REHAU®

Unlimited Polymer Solutions

EDGEBAND PROGRAM

MATERIAL AND PROCESSING TIPS

REHAU EDGEBAND MATERIALS

OVERVIEW

PVC Edgeband

PVC – no other polymer is as versatile. For decades it has been indispensable for its price to performance ratio. REHAU PVC edgeband continues to be a popular edging solution. The material can be recycled, is self-extinguishing and has a UV light fastness ISO 4892-2 rating of 7. Semi-rigid PVC is capable of making tight radii on contour processing machinery.

ABS Edgeband

ABS is another thermoplastic material. This impact resistant, tough material has many economic and processing advantages. It can be recycled or incinerated. REHAU ABS edgeband is highly heat resistant, has a UV light fastness ISO 4892-9 rating of 6 and can be processed on standard edgebanders.

PP Edgeband

Polypropylene edgeband has become very popular in the furniture industry in recent years. This material, with its soft cross-linked surface is environmentally sound. It requires very little energy to manufacture and can be recycled or incinerated. During incineration, it produces only carbon dioxide and water (as does natural gas). REHAU PP edgeband is suitable for use on standard edgebanders or on contour processing machinery. Our universal primer system guarantees optimum bonding of the edging with hot-melt adhesive made of EVA/PA or PUR. The edgeband has a UV light fastness ISO 4892-9 rating of 7. It is extremely resistant to heat and solvents, and has low shrinkage. PP is capable of making tight radii on contour processing machinery.

Range	PVC	ABS	PP	PET
Solid	●	●	●	
Printed	●	●	●	
NaturEdge®	●	●	●	
SoftEdge™	●		●	
Magic™ Translucent Metallic				●
Magic™ Metallic			●	
Magic Creativo™			●	

Properties	PVC	ABS	PP
Light fastness to ISO 4892-2	7 to 8	> 6	7 bis 8
Shrinkage at 194°F (90°C)*	< 0.3%	< 0.3 %	< 0.1 %
Shrinkage at 230°F (110°C)*	< 1.7%	< 1.7 %	< 0.2 %
Vicat	162°F (72°C)	185°F (85 °C)	212°F (100 °C)
Shore hardness	79 ± 4	70 ± 4	73 ± 3
Ball test hardness to DIN 53456	95	103	98
Recycling	●	●	●
Incineration		●	●

Gluing	PVC	ABS	PP
Primer system	●	●	●
Hot melt adhesive EVA/PA/PUR	●	●	●

Processing	PVC	ABS	PP
End milling	●	●	●
Flush milling	●	●	●**
Radius milling	●	●	●**
Contour milling	●	●	●**
Scraper	●	●	●**
Polishing	●	●	●**

** Test carried out in loose storage for one hour (bonding reduces shrinkage)*

*** Optimum tool configuration required.*

EDGEBAND PROCESSING
TIPS AND HINTS

We provide these tips to ensure your success in processing thermoplastic edgeband. The REHAU edgeband range is manufactured to the latest state of technical knowledge and can be processed on all conventional hot-melt adhesive edgebanders and CNC machinery.

Material Properties

REHAU edgeband is extruded from PVC, ABS, PET or PP. It is formulated to ensure even coloring of the material and clean, trouble-free edge finishing. Optimal material formulations guarantee long life of the milling and cutting tools.

REHAU edgeband is light fast. During testing to EN ISO 4892-2, the sample is subjected to UV lighting behind window glass under defined physical parameters. Simultaneously, a light sensitive scale is equally exposed. As soon as level 6 on the scale has been reached, the sample is compared to an unexposed sample (based on ISO 105-A02/A03). REHAU edgeband also resists saliva and sweat according to DIN 53160, parts 1 and 2.

Tolerances

Wall Thickness	Allowed Deviation* in mm
0.4 – 0.8 mm	± 0.05
0.9 – 1.0 mm	± 0.10
1.1 – 1.6 mm	± 0.15
1.7 – 3.0 mm	± 0.25
3.1 – 5.0 mm	± 0.30

Width in inches	Allowed Deviation* in
7/16" – 11/16"	± 0.008"
11/16" – 1 5/16"	± 0.012"
1 5/16" – 1 9/16"	± 0.016"
over 1 9/16"	± 0.020"

**Special tolerances available upon request*

Surface Properties

REHAU printed edgeband is manufactured with sophisticated, reproducible processes. Printing and lacquering are carefully tuned manufacturing steps. The acrylic lacquer UV coating ensures resistance to scratches and mechanical abrasion.

