

## 加工指南

## Processing instruction

### 爱格 ABS封边带

### EGGER ABS Edge Banding



爱格 ABS封边带是一种用于木质板材窄边的封边且具有保护和装饰性能的热塑性封边带。爱格 ABS 封边带是由 ABS (丙烯腈-丁二烯-苯乙烯) 组成且通体颜色均匀一致。在背面施加一种通用的粘合剂(底涂剂)。

EGGER ABS Edge Banding tape is a thermoplastic edge banding product with protective and decorative properties for finishing narrow areas on wood-based panels. EGGER ABS Edge Banding is made of ABS (Acrylnitril-Butadien-Styrol) and is uniformly coloured through. A universal bonding agent (primer) is applied to the reverse.

### 使用 / 应用区域

### Uses / Areas of Application

爱格 ABS 封边带用于木质层压木质板材 (如: 刨花板、中密度纤维板、高密度纤维板和超轻板等) 开放的窄面区域的装饰并为所有装饰表面提供完美的收尾。它们可以被广泛应用在: 厨房家具、浴室家具、办公家具和卧室家具、客厅家具和儿童间家具、展会建筑内家具以及店铺装修系统家具。ABS 封边带也适用于加工个性化自由造型的组件。由于着色的 ABS 封边带的化学性质, 压力和高温对深色和更强烈颜色的影响会对铣削半径内可能出现的变色产生影响。

EGGER ABS Edge Banding is used to finish open 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 range of applications: furniture for kitchens, bathrooms, offices and bedrooms, living rooms and teenager rooms, exhibition builds and shopfitting systems. EGGER ABS Edge Banding is also suitable for finishing individually shaped freeform components. Due to the chemical properties of coloured ABS, the effect of pressure and heat on dark and intense shades of colour can have an influence on possible discolorations in the milled radius.



## 加工

### Processing

爱格 ABS 封边带可以在传统使用热熔胶系统的封边机以及自动化加工中心上进行加工。个别的加工步骤，如上胶、修边、铣削、刮擦和抛光都是相当直接的。爱格 ABS 封边带不适合使用白色 PVA 胶水进行冷胶激活加工。

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

### 胶合剂 / 胶合剂的应用

#### Adhesive / Adhesive application

爱格 ABS 封边带底涂剂是配置与 EVA、PA、APAO 和 PUR 热熔胶一起使用的。高耐热性的粘合剂应用于产品可能暴露在极端高温下的地方，例如在厨房或在用船运集装箱出口家具时。聚氨酯热熔胶特别适合在潮湿的条件下使用。应始终遵循相应的粘合剂供应商提供的说明书。所需的胶水量视胶粘剂类型(见厂家说明书)、板密度、封边带材料、进给速度而不同。胶合剂施加应均匀且用量充足，以使封边带下的胶压出胶圈，可以填满木屑之间的任何缝隙。在预容器中含有足够量的粘合剂，以确保胶水的涂量和温度保持恒定是至关重要的。由于爱格 ABS 封边带的精确预张力和面平行性，实现了紧密的、几乎看不见的缝。预张力还通过将任何多余的胶水聚集在封边带背面中心及将胶的锚点固定到刨花板上确保最佳的粘接效果。

The primer coating on EGGER ABS Edge Banding is configured for use with EVA, PA, APAO and PUR hot-melt adhesives. Adhesives that are highly heat resistant should be used where the product is likely to be exposed to critically high temperatures, e.g. in the kitchen or when exporting furniture 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 ABS 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.

### 加工温度

#### Processing temperature

加工应在室温下进行。在加工前，封边带和基材应在常温下 (18 - 24°C) 进行平衡处理。如果封边带或板温度太低 (例如，由于储存在未加热的区域)，施加的热熔胶将在封边带粘合前固化。因此，平衡处理是必要的且也应该避免通风。根据胶合剂类型的不同，胶合剂的加工温度在 90 - 230°C 之间变化。有关加工温度，请参阅不同厂商的规格。当测量胶合剂温度时，可能会出现显示误差，测量的温度可能与施胶辊上的实际温度不同。建议在施胶辊上测温。

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 (18 - 24°C). 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 90 and 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.

## 木材含水率 Wood moisture

加工板材的最佳木材含水率在 7% - 10% 之间。

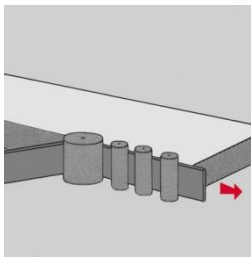
The optimum wood moisture for processing board material is between 7 and 10%.

