Engineering progress
Enhancing lives

RAUKANTEX zero-joint edgebands

Technical information

REHAU

RAUKANTEX zero-joint edgebands

Individuality, design, hygiene and quality play a decisive role in furniture production. The RAUKANTEX edgebands are perfect for all manufacturing processes and application areas, whether it's using adhesives or 100% adhesive-free, for the kitchen, office, living room or bathroom.

You can also obtain the entire edgeband range quickly and in small quantities though our REHAU stock range. You can find more information at **www.rehau.com/collection**.

Functional edgebands

RAUKANTEX pro – the perfectionist

Edgeband with polymer functional layer

Get perfect, seamless components with the 100% polymer functional layer. 100% colour match. 100% adhesive-free – tried and tested industrial quality.
Materials: PMMA, PP, ABS, PET

- ■■■ Moisture resistance
- ■■■ UV resistance
- ■■■ Adhesion/hardness
- ■■■ Appearance

Functional layer can be seamlessly fused

RAUKANTEX plus – the entry-level edgeband

Edgeband with TPU functional layer

A polymer-based, colour-matched functional layer on the reverse side gives the components a seamless appreance. 100% adhesive-free.
Materials: PMMA, ABS
The Plus coating is only available in the stock collection.

- ■■□ Moisture resistance
- ■■□ UV resistance
- ■■□ Adhesion/hardness
- ■■□ Appearance

Functional layer with barely noticeable joint

Adhesive edgebands

RAUKANTEX pure – the standard

Primer edgeband

Adhesive is melted before it is applied to the board or edgeband.
Materials: PMMA, PP, ABS, PET, PVC

EVA adhesives

- ■□□ Moisture resistance
- ■□□ UV resistance
- ■■□ Adhesion/hardness
- ■□□ Appearance

PUR adhesives

- ■■■ Moisture resistance
- ■□□ UV resistance
- ■■■ Adhesion/hardness
- ■□□ Appearance

Visible joint depending on adhesive selection

1. Suitability

RAUKANTEX zero-joint edgebands are designed to be processed on edgebanders which use CO_2 or diode laser technology, hot air or a NIR process. For this, the edgebands are provided with a functional bottom layer. Due to the range of parameters that can be encountered (board quality, machine set-up, etc.), REHAU recommends performing processing tests prior to the start of manufacture. Please refer to the relevant technical information of the respective edgeband material for processing details.
www.rehau.com/ti-raukantex

2. Three techniques for invisible joints

Laser technology
During laser processing, a laser activates the edgeband's functional layer.

Hot-air technology
Hot compressed air can be used to melt the functional layer during the hot-air process.

NIR technology
Thermal energy can be quickly and precisely transferred with near infra-red technology.

Designation	RAUKANTEX pro	RAUKANTEX plus	RAUKANTEX pure
Invisible joint	■■■ Zero joint technology with colour matched polymer functional layer	■■□ Polymer based functional layer in generic colours	■□□ Can only be implemented with coloured adhesive
Zero joint quality	■■■	■□□	■□□ EVA / PUR
Edgeband adhesion	■■■	■■□	■■□ EVA ■■■ PUR
UV stability	■■■	■■□	■□□ EVA / PUR
Heat resistance according to AMK edging	■■■	■■□	■□□ EVA ■■■ PUR
Processing procedure	One edgeband for all zero joint technologies (NOTE if it says 'all technologies' it could be read to include adhesive)	One edgeband for all zero joint technologies (NOTE if it says 'all technologies' it could be read to include adhesive)	Adhesive applied by machine

■■■ Excellent ■■□ Good ■□□ Limited

3. General processing instructions

The edgebands to be processed must be acclimatised at normal room temperature (> 18 °C). It is recommended that the boxes are opened. During processing, suitable extraction must be ensured. Subject to the technical instructions on air quality, extracted air can be discharged into the surroundings – local conditions and regulations must be checked in each case. In the case of clean air recirculation, dust particles and gaseous components must be filtered appropriately. The specifications from the machine and filter manufacturer must be observed here. For further instructions and guidelines on optimal processing of RAUKANTEX edgebands, separate processing instructions specific to the material are available from REHAU.

