RAUVISIO CRYSTAL
TECHNICAL INFORMATION
1 GENERAL INFORMATION

Validity
This Technical Information is valid worldwide.

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

⚠️
Our valid Technical Information brochure is to be observed for the processing / assembly and use of RAUVISIO crystal. Our Technical Information is based on empirical values and knowledge acquired up to the time of printing. The transmission of this information includes no 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.

It is essential to ensure that your customers, also including end customers, are aware of the necessity to observe the current Technical Information as well as instructions for care and use for RAUVISIO crystal products.

The instructions for use and care must be provided to the end customer either by yourself or by your customer.

Our Technical Information is subject to continuous revision, whereby previous versions are deemed obsolete and invalid. For your own safety and for the correct application of our products please check at regular intervals whether a more recent version of your Technical Information is available.

Information on packaging, accessories and assembly instructions is to be observed.

Technical information and documents are available on the REHAU home page at the following link:
www.rehau.de/rauvioso-crystal
Whether it is in the kitchen, in the bathroom or in the living room - glass is widely used in furniture design nowadays. Glass lends pieces of furniture an air of elegance and quality. Especially for furniture fronts glass is a popular material due to its high-quality appearance and feel. However, this is also accompanied by extensive production requirements.

The product RAUVISIO crystal combines the high-quality appearance of real glass with the positive properties of the polymer material and therefore offers maximum flexibility as part of the production process.

2.1 RAUVISIO crystal – Product description

RAUVISIO crystal is a coextruded, polymer surface, which consists of multiple layers:

2.0 mm: Transparent layer Acrylate (PMMA)
0.5 mm: Pigmented, coloured layer Acrylic / styrene copolymer

Due to the 2.5 mm thick material combination RAUVISIO crystal enables you to create a real glass effect with outstanding properties with regard to adhesion to the substrate material.

For the surface - wooden substrate system group a technically coordinated balancing foil was developed, which is ideally designed based on the technical properties of the group. As a result, the warpage under the effects of heat and cold as well as fluctuating air humidity is ideally minimised.
The product package is rounded off with the matching laser edge RAUKANTEX visions Duo-Design, which perfects the glass effect in the edgeband area. In order to make optimum use of the visual and functional invisible joint of laser edging for the product group, the technical design of the RAUKANTEX visions Duo-Design laser edge has been amended accordingly.

With the high-quality RAUVISIO crystal system group REHAU opens up a new dimension in the design of furniture and living spaces.
2.2 RAUVISIO crystal – Product composition

RAUVISIO crystal is a composite material consisting of the individual components listed below. The properties of the individual materials as well as proper processing are critical for the overall quality of the furniture components with RAUVISIO crystal.

RAUVISIO crystal:
- 1 Scratch-resistant coating
- 2 Transparent PMMA layer
- 3 Coloured polymer layer
- 4 Adhesive
- 5 Wooden substrate
- 6 Balancing foil

RAUKANTEX visions Duo-Design laser:
- 7 Transparent laser functional layer
- 8 Coloured edgeband edge
- 9 Transparent edgeband edge

RAUVISIO crystal system group with RAUKANTEX visions Duo-Design laser edgeband

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protective foil:</td>
<td>Polyethylene protective foil (PE)</td>
<td>The visible side of the glass laminate is covered with a PE protective foil, which protects the surface during transport, processing and assembly ideally and must only be removed following assembly.</td>
</tr>
<tr>
<td>Glass laminate:</td>
<td>Material thickness 2.5 mm</td>
<td>Increasing the chemical resistance as well as the abrasion and scratch-resistance, achieving a reflective and high gloss glass effect</td>
</tr>
<tr>
<td></td>
<td>Scratch-resistant coating</td>
<td>Depth effect, glass effect</td>
</tr>
<tr>
<td></td>
<td>2.0 mm: Transparent PMMA layer</td>
<td>Colour effect</td>
</tr>
<tr>
<td></td>
<td>0.5 mm: Coloured polymer layer</td>
<td></td>
</tr>
<tr>
<td>Bonding adhesive:</td>
<td>PU bonding adhesive</td>
<td>Ensuring a secure bond to the substrate material</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Independently tested adhesive systems are used for the respective application case in combination with the respective components.</td>
</tr>
<tr>
<td>Substrate material:</td>
<td>Material and thickness are matched to the respective application case</td>
<td>Independently tested substrate materials and thicknesses are used in order to be able to ensure a permanently consistent quality in the respective application case.</td>
</tr>
<tr>
<td>Balancing foil:</td>
<td>Material thickness 2.5 mm in the product range coordination guide for the surface &amp; laser edge</td>
<td>Colour-matched balancing foil; Due to its properties under various climatic conditions, warpage of the whole component within the usual market tolerance range of the wooden board materials industry.</td>
</tr>
</tbody>
</table>
Authorised REHAU processor

In addition to the individual product components, in particular the right processing parameters are also critical for the permanent, high-quality of the system component. In order to ensure the quality of the pressed board, REHAU exclusively supplies the system component consisting of surface - substrate material - balancing foil. The pressing of the individual components is carried out by authorised REHAU processors. The prerequisite for this is the checking and fulfilling of the defined quality requirements.

