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Processing instruction

EGGER PMMA Edge Banding



EGGER PMMA Edge Banding is a thermoplastic edge banding product with protective and aesthetic properties for finishing narrow areas on wood-based materials. EGGER PMMA Edge Banding is made of Polymethylmethacrylate. A universal bonding agent (primer) is applied to the reverse.

Uses / Areas of Application

EGGER PMMA Edge Banding is used to finish narrow areas of laminated wood-based materials such as chipboard, MDF, HDF, and lightweight boards and provides the perfect finishing touch for all decorative surfaces. It can be used in a wide variety of areas: furniture for kitchens, bathrooms, offices and bedrooms, living rooms, exhibition builds, and shopfitting systems. In addition to regular use, EGGER PMMA Edge Banding is suitable for finishing individually designed furniture components.



Processing

EGGER PMMA Edge Banding can be processed on conventional edge banding machines using hot-melt glue systems. The individual processing steps such as gluing, trimming, milling, scraping and buffing are all quite straightforward. EGGER PMMA Edge Banding is not suitable for cold glue activation processes using white PVA glue.

Adhesive / Adhesive application

The primer coating on EGGER PMMA Edge Banding is configured for use with EVA, PA, APAO and PUR hot-melt adhesives. Contact adhesives containing solvents must not be used. A highly heat-resistant glue should be used if the product is likely to be



exposed to high temperatures, e.g. in the kitchen or in shipping containers. Polyurethane hot-melt adhesives are particularly suitable for use in damp conditions.

Always follow the instructions of the respective adhesive supplier. The amount of glue required varies depending on the type of adhesive (see manufacturer's specifications), the board density, the edge banding material and the feed rate.

The adhesive should be applied evenly and in sufficient quantity so that small beads can be pressed out under the edge banding and any gaps in between the wood chips are filled. It is essential that the pre-melter contains a sufficient amount of adhesive to ensure that both, the glue spread and the temperature remains constant. Due to the precise pre-tensioning and plane-parallelism of EGGER PMMA Edge Banding, a tight, almost invisible seam is achieved. Pre-tensioning also ensures optimum bonding by taking up any excess glue at midpoint on the back of the edge banding and the anchor points of the glue to the chipboard.

Processing temperature

The work should be carried out at room temperature. Prior to processing, the edge banding tapes and substrates should be conditioned at normal room temperature (68°F to 77°F). If the edge banding or boards are too cold (e.g. due to storage in unheated areas), the hot-melt adhesive applied will set before the edge banding is attached. Therefore, conditioning is essential and draughts should also be avoided. The processing temperature for the adhesive varies between 194°F (90°C) and 446°F (230°C) depending on the type of adhesive. Please refer to the individual manufacturer's specifications for the relevant processing temperatures. When measuring the adhesive temperature, display errors can occur and the temperature measured may differ from the actual temperature on the application roller. It is recommended that the temperature be taken on the application roller.

Wood moisture

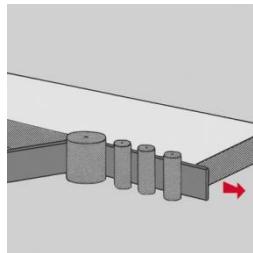
The optimum wood moisture for processing board material is between 7 and 10%.

Feed rate

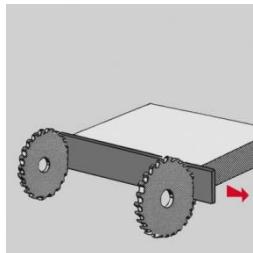
The feed rate is defined by the processing characteristics of the hot-melt adhesive and the method of application (spray nozzle or roller). Please follow the adhesive supplier's instructions. If the feed rate is too high, the hot-melt adhesive may become stringy in consistency, preventing full saturation of the board material. Furthermore, this can cause the application roller to jump and may lead to chatter marks during the subsequent edge banding milling process. If the feed rate is too low, the interval between adhesive glue application and affixing of the edge banding tape is too long. In this case, the temperature falls below the necessary processing temperature and the adhesive will harden before the two surfaces are joined.



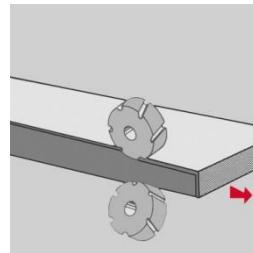
Edgebander processing sequence



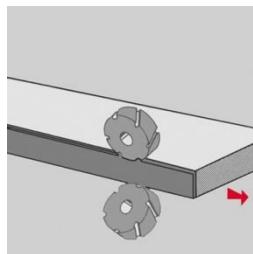
Gluing



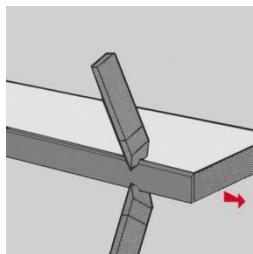
End trimming



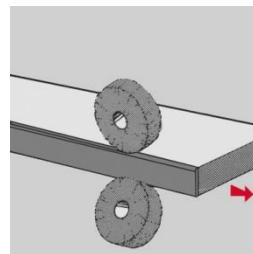
Pre-milling: Pre-mill head at 15 - 20° angle



Radii / bevel milling



Scraper Finishing



Buffing

Pressure rollers

Whilst taking into account the specification of the machine, to achieve an optimum seam appearance there must be an adequate number of pressure rollers, which are adjusted to the correct setting.