They resist a 24-hour test with domestic cleaning agents and are impervious to stains. The surfaces can be washed, are hygienically clean and resistant to moisture.

Tolerances

During quality control, REHAU edgeband is checked for compliance with surface quality standards and dimensional tolerances.

Adhesion Properties

REHAU edgeband is produced with a universal primer suitable for bonding with EVA, PA , PUR and APAO hot melt adhesives.

The new high temperature resistant EVA hot melt adhesive provides, particularly when used with our low shrinkage REHAU edgeband, secure adhesion even with edging of more than 3 mm thickness. We recommend APAO adhesive for high ambient conditions, for example in kitchens or when furniture is exported in containers.

Width in mm	Allowed Deviation** in mm
11 – 17	± 0.2
18 – 33	± 0.3
34 – 40	± 0.4
over 40	± 0.5

***For edgebands with thickness > 1 mm*

For applications with high moisture conditions, we recommend a PUR hot melt adhesive.

REHAU edgeband is not suitable for a cold gluing process. For processing on special edgebanders with hot-air guns, certain REHAU edgeband ranges can be supplied with pre-coated hot melt adhesive.

Note: We recommend processing trials for edgeband that is pre-coated with hot melt adhesive. Edgeband of less than 1.5 mm thickness can be distorted by the re-activating heat application.

Storage

REHAU edgeband can be stored almost indefinitely at room temperature (68-77°F [20-25°C]).

Exceptions: REHAU PVC/PP SoftEdge™ sealing edgeband and edgeband with pre-coated adhesives may not be stored longer than 6 months. After this period, the reactivation of the adhesive may be affected.

To prevent spontaneous adhesion between layers, the storage temperature of edgeband should not exceed 77°F (25°C).

Processing Parameters

For clean and permanent covering of edges with edgeband, it is necessary to observe a variety of processing parameters depending on the materials (i.e. edge, adhesive), the edgebanding machinery and the ambient temperatures. In each case, it is advisable to conduct trials to determine the optimal operations and settings. The standard values specified by the manufacturers for the respective applications should be observed.

Processing Temperature of Adhesive

The specifications in the adhesive suppliers' data sheet should be observed. The specified temperature range depends on the ambient conditions and the processing speed.

Note: Thermostats in the glue containers are often inaccurate and can deviate by several degrees from the actual temperature on the spreader roll.

Processing Temperature of Board and Edging

When applying edgeband, room temperature should be at least 64°F (18°C). Avoid drafts.

Note: If board and edging are too cold (i.e. stored in unheated rooms), the hot melt adhesive applied to the board will set before the edgeband has been applied.

– Storage of hot melt adhesive: cool and dry
– Wood moisture content of board material: 7-10%

EDGEBAND PROCESSING
TIPS AND HINTS

Fixing Quality
Fixing quality depends on:
- Base material
- Milling quality
- Choice of adhesive
- Glue temperature and amount
- Temperature of boards and edgeband

REHAU edgeband tolerances ensure optimum pressure in the fixing area.

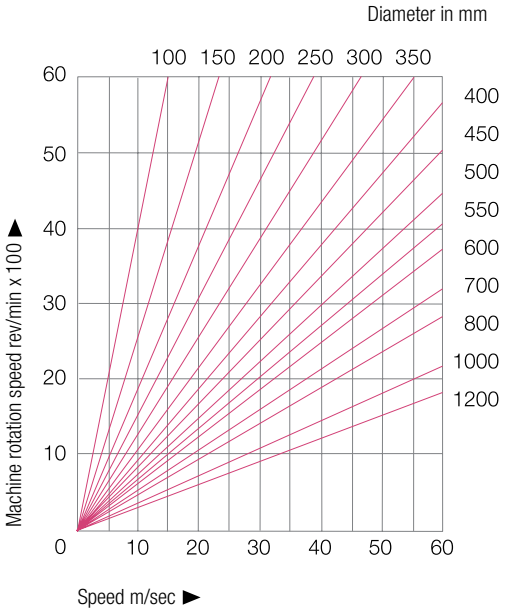
Rate of Feed
The following settings are recommended:
- Nozzle spreader at 39-82 ft (12-25 m) per minute
- Spreader roll at 59-197 ft (18-60 m) per minute

Amount of Adhesive to be Applied
Hot melt adhesives should be applied at a volume of 0.03-0.04 lbs/ft² (160-220 g/m²). Adhesive application should be even, and the volume should fill the hollow areas between the wood chips and should cause small pearls to be pressed out from under the edging. The amount of adhesive required depends on the thickness of the board, the thickness of the edging material (more adhesive is used for thick edgeband) and the rate of feed (the slower the rate, the larger the amount of adhesive required).

