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RAUVISIO tone

Technical Information

REHAU
Interior Solutions

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01 Information and safety information

Validity
This Technical Information is valid worldwide.

Latest version of the Technical Information
For your safety and to ensure the correct use of our products, please check at regular intervals whether a new version of this Technical Information is already available. You can obtain the latest version of the document from your local retailer, your REHAU sales office or at **www.rehau.com/TI**.

Navigation
At the beginning of this Technical Information, you will find a detailed table of contents with the hierarchical headings and corresponding page numbers.

Pictograms and logos

Safety notice

Legal notice

Important information

Information available online

Your benefits

Intended use
REHAU RAUVISIO products may only be planned, processed and installed in accordance with this Technical Information document. Any other use is in violation of the specifications and is therefore prohibited.

Suitability of the material
The relevant, valid technical information is to be observed for the processing/assembly and use of RAUVISIO products. Our technical information is based on empirical values and knowledge acquired up to the time of printing. The dissemination of this information does not comprise any assurance of the properties of the products described. No explicit or implicit guarantee may be derived from it.

The information does not release the user/purchaser from their obligation to assess the suitability of this material and the correct processing thereof to attain the required results in terms of objective and application.

Disclosure of information
It is essential to ensure that your customers, including end customers, are informed about the necessity to observe the current technical information publication as well as the care and usage instruction for RAUVISIO products. The care and usage instructions must be made available to the end customer, either by you or by your customers.

Note to our distribution partners and customers that resell RAUVISIO products
Please also inform your customers of the need to follow the current technical information and make this available to them.

Note to the processor
Please ensure that at least the installation guidelines (chapter “7 Installation guidelines”) and the care and usage instructions (chapter “8 Care and usage instructions for the end user”) are handed over to your customers and to fabrication and installation companies.

Safety instructions and assembly manuals
Observe the instructions on the packaging, accessories and installation instructions. Keep the installation instructions so that they are always available.
If you do not understand the safety instructions or installation recommendations, or if there is any uncertainty with regard to their content, please contact your local REHAU sales office.

Relevant regulations and safety equipment
All applicable safety and environmental regulations, as well as the regulations from trade and professional associations must be strictly observed. These always take priority over the instructions and recommendations given in the technical information.

Always use safety equipment such as
- Gloves
- Protective goggles
- Ear protection
- Dust mask

Adhesives and additional tools
Observe safety regulations for the adhesives used and ensure that they are strictly complied with.

Keep ancillary working materials, e.g. alcohol-based cleaners and other highly flammable substances, in safe and well ventilated places.

Ventilation/extraction, production dust
Ensure good ventilation and extraction around the processing machines.
If production dust is inhaled, provide fresh air and in the event of symptoms seek medical advice.

Protective measures and disposal
RAUVISIO tone is a composite made of wooden substrate and polymer surface coating, which has ecologically sound properties.
The dust that forms during processing is not toxic. The dust concentration is to be minimised through suitable protective measures such as extraction and use of a dust mask.

Dust from RAUVISIO tone presents no specific risk of explosion.

Disposal code in accordance with the waste category ordinance
- 170203/Construction and demolition waste consisting of wood, glass, plastic
- 120105/Waste from mechanical shaping processes and from the physical and mechanical surface treatment of metals and plastics (plastic shavings and lathe shavings)

Fire behavior
Due to its composition of wooden substrate and PP foil, RAUVISIO tone demonstrates favourable fire behaviour and is classified as per DIN 4102-B2 as being of normal flammability. In the event of a fire, no toxic substances such as heavy metals or halogens are released. The same firefighting techniques can be used as for other building materials containing wood.

Fire-fighting
Suitable extinguishing agents for fire-fighting are
- Water spray
- Foam
- CO_2
- Extinguishing powder

A solid-stream water jet is unsuitable for safety reasons.

When fire-fighting, wear suitable protective clothing and if necessary standalone breathing apparatus.

02 RAUVISIO tone

02.01 Product description

RAUVISIO tone is an extremely matt surface that emphasizes modern features in furniture and interior design. The continuous laminating process of the coating material roll ensures consistently high surface quality. The seamless connection between the board and edgeband creates a homogeneous component. RAUVISIO tone is a substitute for high-quality lacquer elements.