## 进给速度 Feed rate

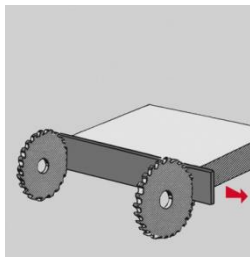
进给速度由热熔胶的加工特性和施胶方法 (喷嘴或辊) 决定。请遵守胶合剂供应商的使用说明。如果进给速度太高, 热熔胶可能会变得粘稠, 阻止了板材完全饱和。此外, 这可能导致施胶辊跳动并可能导致在随后的封边铣削过程中出现颤振痕迹。如果进给速度过低, 封边带的上胶和粘贴之间的间隔太长。在这种情况下, 温度会低于必要的加工温度, 胶合剂将在两个表面连接之前变硬。

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.

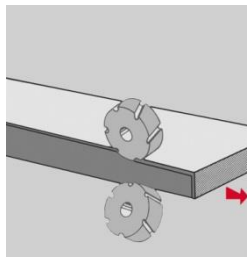
## 封边机加工顺序 Edgebander processing sequence



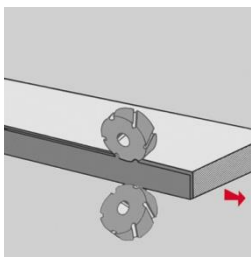
施胶 Gluing



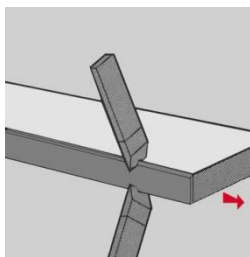
端部裁切 End trimming



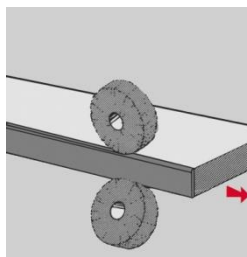
预铣削 Pre-milling: 预铣削头角度 15 - 20° Pre-mill head at 15 - 20° angle



圆弧 Radii / 倒角铣削 bevel milling



精修刮刀 Scraper Finishing



抛光 Buffing

## 压辊 Pressure roller

当考虑到机器的规格时, 为了达到最佳的接缝外观, 必须有足够数量的压辊, 并将其调整到正确的设置。

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.

## 端部裁切

### End trimming

端部裁切使用标准的带尖齿的锯片。交替齿锯片用途有限，因为他们会引起开裂现象，尤其当作用于薄型封边带时。

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.

## 铣削

### Milling

应使用 4 - 6 把直径约为 70mm 且转速为 12,000 - 18,000 转 / 分钟的槽刀。具体的选择取决于刀具和机器的性能。不正确的刀速或钝刀会损坏封边带。如果出现拖尾现象，应减少刀具的速度或如果可能，可增加进给速率。为促进废物吸尘，预铣削可采用逆铣方式进行。精密铣削应始终以顺铣方式进行。

Four- to six-blade cutters with a diameter of approx. 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 incorrect speeds can damage the edge banding. If any smears should occur, the speed of the milling cutter should be reduced or the feed rate increased as necessary. To facilitate waste extraction, pre-milling can be carried out in up-milling mode. Precision milling should always be performed in down-milling mode.

## 刮刀加工

### Scrapper processing

由于 ABS 材料一般在刮刀设备加工后颜色会轻微褪色，为了减轻这种情况，刮刀刮切深度不应超过 0.004 – 0.008 (0.1 – 0.2 mm)。该工艺要求几乎精确的铣削精度(“没有颤振痕迹”)，这可以通过高同心度的铣刀实现。金刚石铣削刀已被证明是特别有效的。热风装置可进一步用于优化刮刀处理，特别是在颜色要求很重要的地方。

As ABS as a material tends to slightly fade in colour after scraping, the scraper blade should not exceed 0.004 – 0.008 (0.1 – 0.2 mm). The process requires an almost precise milling accuracy (“without chatter marks”) which can be achieved with milling tools of high concentricity. DIA (diamond tipped) milling tools have proved to be particularly effective. Hot-air units can be used to further optimize scraper processing, particularly where the colour is critical.

## 抛光

### Buffing

爱格 ABS 封边带可以很容易地通过抛光轮被抛光成弧形半径。任何由刮刀精修引起的颜色褪色都可以简单地用抛光轮抛光。此外，抛光轮可以去除表面可能的污染(胶合剂残留)和/或去除边缘毛刺。使用电子控制的分离剂喷雾装置可以很容易地去除胶合剂残留物；这也减少了刮刀刀片的磨损。

EGGER ABS Edge Banding can easily be polished in a radius with buffing wheels. Any colour 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.

## 除尘

### Extraction

热塑性的碎片可以产生静电荷且因此会粘附到材料和设备上。和其它热塑性原材料相比，ABS 的静电现象较轻。因此，大约 2.5 m<sup>3</sup>/s 的抽气率就足够了。

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 ABS is very low. A suction power of approx. 2.5 m3/s is therefore required.