4. Storage

If stored properly, RAUKANTEX edgebands can be stored for min. 12 months. For edgebands older than 12 months, however, a processing trial should always be carried out prior to series processing.

Recommended storage conditions are:
- Room temperature (approx. 18 °C to 25 °C)
- Dry
- Clean
- No vapours containing solvents
- Protected from light

5. Processing parameters for laser process

The specific energy recommended by REHAU should be used for the processing of RAUKANTEX zero-joint edgebands (plus and pro) with diode lasers. The so-called $E_{spec.}$ [J/cm²] is a value that is determined metrologically (at REHAU max. $E_{spec.}$ = 26 J/cm²), and which specifies the required energy per area depending on colour. The Espec. is printed on the inside label of every REHAU roll and is available in customer specific list form if required for production planning. These specifications apply to straight-line edgebanders. For CNC processing centres (for free formed parts), the values should be adjusted to suit the individual machine (in the case of HOMAG and IMA processing centres, since mid-2015, the same E_{spec} has been used as for straight line edgebanders). When using a CO_2 laser, the specifications of the required laser power [W] depending on the edge width and feed rate must be requested from REHAU. Processing of RAUKANTEX pro or plus in PVC material using laser technology is not authorised.

6. Processing parameters for hot air

The recommendations for machine settings are based on processing on a straight-line edgebander, when edging 19 mm substrate with the specified feed rates. The main pressure roller should be at 2.5–3 bar (approx. 20–25 kg). In case of deviation, the machine parameters must be adjusted in consultation with the respective machine manufacturer or REHAU.

HOMAG **RAUKANTEX plus** **Next Generation TPU** Parameter	**S200/S240** (KDX1100/1200)	**S300** (KDX1400)	**S-380** (KDX1600)	**S-500** (KAX375)	**BAZ power edge** **pro duo**
Feed	8 m/min.	14 m/min.	20 m/min.	Up to 25 m/min.	Software-controlled
Temperature	450 °C	650 °C	650 °C	650 °C	140 °C
Pressure (flow rate) ball valve 23 mm	Fixed	2 bar (680 Nl/min.)	3.5 bar (1,040 Nl/min.)	2 bar (650 Nl/min.)	Software-controlled
Pressure (flow rate) ball valve 43 mm	Fixed	3.5 bar (1,040 Nl/min.)	4 bar (1,150 Nl/min.) At 16 m/min.	4 bar (1,300 Nl/min.)	Software-controlled

HOMAG **RAUKANTEX pro** Parameter	**S200/S240** (KDX1100/1200)	**S300** (KDX1400)	**S-380** (KDX1600)	**S-500** (KAX375)	**BAZ power edge** **pro duo**
Feed	8 m/min.	14 m/min.	20 m/min.	20 m/min.	Software-controlled
Temperature	450 °C	650 °C	650 °C	650 °C	180 °C
Pressure (flow rate) ball valve 23 mm	Fixed	3 bar (900 Nl/min.)	4 bar (1,150 Nl/min.)	2.5 bar (800 Nl/min.)	Software-controlled
Pressure (flow rate) ball valve 43 mm	Fixed	4.5 bar (1,290 Nl/min.)	4.5 bar (1,290 Nl/min.) At 16 m/min.	4.5 bar (1,550 Nl/min.)	Software-controlled

BIESSE AirForce	**P½ (Akron) up to 18 m/min**		**P¾ (Stream) up to 25 m/min**	
Parameters	pro	plus	pro	plus
Nozzle temperature	480 °C	340 °C	580 °C	370 °C
Air quantity	1,100 Nl/min	750 Nl/min	1,100 Nl/min	750 Nl/min

HEBROCK airTronic	**V_f = 10 m/min**	
Parameters	pro	plus
Unit temperature	450 °C	375 °C
Air quantity	480 Nl/min	370 Nl/min

FELDER	**V_f = 12 m/min**	
Parameters	pro	plus
Nozzle temperature	320 °C	285 °C
Air heater temperature	610 °C	560 °C
Air quantity	740 Nl/min	620 Nl/min

Other values on request.