Advantages of RAUVISIO tone

- **Versatility:** Can be processed using conventional woodworking tools
- **High resistance:** Scratch-resistant, abrasion-resistant, chemical-resistant and waterproof. These properties make it especially durable and easy to care for
- **Aesthetics:** Extremely matt finish in an attractive color range
- **Sustainability:** Free of halogen components and plasticizers
- **Barrier function:** Suitable for increased exposure to moisture

Fig. 02-1 RAUVISIO tone in use

02.02 Individual components

Coating materials
RAUVISIO tone is a multi-layer polymer surface produced continuously as a roll. The thermosetting HardCoat finish ensures increased resistance to chemicals and scratches.

The hard-wearing PP foil is used on both sides and, together with the wood-material substrate, forms a perfectly symmetrical product structure. The decorative surface is also provided with a REHAU-branded transparent protective foil which can be removed after installation.

Wooden substrate
RAUVISIO tone utilizes homogeneous and finely sanded wood-material substrate. This ensures a smooth surface. The selected medium-density fiberboard (MDF) allows for stable and durable furniture components with the advantage of a uniform and even surface.

Edgeband
A variety of edgebands from REHAU's RAUKANTEX edgeband range can be used to complete the furniture board. The following table contains the most important information on the different edgeband variants:

	RAUKANTEX pure **Standard primer edgeband**	**RAUKANTEX plus** **Entry-level invisible joint**	**RAUKANTEX pro [1)]** **Permanent invisible joint**
Description	In all dimensions and decorative designs	The zero joint entry-level: A coloured adhesive pre-coated on the rear ensures an invisible joint on the component	Perfect zero joint through 100% polymer functional layer
Properties	Traditional edging	Invisible joint ▪ Colouring of the adhesive layer in defined standard colours	Permanently invisible and functional zero joint ▪ Precise colour matching of the polymer functional layer to the decorative designs ▪ No rubbing off of the joint in daily usage
Delivery	Available as a customer-specific item or via the REHAU standard stock range	Available via the REHAU standard stock range Minimum quantities and short delivery times	Available as a customer-specific item or via the REHAU standard stock range
Processing	Conventional processing ▪ Can be processed using all standard adhesive types ▪ Processing using mechanical adhesive application ▪ For straightline edgebander and edgeband processing centre	Versatile processing ▪ Can be processed using laser, hot-air, plasma and NIR ▪ Suitable for straightline edgebander and edgeband processing centre	

[1)] For components with increased exposure to moisture, the use of a RAUKANTEX pro OMR Optimised Moisture Resistance edgeband is recommended

02.03 RAUVISIO tone composite pressed board

RAUVISIO tone is available as a pressed board measuring 1,300 x 2,800 x 18.6 mm. It consists of an MDF board laminated on both sides with PP foil.

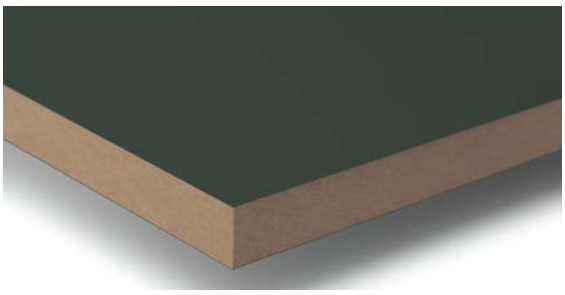


Fig. 02-2 RAUVISIO tone composite pressed board

03 Transport, packaging and storage

03.01 Transport and loading information

When the goods arrive, check the exterior packaging for damage immediately:

- If damage has occurred, open the packaging in the presence of the freight carrier and record the damage to the goods.
- This must be confirmed by the driver of the freight carrier with their names, freight carrier, date and signature.
- The damage must be reported to the freight carrier within 24 hours.

In the event of a failure to comply with this, the freight carrier's insurance company will not accept liability!