## 手工加工

### Manual processing

手工处理爱格 ABS 封边带可以很容易地使用胶压钳或边压机进行。但此工艺需要使用特殊的胶合剂，如双组份分散胶粘剂、接触胶粘剂、适用于涂色漆或上清漆或 PU 胶粘剂的胶合剂。相关类型和指导值应从各自的胶合剂制造商获得。另外，也可以使用小型封边装置或人工手持封边装置进行封边处理。

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

## 带有保护膜的封边带

### Edge banding with protective foil

对于封边带的加工处理，建议使用市售脱模剂、冷却剂和清洗剂，封边带表面有一个干净的保护膜。脱模剂可喷在第一个压辊上，也可直接喷在封边后的板面和边面上。当在连续封边机上加工时，保护膜是否应剥离，建议检查并清洁压辊，同时考虑使用润滑剂，尽量减少保护箔与压辊之间的摩擦。如果在有压印的薄膜上使用润滑剂，应事先检查其适用性。

The use of commercially available release agents, coolants and cleaning agents is recommended for the processing of edge bandings which are provided with a peel-clean foil to protect the surface. The release agent can be sprayed onto the first pressure roller or directly onto the board and edge banding surface after application of 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 minimise 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.

为了尽可能长时间地保护封边带不受外界影响，建议不要在家具组装好之前拆除保护箔。

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.

如果封边带需要储存几个月，封边带应放置到包装内，这样可以对保护膜 UV 抵抗性具有积极的影响。

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.

使用过的保护膜可循环且可根据官方法规进行处理。

The selected protective foil coating can be recycled and disposed of under observation of official rules and regulations.

## 清洁

### Cleaning

爱格 ABS 封边带可以轻易地使用适用于塑料表面的商用清洁剂进行清理。使用汽油、稀释剂、醋酸、洗甲水或类似的溶剂或酒精类物质可能会部分溶解表面，因此应避免使用。

EGGER ABS Edge Banding is easy to clean using conventional cleaning agents suitable for plastic surfaces. The use of petrol, thinners, acetic acid, nail polish remover or similar solvent-based or alcohol-based substances may partially dissolve the surface and should therefore be avoided.

## 剩余物处理

### Handling with waste

爱格 ABS 封边带的剩余物可以作为残余物处理。如果木材残余物被回收公司收集以作进一步循环利用，它们通常可能含有少量具有 ABS 封边带的木质材料。ABS 和其它所谓杂质的比例到底应该有多高，应与处置公司商定。

Waste from EGGER ABS 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 utilisation, only a small share is usually allowed to be wood-based materials with ABS edge banding. It should be agreed with the disposal company how high the share of ABS and other so-called impurities may be.

由于残留物的高热值，所以 ABS 封边带的热回收在原理上也是可能的且是合理的。该过程没有含氯化物的形成。在授权的工厂中，封边带残余物可以与残余碎屑一起进行热回收。通常情况下，在生产过程中积累的带有 ABS 封边带的木质材料，也可以用于热回收。没有必要进行对残余物冗长的分类或封边带的分离过程。

The thermal recycling of ABS 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 ABS Edge Banding may be recycled thermally together with chip leftover in approved facilities. As a rule, wood-based materials with ABS edge banding resulting from production may also be thermally recycled. There is no need for time-consuming leftovers separation and/or edge banding removal.

## 由于粉尘形成的健康风险

### Health risk due to dust formation

加工过程中可能会产生粉尘。有对皮肤和呼吸道产生致敏的风险。基于加工过程和颗粒大小，特别是吸入灰尘时，可能会有进一步的健康风险。

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.

在评估工作场所的风险时，必须考虑粉尘的形成。

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

特别是在机械加工过程中（如锯、刨、铣），必须按照适用的卫生和安全条例使用有效的除尘系统。如果没有足够的吸力，必须佩戴适当的呼吸保护装置。

In particular in the case of machining processes (e.g. sawing, planing, 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.

## 火灾和爆炸风险

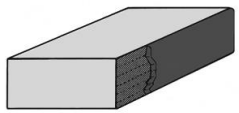
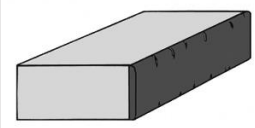
### Fire and explosion hazard

