

Technical leaflet

The edging of deep textures



Processing

Board materials, laminates as well as composite boards with deep textures can be processed on commercially available woodworking machines. However, the edge processing of these board materials requires accurate adjustment of system settings, specifically on the edge finishing units. Depending upon the system specifications, quality requirements or operational understanding it may be necessary to finish the edge manually.

Texture geometry

The texture geometry (ref. Figure 1) features alternating raised areas and depressions. The finishing units must be adjusted to the raised areas (texture elevations) to prevent damaging the surface of the board material. Due to this adjustment, as well as the texture-related alternation between "mountain and valley", there is an edge protrusion in the "valley" of the texture (ref. Figure 2) This protrusion in most cases is saturated with adhesive due to the edge location. Due to the process, this edge protrusion can't be avoided but adjustments can be made to reduce it. Proceed to remove as much adhesive as possible and round the edge slightly to reduce sharpness.



Fig. 1 – Texture geometry –



Fig. 2 – Edge protrusion –

Adhesive

The amount of adhesive applied should be the minimum required needed in effort to reduce excess and rapid dispersion. The use of colored adhesives is recommended and proven to be a useful visual tool. Also, the use of release agents and coolants is highly recommended. Any adhesive residue remaining on the board surface after edging should be removed with a suitable cleaning agent promptly. Adhesive residue remaining on components for too long can lead to irremovable soiling of the components. Depending on the type of adhesive used blocking can occur within a stacked tower and eventually causing irreparable damage.

Adhesive selection

Property	EVA unfilled	EVA filled	PUR unfilled	PUR filled
Adhesiveness	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
Quantity to be applied	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
Cooling behaviour	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
Lubrication behaviour	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
Cleaning in machine	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
Manual cleaning	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★

- ★ ★ ★ conditionally suitable
- ★ ★ ★ suitable
- ★ ★ ★ highly suitable

Finishing units

Edge finishing units such as tracing, flush milling, draw blades and cleaning discs are typically standard components of the system. The equipment varies depending on the manufacturer and year of manufacture, so only general statements can be made. In principle, scanning units are used (ref. Figures 3,4,5) to achieve optimum finishing as well as compensate for product and system tolerances. Similarly, the scanning path and feed rate of the units also have an influence on the subsequent milling result. If the units for processing the top and bottom sides of the board are mounted on the same support, it is possible that the vibration when scanning the top side will also affect the quality of the edge processing on the bottom side. This can be reduced by decreasing the scanning path as well as the feed rate.

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Fig. 3 – Milling bit –



Fig. 4 – Draw blade –

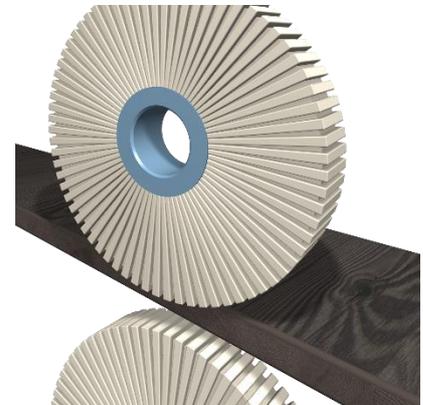


Fig. 5 – Cleaning brush –

Scanning

Scanning rollers

In most cases, the upper scanning of the work pieces is done by means of scanning rollers as they have proven their worth over the years. The diameter of the scanning rollers varies from 70 to 225 mm, and ranges from single scanning rollers to triple scanning rollers. The diameter of a scanning roller is vital for good milling results with deep textures. A large scanning roller diameter provides wider "scanning roller support" and therefore leads to a better milling result. Smaller diameters of the scanning rollers inevitably result in smaller "scanning roller support" and thus produce uneven milling. The scanning of the finishing units is transferred to the wavy course of the surface texture and is thus reflected in the edge. Particularly when machining across the texture, the result is an uneven edge milling pattern. The smaller the scanning rollers, the bigger the impact. A 1:1 scanning of the texture-related depressions by means of scanning rollers is not possible, i.e. currently there is no technical solution for an edge milled parallel to the texture. Care must be taken to set the scanning rollers accurately so that the surface is not damaged by the finishing units. Damage to the surface leads to greater sensitivity to dirt. Similarly, the resistance to water vapour or moisture deteriorates. In addition, the base paper becomes visible (ref. Figure 6)

Scan shoe

Scan shoes are often used with draw blades. The large scanning surface makes it possible to bridge the texture-related differences in height. This results in the draw blade being guided over the edge radius smoothly and evenly. The use of lubricants is recommended to minimize friction between the scan shoe and the surface of the board as well as preventing associated shining.