Transport:
Under no circumstances should the boards be exposed to temperatures higher than 50 °C during transportation to avoid thermal overloading of the adhesive/foil system. In the case of increased thermal loading, there may be interactions between the adhesive and coating material which could result in an orange peel/waviness effect and therefore impair the finish.

Delivery
Boards are shipped loaded on square timber battens or pallets to ensure they are kept flat.

- Ideally, packaging units should be unloaded with a forklift or similar appliance.
- If the required equipment is not available, the boards can be unloaded by hand. In this case, ensure that the boards do not become dirty and are not subjected to any mechanical loads.
  - When unloading by hand, wear suitable protective equipment, e.g. gloves, as sharp edges can cause cuts.
  - The use of transport aids such as suction lifters, lift handles and board transporters is recommended for handling; see also chapter “4.1 Unpacking”.
  - Bending is not permitted when transporting the RAUVISIO boards horizontally.

03.02 Packaging

Protect boards against contamination.
With RAUVISIO tone the narrow edges and surfaces must be protected. When moving, picking or processing boards take particular care to avoid or remove any dirt that may get between individual boards.
Otherwise the stack pressure/dead weight of the boards will inevitably cause indentations in the laminate surfaces.

- We recommend using a foam fleece between the boards in the above-mentioned cases to prevent impurities from appearing on the surface of the boards.

Please observe the handling instructions for our RAUVISIO products.

03.03 Internal transport and storage

Inter-company transport
RAUVISIO tone panel material must be kept flat, level and fully supported along its entire length during transportation. The ideal method is to transport them in the packing format in which they were delivered (no repacking recommended).

Storage
RAUVISIO tone is delivered on pallets or squared timbers with the appropriate protective boards to cover them. The packaging units with RAUVISIO tone are stackable. Due to the stack pressure, however, it is not permitted for more than four packaging units to be stacked on top of one another.

⚠

Protecting the packaging units.
The packaging units are to be protected against damage, large fluctuations in temperature and humidity, as well as high UV levels of artificial lighting or direct sunlight.

Store boards flat and level.
RAUVISIO tone board material must be stored and transported in a flat and level position with support along its complete length. It is recommended to store boards on the supplied pallet.
Alternatively, boards must be supported by a minimum of 5 evenly spaced timber battens of equal size (see diagram). This is necessary to prevent bending or warping.

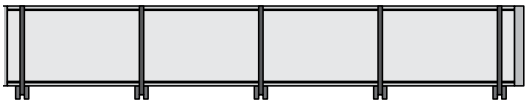


Fig. 03-1 5-batten storage

In the event of storage contrary to the storage regulations described above (pallet or at least 5-batten storage), no warranty can be given for warping.

The material must be stored in closed, heated rooms in which the room temperature is between 15 and 25 °C and the relative humidity is between 40 and 60%.

Prior to opening packaging units, boards must be allowed to acclimatise to room temperature for at least 48 hours.

Prior to returning opened or partially used packaging units to storage it must be ensured that the cover board is replaced on top. This is to prevent contamination and uneven temperature/humidity penetration (due to drafts or heating air), and thus counteract warping effects as well as surface damage.

04 Prior to processing

04.01 Unpacking

Prior to opening packaging units, the panels must be allowed to acclimatize to room temperature for at least 48 hours, depending on the time of year.

Carefully unpack the boards.
Care must be taken whilst opening the packaging to ensure that surfaces are not damaged by sharp tools. Suitable lifting equipment must be used to separate individual boards.

Open the packaging with scissors.
Do not use a sharp blade!

1. Cut the packaging tape.
2. Cut the protective sheeting vertically.
3. Carefully lift the uppermost cover board vertically upwards and without sliding it. This should be done by two people using four vacuum lifting pads. For individual packages, carefully remove the box.
4. Dirt which can get trapped between the individual boards must be completely avoided or removed.

04.02 Checking the boards

Please check RAUVISIO tone for the following points before further processing and therefore the finishing of the goods (see chapter
"4.4 Documents for material warranty"):

- External damage, e.g. cracks or marks
- Surface damage or blemishes
- Planarity
- Color consistency within the production batch

The RAUVISIO tone surfaces are always delivered with a protective film. Despite this protective film, it may be that there are occasional minor defects in the laminates on delivery. These cannot be entirely excluded for technical production reasons and do not constitute a direct reason for complaint.