Removal by Suction
More powerful removal of milling chips is necessary for thermoplastic edging than for thermo-set edging, because the thermoplastic chips can become statically charged and “stick" to the material. It can be removed by suction at approximately 88 ft³/s (2.5 m³/s).

Milling
Milling is to be done in counter-rotation (power cut). PP edgeband and critical colors require careful observation.

End Milling
REHAU edgeband of up to 3.5 mm thickness can be processed from the roll and cut. Thicker dimensions are generally processed in fixed lengths from a feed dispenser.



Wheel material sisal-muslin felt (hardness 0.56 g/cm)

Buffing

For all PP edgeband and darker colors in other materials, the following buffing procedures must be observed.

Recommended cutting speed for thermoplastic materials:

– Grinding at 26-49 ft/s (8-15 m/s)
– Polishing at 16-49 ft/s (5-15 m/s)

Depending on the diameter of the buffing wheel from 1,000-2,000 rev/min.

Intermediate Storage

After applying the edgeband, the furniture components should be stored for 24 hours to ensure the crystallization of the adhesive.

Painting of Edgebands

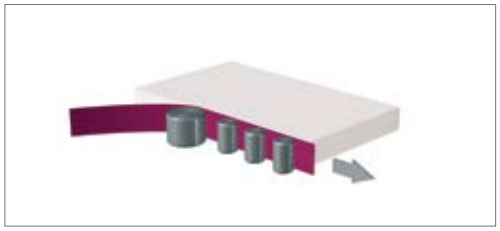
REHAU ABS, PVC or PP edgeband may be painted. Special PUR-based paints such as DD paint should be used. The choice of paint systems should always be agreed with the manufacturers. Suitability should also be tested prior to mass production.

The following steps may be observed:

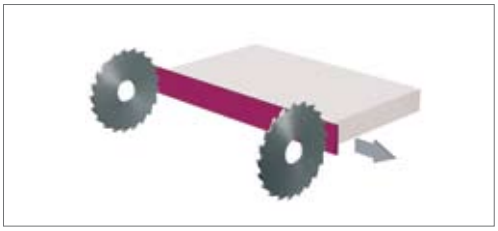
– Pre-treatment with a DD thinner
– Pre-priming of PP edgeband
– Single- or double-spray painting in the required color
– Intermediate drying for 45 minutes at 68°F (20°C)
– Final drying overnight at 68°F (20°C)

EDGEBAND PROCESSING
TIPS AND HINTS

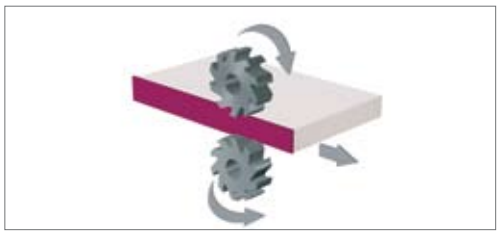
Work Cycle in Edgebanding Machine



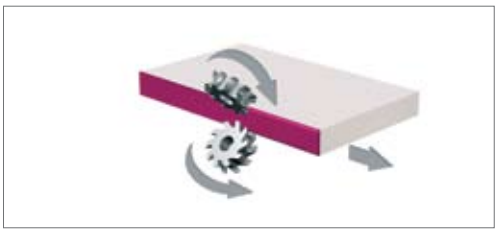
1 *Gluing*



2 *Cutting*

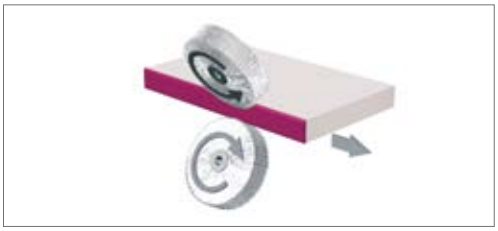


3 *Pre-milling with power cut*



4 *Chamfering with power cut*

5 *Cleaning*



6 *Buffing*

Machine Set-up in Relation to Material Properties

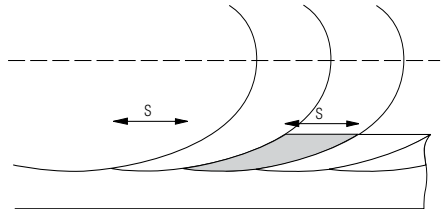
– Thermoplastic material should be processed counter to board travel. Processing in the same direction can lead to deterioration in quality.
– The scraper must be at a 90° angle to the material. The scraper should remove 0.004"-0.006" (0.10-1.15mm).
– The position of the buffing station, the cutting speed (m/sec) and the quality of the buffing wheel must be adjusted to suit the specific edgeband material.