Fig. 6 – Damaged surface layer –

Cleaning units

Edge protrusions in the area of the texture depressions lead to adhesive residue remaining on the protruding edge. Despite the use of release and cleaning agents, the use of cleaning brushes can brush the excess adhesive into the surface and/or leave it on the narrow surface of the edge. In this case, the application quantity of the adhesive, as well as the correct adjustment of the cleaning agent application should be checked. The application quantity of the release and cleaning agents must be selected so that the cleaning units are permanently moistened. Dry cleaning brushes tend to get warm and heat up the adhesive on the board surface, which in turn causes the adhesive to smear. Sisal brushes have proven themselves in use, a lower speed can be advantageous. The setting of the cleaning units must be selected so that the adhesive is removed thoroughly but the board surface is not damaged by polishing up the surface texture (ref. Figures 7,8,9).



Fig. 7 – Tilted approx. 3° –



Fig. 8 – Approx. 10° outward –

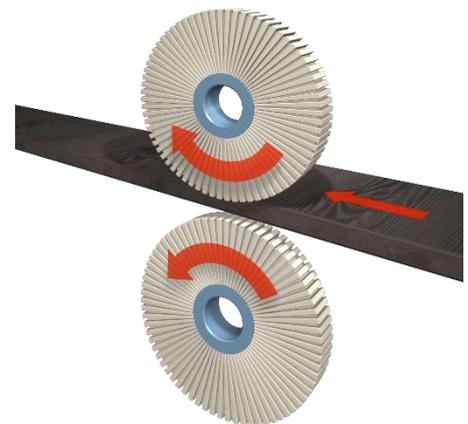


Fig. 9 – Direction of rotation –

Manual finishing

Edge finishing and cleaning units often reach their technical limits with deep textures. In order to achieve the best possible edge finish manual finishing using appropriate cleaning agents and suitable brushes is recommended. This is especially effective when edging across the texture direction. Manual finishing should be done promptly after the edge has been applied. Subsequent finishing of the edge radius with a hardwood block helps to soften and smooth possible sharp edge protrusions.

For further information on cleaning our surfaces, please refer to the technical data sheet:
TL EGGER Cleaning and care instructions en

Important notes on processing deep structures with protective film

- The use of release agents in edge banding machines is not possible/necessary due to the protective film.
- The colour of the adhesive is ideally transparent or the same as the decor.
- The amount of adhesive must be adjusted => the more adhesive escapes, the more difficult it is to clean the structure depths
- Fine adjustment of the processing units is necessary. In particular, the profile scraper must be set correspondingly deeper than the tracing in relation to the protective film.
- In the best case, the flat scraper should be set so that the protective film is cut back 1-2mm. This allows the escaped adhesive to be removed with the cleaning brushes.
- Tools with an appropriate clearance angle are recommended.
- Manual reworking and cleaning may be necessary.
- Especially when using PU adhesives, the adhesive remaining on the surface must be removed soon after edging with a suitable cleaning agent.

Checklist

Processing step	Further information	Recommendation	Please note
Adhesive selection	The choice of adhesive should be made according to technical feasibility and the area of application.	An EVA-based adhesive is easier to remove from the surface afterwards. A PUR adhesive offers very good strength even with a smaller application quantity. With unfilled adhesives, a thinner joint is achieved.	Compared to PUR, an EVA adhesive must be applied thicker, which can lead to a higher tendency to smear. In contrast, leaking PUR adhesive must be removed immediately after edging so that it does not dry on the board surface and damage it.
Finishing units	Milling bits	The milling bits should be set so that the edge is milled off 0.2 mm above the texture tips, so that there is still enough material for the further finishing units.	Care must be taken not to set the milling bits too deep, because if the board surface is damaged, it becomes susceptible to external influences such as water vapour, etc.
	Draw blade	The optimum thickness of a draw blade is between 0.1 and 0.2 mm;	A draw blade set too low can also

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		the best result is achieved at this setting.	damage the surface and make it vulnerable. A too thick draw blade chip can lead to "chatter marks" and/or stress whitening.
	Cleaning brush	The standard direction of rotation alignment of the cleaning brush is described in Fig. 7-9 (synchronisation). Processing tests have shown that the alignment in the opposite direction leads to a better joint pattern. Cleaning brushes made of sisal are particularly suitable due to their brushing characteristics.	If the pressure of the cleaning brushes is too high, the adhesive will heat up again, which in turn can cause the adhesive to smear on the surface of the board. Attention should also be paid that the cleaning brushes do not run dry to prevent heat generation as far as possible and prevents the adhesive from sticking to the brush..
Manual finishing	To achieve the cleanest possible joint pattern, it is recommended to clean the components manually after edging.	Cotton cloths (no microfiber) in combination with a suitable cleaning agent are best (see cleaning recommendations or contact your supplier). Aids such as a cleaning brush (bristles of medium hardness), as well as a hardwood block for subsequent finishing have proven their worth.	Make sure that the surface of the board is not damaged or polished up. The use of sharp-edged tools is not recommended. Unsuitable cleaning agents can damage the board surface and the edge material.

Provisional note:

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