加工过程中产生的粉尘会导致火灾和爆炸危险。必须遵守安全和防火规定。

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

## 加工常见问题

### Processing problems

错误 Error	原因 Cause	措施 Measures
<p>1. 封边带很容易地用手揭掉。热熔胶残留在刨花板上。涂胶辊的网格结构可见。 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.</p>	<ul style="list-style-type: none"> <li>环境温度过低, 或在热塑性胶涂层和压辊之间区域有空气流 Ambient temperature too low, or draught in the area between the coating of thermoplastic glue and the pressure roller</li> <li>封边带材料温度太低(室外储存)或缺乏平衡处理 Edge banding material is too cold (outdoor storage) or lack of conditioning</li> <li>热熔胶温度太低 Hot-melt adhesive temperature too low</li> <li>进给速度太慢 Feed rate too low</li> <li>压辊接触压力太低 Contact pressure of application rollers too low</li> <li>施胶量不够 Not enough adhesive applied</li> </ul>	<ul style="list-style-type: none"> <li>增加室温, 避免通风 Increase room temperature, avoid draught</li> <li>加温封边带材料 Warm up edge banding material</li> <li>增加热熔胶温度 Increase hot-melt adhesive temperature</li> <li>增加进给率 Increase feed rate</li> <li>增加压辊接触压力 Increase contact pressure of application rollers</li> <li>增加施胶量 Increase amount of adhesive applied</li> </ul>
<p>2. 封边带很容易地用手揭掉。刨花板上有热熔胶残留。热熔胶表面完全光滑(封边带滑掉)。 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).</p>	<ul style="list-style-type: none"> <li>封边带表面和/或封边带材料温度太低 Surface and/or edge banding too cold</li> <li>使用了不适合的热熔胶 Unsuitable hot-melt adhesive used</li> </ul>	<ul style="list-style-type: none"> <li>加热封边带表面和/或封边带材料 Warm up surface and/or edge banding</li> <li>使用另一种合适热熔胶 Use another hot-melt adhesive</li> </ul>
<p>3. 封边带很容易地用手揭掉。大部分热熔胶留在封边带上。 Edge banding can easily be removed by hand. Most of the hot-melt adhesive is left behind on the edge banding.</p>	<ul style="list-style-type: none"> <li>板材材料仍储存过多的热能(例如: 板材表面过早贴面或层压后) Board material is still storing excessive heat energy (e.g. after earlier veneering or laminating of the board surfaces)</li> </ul>	<ul style="list-style-type: none"> <li>冷却板材 Cool down board material</li> </ul>
<p>4. 纸板的前缘没有施加胶合剂, 或者边缘有几毫米已经裂开 The front edge of the board has had no adhesive applied, or a few millimetres of the edge have splintered.</p> 	<p>5. 胶辊突过板过深。胶合剂未施加到板材前段边缘处, 因为胶辊在板的前端边缘被强烈限制。 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.</p>	<ul style="list-style-type: none"> <li>调整施胶压辊设置 Adjust the setting of the adhesive application roller</li> </ul>
<p>6. 可见的铣削波纹 Milling ripples are visible</p> 	<ul style="list-style-type: none"> <li>进给速度太高和/或转速太低 Feed rate is too high and/or rotational speed is too low</li> </ul>	<ul style="list-style-type: none"> <li>降低进给速度 Lower feed rate</li> <li>使用逆铣模式 Use upmilling-mode</li> <li>增加铣削刀上刀齿数量 Increase number of cutters on milling tool</li> <li>增加转速 Increase rotational speed</li> <li>用刮刀和精加工轮进行后处理 Post-process with scrapers and finishing wheel</li> </ul>

错误 Error	原因 Cause	措施 Measures
7. 在厚的封边带上, 铣削区域颜色有轻微褪色 On thick edge banding, colour has slightly faded in the milled area.	<ul style="list-style-type: none"> <li>转速太低 Rotational speed is too low</li> </ul>	<ul style="list-style-type: none"> <li>增加转速 Increase rotational speed</li> <li>调整刮刀位置 最大 0.1 - 0.2 mm Adjust the scraper station max. 0.1 - 0.2 mm</li> <li>通过精修工位返工 Rework with finishing station</li> <li>在热风装置工位处加热铣削区域 (返工) Warm up the milled area in the hot air station (rework)</li> </ul>
8. 机械加工中心加工中在圆弧半径内出现应力变白 Stress whitening in the radius during machine centre processing.	<ul style="list-style-type: none"> <li>封边带温度太低不适合加工 Edge banding too cold to process</li> </ul>	<ul style="list-style-type: none"> <li>增加热能或减小进给速度 Increase heater power or reduce feed rate</li> <li>增加圆弧半径或使用薄型封边带 Increase geometry or use a thinner edge banding material</li> </ul>

关于爱格 ABS 封边带的更多信息可以参考我们的技术数据表。

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

**临时说明**

**Provisional notice:**

这些加工说明是基于现有的最佳资料 and 经严格评估后编写的。数据依据实践经验和室内测试并符合我们目前的知识水平。该文件仅供参考, 不作为产品特性或特殊用途适用性的担保。我们对任何错误、标准中的错误或印刷错误概不承担任何责任。另外, 由于爱格 ABS 封边带产品的持续开发、相关产品标准以及法律文件的变更都可能会产生技术层面的修改。因此, 该文件内容不应被视为使用说明书或法律约束文件。适用于我们的一般条款和条件。

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 ABS 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.