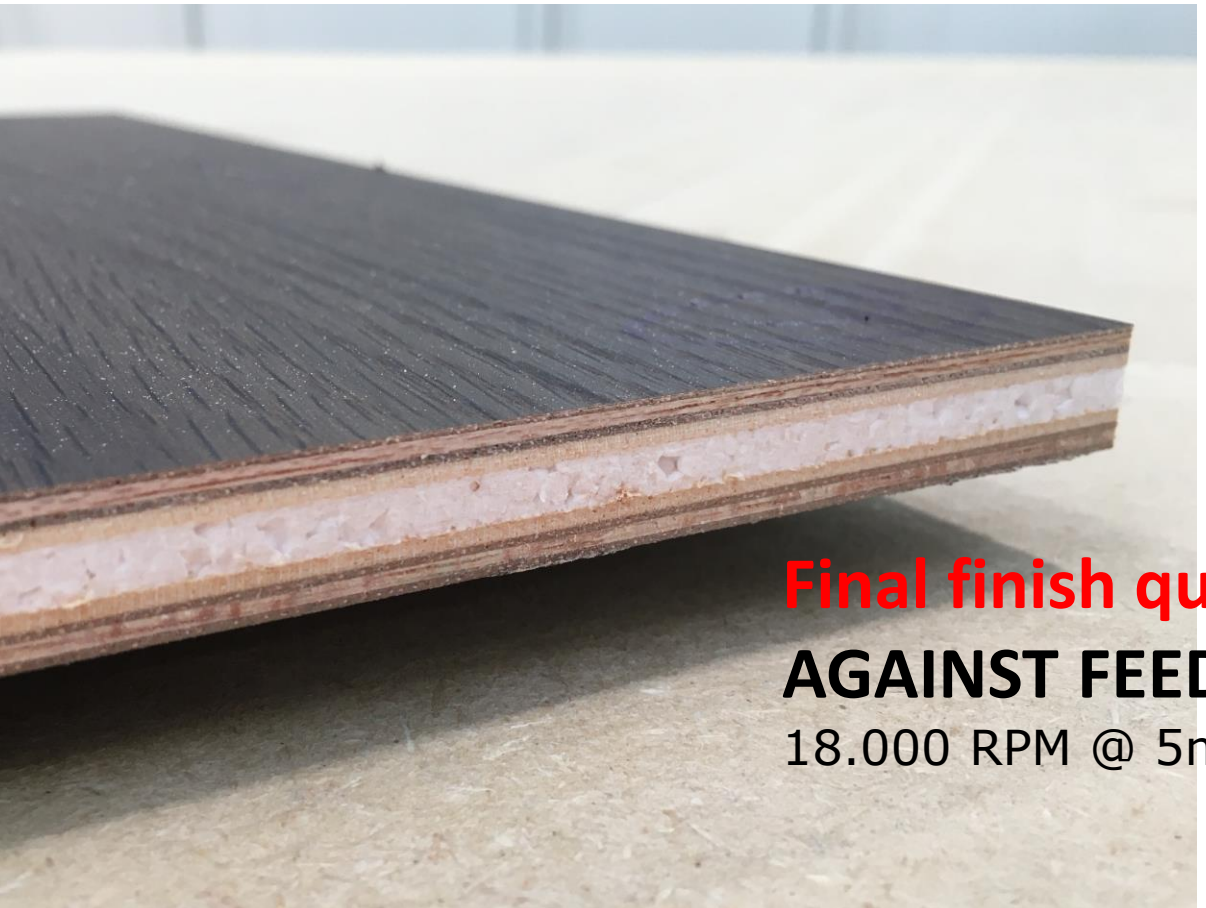
1. Ø12 x 24 – Z3+3 – 20° compression shear **(7,5mm positive)**
2. Ø12 x 24 – Z2+2 – 20° compression shear **(7,5mm positive)**
3. Ø12 x 26 – Z1+1 – 54° compression shear **(9,0mm positive)**



Additional trials

Material – 12mm thick Melamine Faced Plywood with polystyrene core

The polystyrene core benefits from a high shear angle tool, cutting against the feed.



Final finish quality

AGAINST FEED

18.000 RPM @ 5m/min

54°