SCM	**AirFusion (15 m/min.)**		**AirFusion+ (30 m/min.)**	
Parameters	pro	plus	pro	plus
Nozzle temperature	580 °C	450 °C	650 °C	490 °C
Air quantity	750 Nl/min.	660 Nl/min.	1,400 Nl/min.	980 Nl/min.

SCHUGOMA		
Parameters	pro	plus
Nozzle temperature	410 °C	410 °C
Air quantity	750 Nl/min	750 Nl/min.

For all other hot-air sources on the market, the setting parameters must be requested from the respective machine manufacturer. RAUKANTEX pro or plus in PVC material can be processed using the hot air method.

General comment:
When using RAUKANTEX pro in the OMR and the OFL versions, the specified performance can be reduced by approx. 10-20%.

7. Processing parameters for NIR process

The NIR technology works in a wavelength range close to the diode laser and is based on the activation of absorbers. An edgeband calculator provided by the machine manufacturer is available for the individual setting of processing parameters, with the help of which it is possible to convert the specific energy values $E_{spez.}$ [J/cm²] of RAUKANTEX edgebands (plus and pro) recommended by REHAU into device-specific performance values [kW].

If entering $E_{spez.}$ is not possible, the following reference values are applicable for a feed of 18 m/min. and a 19 mm board:
13 J/cm² = 3.3 kW
26 J/cm² = 6 kW

8. Surface

Surface smoothness
Due to the high energy input using the zero-joint procedure, processing RAUKANTEX pro on chipboards can lead to a rough edgeband surface.

Energy input into the functional layer conducts into the edge of the chipboard material, and depending on the edgeband thickness (<1.5mm), and edgeband surface finish (where the glossier the more critical) the chipboard structure can telegraph through to the surface of the processed edgeband. In these cases we recommend the use of special functional layers after consultation with the REHAU technical application department. This effect is not critical for application on MDF boards.

9. Frequently asked questions

Laser technology:

Problem	Problem diagnosis
1 Open joints on long edge	▪ Incorrect laser coverage setting ▪ Incorrect pressure zone setting ▪ Angularity of form trimming
2 Open joint in corner	▪ Edge and board feed not synchronised ▪ Edge overhang too long/short ▪ Laser radiation start/end not correct
3 Too little adhesion / peel strength	▪ Functional layer thickness outside tolerance ▪ Pressure zone setting incorrect (lifting, pressure) ▪ Energy specification not compatible with the edge
4 Functional layer burns / heavy smoke formation	▪ Energy specification not compatible with the edge ▪ Dirty or missing functional layer
5 Edgeband jams in the guide	▪ Longitudinal warping or width fluctuation of the edge ▪ Retaining device set too low ▪ Tape magazine tension too high (especially for RAUKANTEX plus)
6 Machine temperature sensor switches off	▪ Incorrect laser coverage setting ▪ Laser penetration due to insufficient colouring of the edge

Hot-air technology:

Problem	Problem diagnosis
1 Open joints on long edge	▪ Pressure setting too low ▪ Incorrect pressure zone setting ▪ Angularity of form trimming
2 Open joint in corner	▪ Edge and board feed not synchronised ▪ Edgeband overhang too long or too short ▪ Start/end of hot-air application incorrect
3 Too little adhesion / peel strength	▪ Functional layer thickness outside tolerance ▪ Pressure zone setting incorrect ▪ Energy specification not compatible with the edge coating
4 Functional layer smudged	▪ Temperature setting not compatible with the edge (correct specifications for RAUKANTEX pro or plus) ▪ Nozzle pressure too high
5 Edge jams in the guide	▪ Longitudinal warping or width fluctuation of the edge ▪ Retaining device set too low ▪ Functional layer "jams" on edge guide (pull edge back during work breaks) ▪ Tape magazine tension too high (especially for RAUKANTEX plus)
6 Machine pressure sensor switches off	▪ Check compressed air supply

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