The adhesive strength of the coating material on the wood-material substrate meets the requirements for tear-outs on both sides. When grouping different boards into one order, it is to be ensured that only boards of the same production batch are used. Uniformity of colour across production batches must be checked prior to processing.

Colour consistency must be checked in natural daylight, although bright sunlight should be avoided. In case of deviations, a colorimeter should be used.

The costs incurred for checking the above mentioned points cannot be accepted by REHAU. This also applies to consequential costs incurred in the further processing of defective goods.

04.03 Conditioning

RAUVISIO tone and all other materials to be processed such as the adhesive and edgebands must be conditioned at room temperature (at least 18 °C) for a sufficient period of time (at least 48 hours).

Processing is also carried out at room temperature. It must be ensured, particularly in the colder months, that all boards are acclimatised. If there is insufficient acclimatisation of the boards due to the stack size, the exposure time should be
adjusted accordingly.

04.04 Documents for material warranty

Delivery notes and shipping labels should be retained to aid batch traceability in the event of a technical issue.

The imprint on the narrow side of the wood-material substrate can be used to clearly identify the production batch. These must be given to the REHAU sales office in the event of a complaint.

05 Processing of RAUVISIO tone

05.01 Proper handling of RAUVISIO boards

Placing the boards on the machine table
The machine table must be large enough, must not have any sharp edges and must have been thoroughly cleaned.

Alternatively: cover the machine table with a clean base (wooden board, box, etc.).

Formatting the boards
The nesting process is recommended to cut the boards to size. When cutting to size using a saw, observe the instructions for positioning the boards on the machine table (see above). Work with a scoring blade.

For some color variants, directional arrows are printed on the transparent protective foil in addition to the REHAU logo. These directional arrows serve as orientation in the installation situation.
The directional arrows must face the same direction for adjacent furniture fronts. We advise pursuing a common orientation across all orders.

Between the processing steps
After milling/sawing, all residue must be removed and all surfaces cleaned.

For transport, place the boards vertically and individually on appropriate trolleys.

Alternatively: Stack the workpieces in layers with clean and padded cardboard/foam material inserted in-between on a pallet.

Edging the workpieces
Anti-static agents should be used whilst edgeband is being applied. Ensure that the boards are fed into the system cleanly and safely. Any chips must be safely removed through the extraction unit. If the laminate lifts during the edging process, we recommend setting the joint milling to 2.5 mm. This ensures a form-fitting transition between the coating material and the edgeband. The increased milling distance must be taken into account when formatting to achieve the desired final dimensions.

Drilling and milling
Extraction must be used during drilling/milling operations to ensure that the swarf is removed.

Packing the workpieces
Stack the workpieces in layers on pallets with a clean and pliable interlay of cardboard or foam between the layers. Use a transport lock to prevent damage due to slipping or similar. Board handling must be carried out using the stacking techniques mentioned in Chapter 03, “Transport, packaging and storage.”

05.02 Mechanical processing of the pressed board

RAUVISIO tone can be processed with most approved woodworking tools. When cutting, a scoring saw blade must be used.

To allow accurate processing, it must be ensured that all tools are sharp, and optimal machine settings are used. It is recommended that the optimal machine settings are determined by means of trials prior to starting production.

05.03 Thermoforming of RAUVISIO tone

The RAUVISIO tone coating material is not suitable for thermal deformation. It was designed solely for use in the two-dimensional range.

05.04 Edging

The use of RAUKANTEX edgeband material is recommended to create a form-fit interlocking between the RAUVISIO tone surface and the narrow edges. The best visual results are achieved using the RAUKANTEX pro edgeband. Thanks to the color-matched polymer functional layer of this “zero-joint edgeband,” no joint line is visible.

A range of matching RAUKANTEX edgebands is available to compliment this product.

The correct processing method is described in the usage instructions Technical delivery specifications sales RAUKANTEX (DML00513). For further information, please contact your REHAU sales office. The resulting component quality (e.g. adhesion of the edgeband, appearance and application qualities) depends on the machine configuration and the raw materials and must be checked by the processor.