Processing Tips for Polypropylene (PP) Edgeband

Target for quality that does not need re-working: s_Z = 0.20 to 0.25

$$s_Z = \frac{\text{Processing Speed v (m/min) x 1,000}}{\text{Routing Speed n (r/min) x Number of Blades z}}$$

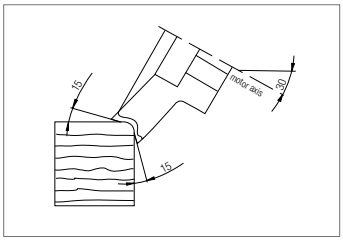
Number of Blades z	Routing Speed (r/min) 12,000	Routing Speed (r/min) 18,000
3	(0.55)	(0.37)
4	(0.41)	0.27
5	(0.33)	0.22
6	0.27	0.18



No. of blades
cutting length per tooth s_Z :
s_Z for varying speeds/ numbers of blades
at 20 m/min processing speed

Miller with adjustable blades	Installation is critical
Miller fitted with carbide tipped blades	Blades are well adjusted
Miller fitted with diamond tipped blades	Blades are well adjusted
Cutting speed of miller	Approx. 70 m/sec
Processing speed (m/sec)	Approx. 25 m/min (does not depend on material)
Copy milling (m/min)	Max 22 m/min
Volume to be machined	1 to 2 mm projection from the board

Choice of Miller



EDGEBAND PROCESSING
TROUBLE SHOOTING

Hints and Tips for Processing Faults

Description of Problem	Possible Causes
1. The edging can easily be pulled off by hand. Adhesive remains on the chipboard (throughfeed technigue) or on the edgeband (stationary technique). The grid pattern of the adhesive application roller is visible.	- Room temperature is too low or there is a draft in the interval between application of adhesive and contact with the pressure roller - Edging material (throughfeed technique) or chipbaord (stationary technique) is too cold - Adhesive temperature is too low - Rate of feed is too slow - Not enough pressure from application roller
2. Edging can easily be pulled off by hand. Adhesive remains on the board. Surface of the adhesive is completely smooth (edging slides off).	- Board and/or edging are too cold - Primer is faulty or an incorrect type for the application
3. Edging can be pulled off by hand. Adhesive remains on the edging.	- Board material retains too much residual heat (i.e. after the preceding veneering/laminating of the board surfaces).
4. Poor adhesion of the edging on the front end of the board. The edging has splintered at the front end.	- Adhesive application roller protruding too far into the path of the board. No adhesive applied to the front of the board due to strong pressure setting of the roller, causing it to bounce back.
5. Milling cut visible.	- Feed rate too fast - Cutting speed too slow - Rework with scrapers and/or buffers
6. The color tone in the milled area is slightly lighter on the thick edgebands.	- Cutting speed too slow - Hot air stations should be used - Buffing

REHAU TOOLS

INNOVATIVE TOOLS FOR EDGEBAND PROCESSING

Optimal, Manual Edge Processing Using REHAU Tools

REHAU provides innovative tools for the complete edgebanding process – from gluing through finishing. The tools are adjusted to the special requirements of processing thermoplastic edges (ABS, PET, PMMA, PP, PVC). They are ideal for individual and small series production, for processing of special panel shapes and for low-noise, high-quality finishing on site.

1 *Guillotine End Trimmer*
Trims the edgeband ends with precision

2 *Guillotine End Cutter**
Creates nearly invisible butt joints on both straight and radiused sections

3 *Polishing Felt and Heat Gun*
Finishes the joint adhesion

4 *Edge Cutter**
Flush trims band ends with precision

5 *Plane Cutter**
Creates internal and external radiused edges

6 *Finisher*
Sands edges to eliminate processing traces

7 *Polisher with Flap Wheel*
Smoothes and rounds edges after trimming

8 *Sponge Sanding Block*
Deflashes edges that cannot be radiused

** Available from the Express Collection stock program*

REHAU EDGEBAND

ANY QUESTIONS?

East Coast U.S. (800) 947-3428 Midwest/Central U.S. (866) 734-2869 West Coast U.S. (800) 944-1011
Eastern Canada (800) 361-0830 Ontario (800) 561-9609 Western Canada (800) 668-1173
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100.711 en 10.2008