Processing instructions

EGGER Compact Laminates

Product description EGGER Compact Laminates

EGGER Compact Laminates have a multilayer structure and consist of melamine resin impregnated decorative paper as surface layer and a fibrous and with curable resins impregnated core layer.

Processing instructions Compact Laminates

The following processing instructions are based upon different series of tests and the best results gained from these tests in cooperation with our partner Leitz GmbH & Co. KG

Leitz GmbH & Co. KG
www.leitz.at

Technical notes

When working with Compact Laminates, the following cutting speeds (vc) and feed per tooth (fz) values should be taken into account:

<table>
<thead>
<tr>
<th>Processing method</th>
<th>Cutting speed (vc)</th>
<th>Feed per tooth (fz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sawing</td>
<td>50 – 80 ($argent 60) m/s</td>
<td>0,02 – 0,05 mm</td>
</tr>
<tr>
<td>Milling</td>
<td>30 – 50 m/s</td>
<td>0,3 – 0,5 mm</td>
</tr>
<tr>
<td>Drilling</td>
<td>0,5 – 2,0 m/s</td>
<td>0,1 – 0,6 mm</td>
</tr>
</tbody>
</table>

The following formulas are to be used to calculate the cutting speed, feed per tooth and feed rate:

\[ vc = \frac{D \times n \times n}{60 \times 1000} \]

\( D \) – Tool diameter [mm] \( n \) – tool speed [min-1]

\[ fz = \frac{vf \times 1000}{n \times z} \]

\( vf \) – feed rate [m/min] \( n \) – Tool speed [min-1] \( z \) – number of teeth

\[ vf = \frac{fz \times n \times z}{1000} \]

\( fz \) – Feed per tooth [mm] \( n \) – Tool speed [min-1] \( z \) – number of teeth
Sawing

General
Please be aware of:

- Visible side (side with foil) facing upwards
- Choose the correct saw blade projection (see table)
- Adjust RPM and number of teeth according to the required feed rate
- The use of a scoring-circular saw on the underside is recommended in order to achieve cleaner cuts

The degree of entry and exit changes according to the saw blade projection and thus the quality of the cut also changes. If the upper edge is unclean, the saw blade should be moved higher. If the lower edge is unclean, the saw blade should be moved down.

Dependent upon the diameter (D) of the saw blade, the following table shows the suggested saw blade projections (Ü) for table saws and panel-sizing saws:

<table>
<thead>
<tr>
<th>Diameter (D) of circular saws [mm]</th>
<th>Projection Ü [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>approx 5-10</td>
</tr>
<tr>
<td>300</td>
<td></td>
</tr>
<tr>
<td>350</td>
<td></td>
</tr>
<tr>
<td>400</td>
<td></td>
</tr>
<tr>
<td>450</td>
<td></td>
</tr>
</tbody>
</table>

Saw blades with a higher number of teeth are recommended for better cutting quality. The suggested blade speed for disk saws is 60-90m/s.

Recommended saw-tooth shape

TR/TR (trapezoidal/trapezoidal)  FZ / TR (flat tooth/trapezoidal)

For processing both-sided glued compact laminate panels, a scoring sawblade is needed to avoid outbreaks at the bottom.
Sizing cuts with scoring saw - Excellent DP (FZ/TR)

For table saws and circular sawing machines for sizing, cross cutting and panel sizing with scoring saw.

**Technical Information**

Stable tool body tooth shape.

**Circular sawblade Diamaster PRO**

Tip height 4,5 mm

Number of teeth $Z$: 60

**Exemplary application parameter compact laminate panels**

Diameter $\varnothing$: 300 mm

RPM $n = 3200 \cdot 5100$ min$^{-1}$ (vc = 50 – 80 m/s)

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Sizing cuts with scoring saw - Premium (FZ/TR)

For table saws and circular sawing machines for sizing, cross cutting and panel sizing with/without scoring saw.

**Technical Information**

If the saw spindle is positioned below the workpiece, the cutting pressure presses the workpiece onto the table.