Optimum machine settings, tool configuration and cutting speeds are to be established individually prior to production using a series of samples; the REHAU Applications Engineering Department will be happy to support you with this.

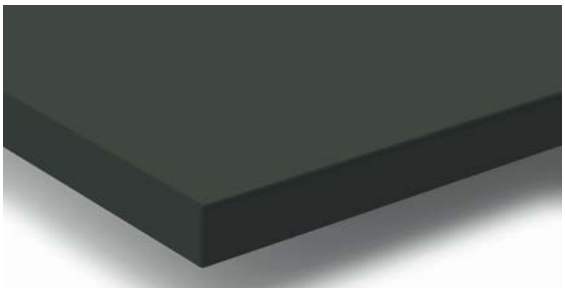


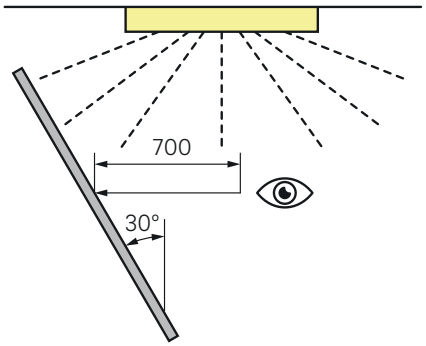
Fig. 05-1 RAUVISIO tone and RAUKANTEX zero-joint edgeband

REHAU offers its customers both the standard primed edgeband RAUKANTEX pure and the 100% polymer zero-joint edgeband RAUKANTEX pro. For components exposed to moisture, use of the zero-joint edgeband RAUKANTEX pro OMR (Optimized Moisture Resistance) is recommended.

06 Technical data of RAUVISIO tone

Product data	RAUVISIO tone
Thickness	18.6 mm ± 0.4 mm
Width[2)]	1300 mm ± 3 mm
Length[2)]	2800 mm ± 10 mm
Angle deviation	± 3 mm/m
Edge defects	15 mm
Surface weight	13.9 kg/m²

[2)] The overlap of the laminate can be up to 10 mm as a result of the manufacturing process.

Visual properties	Test standard	Requirements	Test result
Surface gloss level	DIN EN ISO 2813	▪ Measurement with 60° measurement	Dark colors 3 ± 1 Light colors 4 ± 1
Color	based on AMK-MB-009, 04/2013	▪ no significant changes from the master sample ▪ EVEN COVERAGE properties ▪ Δl: ± 0.5; Δa: ± 0.3 ; Δb: ± 0.35	Fulfilled
Surface	based on AMK-MB-009, 04/2013 	▪ Viewing distance: 700 mm ▪ Illumination intensity: 1000 – 2000 lx ▪ Angle of inclination: 30° to the vertical ▪ Light source color temperature 6500 K (daylight, diffuse light or D65 lamps) ▪ Viewing time: max. 20 seconds ▪ Surface defects up to 2 mm in diameter are permissible on the coating material ▪ Due to the industrial manufacturing process, it is not possible to achieve a flawless surface; small defects and surface irregularities, e.g. due to particles trapped under the coating material, are permissible.	Fulfilled
Light fastness	Based on DIN EN ISO 4892-2, Process B Duration of the test: according to DIN EN ISO 105 B02 Assessment of the sample: to DIN EN ISO 105 A02		≥ 7

Surface properties	Test standard	Test result
Chemical resistance	DIN EN 12720	1B
Scratch-resistance	DIN 68861/T4	Class 4D (> 1.0 to < 1.5 N) For color-intesive variants class 4E (> 0.5 to ≤ 1.0 N)
Micro-scratch resistance	DIN CEN TS 16611 process A	Change in gloss level < 25 % (measurement with 60° measurement geometry)
	DIN CEN TS 16611 process B	Class 5
Performance in dry heat	DIN 68861/T7	7C
Behaviour in moist heat	DIN 68861/T8	8B

Component tests	Test standard	Test result
Temperature resistance	Assessment according to AMK-MB-001	Passed
Admission of water vapor[3)]	Assessment according to AMK-MB-005 (07/2007), module 1	Passed
Humid climate resistance[3)]	Assessment according to AMK-MB-005 (07/2007), module 2	Passed
Alternating climate resistance[3)]	Assessment according to AMK-MB-005 (07/2007), module 3	Passed
Long-term heat storage 4 weeks 50 °C	Assessment after 24h acclimatisation	Passed

The component tests refer to the AMK parts specified in the AMK table with the respectively stated status.
[3)] Proper application quality is required to fulfill the AMK tests.