End trimming

The end trim cut is performed using standard set saw blades with pointed teeth. Saw blades with alternate tooth sets are only of limited use as they can cause splintering, particularly when working with thin edge banding.

Milling

Four- to six-blade cutters with a diameter of approx. 2.75 inch (70 mm) and a rotational speed of between 12,000 and 18,000 rpm should be used. The exact choice depends on the characteristics of the cutter and the machine. Blunt tools running at inappropriate speeds can damage the edge banding. If any smears occur, reduce the speed of the milling cutter or increase the feed rate. To facilitate waste extraction, pre-milling can be carried out in up-milling mode. Precision milling can be performed in down-milling mode.

Scraper processing

As the PMMA material tends to fade in color after scraping, the scraper blade should not exceed 0.004 - 0.008 inch (0.1 - 0.2 mm). Milling tools with a high true running accuracy will produce the required milling accuracy ("without blade marks"). Diamond-tipped milling tools have proved to be particularly effective. A hot-air unit can be used to further optimize the scraper processing, particularly with critical colors.

Buffing

EGGER PMMA Edge Banding can easily be polished in a radius with buffing wheels. Any color fading resulting from the scraper finishing can simply be polished away using buffing wheels. Furthermore, buffing wheels remove possible contamination (adhesive residue) from the surfaces and/or deburr the edge banding. Adhesive glue remnants can easily be removed using electronically controlled separating agent spray units; this also reduces scraper blade wear.

Extraction

Thermoplastic remnants can build-up static charge and become attracted to material and machine components. Compared to other thermoplastic raw materials, the static charge of PMMA is very low. A suction power of approx. 2.5 m³/s is therefore required.

Machine center processing

EGGER PMMA Edge Banding is also suitable for radii processing in a machine center. A thorough heat penetration of the material is essential during processing. This can be achieved via an outside infrared heater or an inside hot air "shower". During the stationary process, many machine manufacturers use steel adhesive application rollers. Unlike in the continuous process, the glue is usually applied on the edge banding (exception: Biesse, SCM). PMMA edge bandings are characterized by their backprinted decor image and the resulting depth effect. When the adhesive is applied using a steel adhesive application roller, there is a risk of scratching the decor image of the edge banding on the back side. It is therefore recommended to use a rubberized adhesive application roller as well as edge banding feed rolls. For additional information please contact your machine manufacturer.

Manual processing

Manual processing of EGGER PMMA Edge Banding can easily be carried out using a glue press clamps or edge press. However, this process requires the use of special adhesives, such as two component dispersion adhesives, contact adhesives, glues suitable for lacquered or varnished surfaces, or PU adhesives. The relevant types and guideline values should be obtained from the respective manufacturer of the adhesives. Alternatively, edge bandings can be processed using small edge banding units or manual hand-held edge banding devices.



Edge banding with protective foil

It is recommended to use regular release, cooling, and cleaning agents when processing edge bandings that are equipped with protective peel-clean foil. These may not contain solvents or alcoholic substances. The release agent may be sprayed onto the first pressure roll or directly onto the boards and edge banding surface after covering the edge banding. Should the protective foil peel off when processing on a continuous edgebander, it is recommended to check and clean the copy shoes, as well as to consider the use of a lubricant to minimize friction between the protective foil and the copy shoe. If a lubricant is used on films with imprint, the suitability should be checked in advance.

To protect the edge banding tape from external influences for as long as possible, it is recommended to remove the protective foil not until after the furniture has been assembled.

To protect and maintain the UV resistance of the protective foil, the original packing should be used when storing the edge banding tape over a period of several months. The selected protective peel-clean foil can be recycled and disposed of under observation of official rules and regulations.

Cleaning

EGGER PMMA Edge Banding is easy to clean using cleaning agents designed for plastic surfaces. The use of solvents or alcoholic substances (e.g., release, antistatic, cooling or cleaning agents) is not recommended, as they may damage the surface and lead to stress cracks in the material.

Handling with waste

Waste from EGGER PMMA Edge Banding may be disposed of as residual waste. If the wood leftovers obtained are picked up by a disposal company for purposes of further utilization, only a small share is usually allowed to be wood-based materials with edge bandings. It should be agreed with the disposal company how high the share of plastic edge banding and other so-called impurities may be.

The thermal recycling of plastic edge banding is also possible as a rule, and reasonable on the basis of the high heating potential of the leftovers. The process produces no chlorine compounds. EGGER PMMA Edge Banding may be recycled thermally together with chip leftovers in approved facilities. As a rule, wood-based materials with edge banding resulting from production may also be thermally recycled. There is no need for time-consuming leftovers separation and/or edge banding removal.