**Circular sawblade AS OptiCut**

Number of teeth $Z$: 72, 96, 108
Sizing cuts – wood derived materials – Excellent DP (FZ/TR)

For panel sizing systems with scoring saw and pressure beam.

**Technical Information**
Solid tool body tooth shape.
Tool body with vibration damping irregular tooth pitch.

**Circular sawblade**
Number of teeth $Z$: 60, 72
Diamaster PLUS design with 6.0 mm tip height.

Portable circular saws – End trimming cut (FZ/TR)

For cross cutting, trimming and cutting to length.

**Exemplary application parameter compact laminate panels:**
Diameter $\varnothing = 300$ mm
RPM $n = 3200 – 5100$ min$^{-1}$ ($v_c = 50 – 80$ m/s)

**Circular sawblade**
Number of teeth $Z$: 42, 48, 54, 56, 60, 64, 68, 80, 96
Panel processing

Edge processing – Jointing/milling cutter

For edge processing machines, copy shaping machines etc.

Technical Information
For jointing of workpiece edges with feed and against feed (jump cutting).
Shear angle of 40° enables for complex applications.
Asymmetric tip arrangement.

Jointing/milling cutter Diamaster PLUS:
Number of teeth $Z$: 4x3, 4x4, 4x6

Exemplary application parameter compact laminate panels:
Diameter $\phi = 125$ mm
Number of teeth $Z = 4$
RPM$_n = 4500 – 7500$ min$^{-1}$ ($v_c = 30 – 50$ m/s)

Jointing, rebating and bevelling – Jointing cutterhead

For spindle moulders and moulders, double end tenoners. Routers with/without CNC control.

Technical Information
For jointing, bevelling, rounding and profiling at the same time.
Cutterhead with tumblade knives and seatings for edging knives.

Exemplary application parameter compact laminate panels:
Diameter $\phi = 125$ mm
Number of teeth $Z = 2$
RPM$_n = 4500 – 7500$ min$^{-1}$ ($v_c = 30 – 50$ m/s)
Longitudinal-, width- and mitre joints – Profile cutterhead

For spindle moulders and moulders.

Technical Information
For glue joints along the grain and mitre joints. For 45° glue joint profiles along grain with precise positioning. Exact positioning of the material and for producing corner joints.

Exemplary application parameter compact laminate panels:
Diameter $\varnothing = 175$ mm
Number of teeth $Z = 4$
RPM $n = 3000 – 5400 \text{min}^{-1}$ ($vc = 30 – 50 \text{ m/s}$)

Profile adjustment
Height adjustment by profiling the workpiece flat on the table and vertical against the fence.
Profile height PH 8,00 mm
Correct adjustment, if dimension A is the same as dimension B.
Formula: $A(B) = (HD-PH)/2$
Milling

**Portable router – Bevel cutter**

For portable routers.

**Technical Information**

For bevelling workpiece edges. Ball bearing guide ring is arranged on the bottom to enable the use with template or guided by the workpiece edge.

RPMₙ = 18000 – 27000 min⁻¹

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**Sizing and grooving - Spiral roughing/finishing router cutter Marathon**

For overhead routers with/without CNC control, machining centres, special routers with spindles for mounting shank tools.

**Technical Information**

Router cutter for sizing and grooving in roughing/finishing quality.

Feed speed: \(vf = 4 - 8\) m/min

RPMₙ max. = 2400 min⁻¹

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**Sizing and grooving - Router cutter Diamaster Plus**

For overhead routers with/without CNC control, machining centres, special routers with spindles for mounting shank tools.

**Technical Information**

For sizing and grooving. For tear free cut edges on both sides. Cutting edges with alternate shear angle and tungsten carbide plunging tip.

Feed speed: \(vf = 2 - 8\) m/min

RPMₙ = 16000 - 24000 min⁻¹
**Sizing and grooving – Router Cutter Diamaster Plus**

For overhead routers with/without CNC control, machining centres, special routers with spindles for mounting shank tools.

**Technical Information**

Router cutter for sizing and grooving with stepless cut.

Negative cutting edge shear angles during grooving for tear free edges and to support the clamping of smaller parts.