Protective film

The protective film is intended to protect the surface from dirt and damage that may occur during handling and processing. The protective film and its adhesive are not intended to protect against moisture, temperature or UV rays. RAUVISIO tone surfaces must be stored in a closed room protected from UV rays in conformance with the specified storage conditions (see point 03.03).

If these conditions are met, the protective film can be removed without any problems at least within the first 12 months after delivery. If the duration of storage is exceeded or the storage conditions are not observed, the adhesive may cross-link, which can lead to residues after the protective film is removed. Possible adhesive residues can be removed with polymer cleaner, adhesive remover or white spirit/ mineral spirits.

07 Installation guidelines

1. Fabricated components should only be transported on the original packaging unit.

2. Always unload packaging units sideways and from the middle.

3. Fabricated components should always be stored on the original pallet or using five equal battens.

4. The storage of the fabricated components must not be stored outside or in damp environments.

5. Fabricated components should always be stored appropriately at the installation location and not exposed to strong UV light sources.

6. Acclimatise preassembled components prior to installation for at least 24 hours at room temperature (min. 18 °C). At delivery temperatures below 0 °C, acclimatise the elements for at least 48 hours on all sides.

7. No objects are to be rested on raw boards and preassembled elements as these could cause damage.

8. RAUVISIO tone is suitable for vertical applications indoors. Enquire and check with the manufacturer about special application cases if necessary.

9. All materials and components must be checked for damage or defects prior to processing/assembly.

10. Temporary storage must take place prior to installation exclusively in the original packaging in frost-free and closed rooms.

11. Load-bearing substructures, which are firmly connected to each other, are to be aligned so that they are flat and vertical.

12. To avoid stress cracks, no bending should occur during processing and assembly.

13. Do not bring unprotected corner connections of wooden substrates into contact with moisture prior to installation.

14. In the case of wooden substrate boards, all cut edges and raw board edges must be sealed so that they are watertight.

15. All drilled holes in the wooden substrate boards must be sealed during assembly so that they are watertight.

16. No strong solvents, special cleaners (e.g. drain cleaners, industrial cleaners, abrasive cleaners or abrasive cleaning cloths) or strong chemical substances may be used on the surface.

17. Heavy dirt can cause scratches during cleaning, therefore always clean dirty areas carefully with a microfibre cloth.

18. The surface cannot be polished.

08 Care and usage instructions for the end user

RAUVISIO tone is resistant to most substances found in the household. Aggressive substances acting upon the material for extended periods of time can leave residue or damage the material.

RAUVISIO tone is a polymer surface material that is pleasant and warm to the touch.

Mild cleaning agents without abrasive ingredients can be used for cleaning. Abrasive cleaners, solvents, waxes and steam cleaners are not suitable for cleaning. The suitability of the cleaning agent should be tested in an inconspicuous place with a small amount applied and a short exposure time. Heed the information from the cleaning agent manufacturer.

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Our verbal and written advice with regard to usage is based on years of experience and standardised assumptions and is provided to the best of our knowledge. The intended use of REHAU products is described comprehensively in the technical product information. The latest version can be viewed at www.rehau.com/TI. We have no control over the application, use or processing of the products. Responsibility for these activities therefore remains entirely with the respective user/processor.Where claims for liability nonetheless arise, they shall be governed exclusively according to our terms and conditions, available at www.rehau.com/conditions, insofar as nothing else has been agreed upon with REHAU in writing. This shall also apply for all warranty claims, with the warranty applying to the consistent quality of our products in accordance with our specifications. Subject to technical changes.

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