Health risk due to dust formation

Dust may be generated during processing. There is a risk of sensitization of the skin and respiratory tract. Depending on the processing and the particle size, especially when inhaling dust, there may be further health risks.

The formation of dust must be taken into account when assessing risks in the workplace.

In particular in the case of machining processes (e.g. sawing, planning, milling), an effective extraction system must be used in accordance with the applicable health and safety regulations. If there is no adequate suction, suitable respiratory protection must be worn.



Fire and explosion hazard

Dust generated during processing can lead to fire and explosion hazards. Safety and fire protection regulations must be observed.

Processing problems

Error	Cause	Measures
1. Edge banding can easily be removed by hand. Hot-melt adhesive remains on the chipboard. The grid structure of the adhesive application roller is visible.	<ul style="list-style-type: none"> ▪ Ambient temperature too low, or draught in the area between the coating of thermoplastic glue and the pressure roller ▪ Edge banding material is too cold (outdoor storage) or lack of conditioning ▪ Hot-melt adhesive temperature too low ▪ Feed rate too low ▪ Contact pressure of application rollers too low ▪ Not enough adhesive applied 	<ul style="list-style-type: none"> ▪ Increase room temperature, avoid draught ▪ Warm up edge banding material ▪ Increase hot-melt adhesive temperature ▪ Increase feed rate ▪ Increase contact pressure of application rollers ▪ Increase amount of adhesive applied
2. Edge banding can easily be removed by hand. Residue of hot-melt adhesive on the chipboard. The hot-melt adhesive surface is completely smooth (edge banding slips off).	<ul style="list-style-type: none"> ▪ Surface and/or edge banding too cold ▪ Unsuitable hot-melt adhesive used 	<ul style="list-style-type: none"> ▪ Warm up surface and/or edge banding ▪ Use another hot-melt adhesive
3. Edge banding can easily be removed by hand. Most of the hot-melt adhesive is left behind on the edge banding.	<ul style="list-style-type: none"> ▪ Board material is still storing excessive heat energy (e.g. after earlier veneering or laminating of the board surfaces) 	<ul style="list-style-type: none"> ▪ Cool down board material
4. The front edge of the board has had no adhesive applied, or a few millimeters of the edge have splintered.	<ul style="list-style-type: none"> ▪ The adhesive application roller protrudes too far into the line of the board. No adhesive has been applied to the first part of the edge because the roller has been restrained strongly at the board's front edge. 	<ul style="list-style-type: none"> ▪ Adjust the setting of the adhesive application roller
5. Milling ripples are visible	<ul style="list-style-type: none"> ▪ Feed rate is too high and/or rotational speed is too low 	<ul style="list-style-type: none"> ▪ Lower feed rate ▪ Use up milling-mode ▪ Increase number of cutters on milling tool ▪ Increase rotational speed ▪ Post-process with scrapers and finishing wheel

Error	Cause	Measures
6. On thick edge banding, color has slightly faded in the milled area.	<ul style="list-style-type: none"> ▪ Rotational speed is too low 	<ul style="list-style-type: none"> ▪ Increase rotational speed ▪ Adjust the scraper station max. 0.004 - 0.008 inch (0.1 - 0.2 mm) ▪ Rework with finishing station ▪ Warm up the milled area in the hot air station (rework)
7. Stress whitening in the radius during machine center processing.	<ul style="list-style-type: none"> ▪ Edge banding too cold to process 	<ul style="list-style-type: none"> ▪ Increase heater power or reduce feed rate ▪ Increase geometry or use a thinner edge banding material
8. Scratched decor image during machine center processing	<ul style="list-style-type: none"> ▪ Steel adhesive application roller used 	<ul style="list-style-type: none"> ▪ Request rubberized adhesive application roller from machine manufacturer ▪ Use rubberized edge banding feed rolls
9. Step joint across the corner for Doppia, Duo or Trio edge banding	<ul style="list-style-type: none"> ▪ Edge bandings are not fed cleanly 	<ul style="list-style-type: none"> ▪ Diminish edge banding clearance in the guide channel ▪ Monitor projections
10. Low to no overhang of the narrow base of the Doppia edge banding	<ul style="list-style-type: none"> ▪ Monitor board thickness ▪ "Lower" edge banding projection too low 	<ul style="list-style-type: none"> ▪ Increase "lower" edge banding projection ▪ If applicable, turn board and edge banding (wrapping of the edge banding necessary)

Further information about EGGER PMMA Edge Banding can be found in our technical datasheet.

Provisional note:

This processing instruction has been carefully drawn up to the best of our knowledge. The information provided is based on practical experience, in-house testing and reflects our current level of knowledge. It is intended for information only and does not constitute a guarantee in terms of product properties or its suitability for specific applications. We accept no liability for any mistakes, errors in standards, or printing errors. In addition, technical modifications may result from the continuous development of EGGER PMMA Edge Banding, as well as from changes to standards and public law documents. The contents of this processing instruction should therefore not be considered as instructions for use or as legally binding. Our General Terms and Conditions apply.