RPM\(n = 12000 \cdot 18000 \text{ min}^{-1}\)

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**Profiling – Diamond tipped profile router with shrink fit arbor**

For overhead routers with/without CNC control, machining centres, special routers with spindles for mounting shank tools.

**Technical Information**

Ramp plunging and axial plunging possible with profile router with shrink fit arbor and plunging tip.

Feed speed: \(v_f = 4 \cdot 8 \text{ m/min}\)

RPM\(n = 18000 \cdot 24000 \text{ min}^{-1}\)

RPM\(\text{max: } n \text{ max. } = 30000 \text{ min}^{-1}\)
Drilling

Dowel drilling Shank 10 mm HW solid
For point-to-point drilling machines, through feed drilling machines, CNC machining centres, hinge boring machines, multi spindle units.

Technical Information
For drilling blind holes, especially dowel holes in furniture. Suitable for drilling tear free blind holes in visible areas. Spur geometry with high shear cut.

Exemplary application parameter compact laminate panels:
- Diameter ø = 5 mm
- Feed speed \( v_f = 1 \text{ } 1.5 \text{ m/min} \)
- \( \text{RPM} \times n = 3000 \text{ – } 4500 \text{ min}^{-1} \)

Twist drills – HW – Solid Z 2
For point-to-point drilling machines, through feed drilling machines, CNC machining centres, hinge boring machines, multi spindle units.

Technical Information
For multi purpose drilling of blind holes and through holes.
HW-solid, Z2

Exemplary application parameter compact laminate panels:
- Diameter ø = 5 mm
- Feed speed \( v_f = 1 \text{ } 1.5 \text{ m/min} \)
- \( \text{RPM} \times n = 3000 \text{ – } 4500 \text{ min}^{-1} \)

Countersinker – Shank 10 mm
For multi spindle units, vertical boring machine, potable drills.

Technical Information
To countersink holes.
Countersink 90º Z 3 HW solid
\( \text{RPM} \times n = 1000 \text{ – } 2000 \text{ min}^{-1} \)
Key to pictograms

- Sawing, plunge cut
- Scoring, hogging
- Profiling
- Carving
- Manual tool
- Spindle with anti-twist keyway
- Aligned tool base
- High-alloyed tool steel
- Double hogging
- Profiling tongue and groove
- Grooving, sizing
- Solid metal tool
- Spindle with anti-twist hexagon
- High-speed steel
- Sawing along grain
- Hogging, folding
- Planing
- Grooving, horizontal and vertical
- Heavy Special body alloy
- Hydro clamping system - open
- Hydro, Doo Bi-axial (diagonal) clamping
- Special body alloy
- Hydro clamping system - closed
- Tungsten carbide
- Sawing, universal
- Edge trimming
- Drilling, blind holes
- Cutting, shaping
- Inter-changeable knifes
- Hydro clamping system - open
- Hydro clamping system - closed
- Poly-crystalline diamond (PCD)
- Sawing, all sizes
- Profiling, profiling
- Jointing
- Light alloy body
- Hydro, Doo Bi-axial (diagonal) clamping
- Mechanical clamping, reversible
- Marathon Carbide metal coating
- Sawing, honeycomb panels
- Step drilling
- Beveling
- Centrifugal clamping, reversible
- Shrink-fit clamping
- Diamond coating
- Sawing, honeycomb panels
- Countersinking
- Panel raising
- Mechanical knife clamping, non-adjustable
- Quick Quick clamping system
- Sawing, honeycomb panels
- Cody shaping
- Slotting
- Profiling
- Mechanical knife clamping, adjustable serrated
- Rehardenable cutting face
- Sawing, transparent plastic
- Reaming
- Spiral boring
- Profiling joints
- Mechanical knife clamping adjustable plane
- Rehardenable clearance face
- Sawing, solid transparent plastic
- Beveling
- Non-axial boring
- Mortising
- Mechanical knife clamping, re-sharpenable and constant diameter
- Low noise
- Sawing, top and bottom
- Panel raising
- Plug cutting
- Mechanical feed
- Spindle without past protection
- Optimised chip flow
MEHR AUS HOLZ.

Qualitätsmanagement ISO 9001