The pressed board is supplied in large size 1,300 x 2,800 mm.

As a result of this, the REHAU customer has the flexibility to choose the required dimensions of the component.

The matching laser edge RAUKANTEX visions Duo-Design laser rounds off the product package in the product range coordination guide.
2.3 RAUKANTEX visions Duo-Design laser – Real glass effect edgeband design

The perfect glass effect is created through the combination of surface and edgeband. As an edgeband specialist, with the laser-compatible edgeband RAUKANTEX visions Duo-Design REHAU creates the uniform group of the surface, substrate and balancing foil.

Due to a coloured and transparent edge the PMMA edgeband is given a high-quality step effect.

A laser edgeband is used to create an invisible and functional invisible joint between the board and edgeband. A transparent laser functional layer is applied to the reverse of the edgeband material to do this. This creates a transparent connection between the board and edgeband and completes the glass effect.

This system group made up of the board and laser edge creates a complete, jointless edge and therefore a perfect full jacket around the wooden substrate with plastic elements.

Depending on the processing options the edgeband material can be processed as a radius or using different milling geometries.
To create a consistent gloss effect the PMMA edgeband material can be polished to high gloss to match the laminate and edgeband surface, as a result of which a homogeneous, perfect surface finish is created.
As an alternative to the Duo-Design solution there is the option to use a colour-matched mirror-gloss edgeband. In this so-called "Uno solution" the transparent area of the surface material (2 mm transparent PMMA layer) is milled completely into a 45° chamfer and therefore exposed, which creates a high-quality glass appearance. REHAU offers a range of colour-matched edgebands for the RAUVISIO crystal decorative designs which, in particular in conjunction with a colour-matched laser functional layer, ensures a homogeneous appearance of the laminate surfaces as well as in the corner copying area. Furthermore, the Uno variant offers an interesting edging variant due to the use of an adhesion promoter edgeband, particularly if the possibility of laser processing exists.

The edgebands can be used with both laser as well as non-laser variants with adhesion promoter on the reverse from the REHAU Express Collection.

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

The dust that forms is not toxic.

The dust concentration is to be minimised through suitable protective measures such as suction or a dust mask.

Dust from RAUVISIO crystal presents no specific risk of explosion.
The information and recommendations given here do not release the processor from strict adherence to all current safety and environmental regulations and the regulations of the trade supervisory centre and professional association, as these always take precedence.

Safety equipment such as

- Gloves,
- Protective goggles,
- Ear protection,
- Dust mask

is always to be used.

Ventilation & suction:
Ensure good ventilation and suction around the processing machines.

Production dust:
If production dust is inhaled, ensure a supply of fresh air, seek medical advice if necessary.

Work equipment / flammable materials:
Additional working equipment, e.g. alcohol-based cleaners and other highly flammable materials, should only be kept in a safe and well ventilated location.

Extinguishing agents for fire-fighting:
Suitable extinguishing agents for fire-fighting are water spray, foam, CO₂ and extinguishing powder.

A water jet is unsuitable for safety reasons.

When fighting a fire wear suitable protective clothing, and also wear self-contained breathing apparatus when necessary.
4 TRANSPORT, PACKAGING AND STORAGE

4.1 Transport and loading information

Generally, the following transport and loading conditions are to be observed.

Delivery
The boards are shipped on pallets due to the required planity. Following delivery of the pallets unload with a forklift or similar equipment.

If the required equipment is not available the boards can be unloaded by hand.

It is to be ensured when doing this that the boards do not become dirty and are not subjected to any mechanical loads.

Wear gloves:
When unloading by hand suitable protective equipment, e.g. gloves, is to be worn, as sharp edges can cause cuts.

The use of transport aids such as suction lifters, lever holds and board transporters is recommended for handling.

When transporting RAUVISIO crystal boards horizontally bending is not permitted.

4.2 Packaging

Foam non-woven material for protection:
With RAUVISIO crystal it is essential to protect the narrow side as well as the surface. In particular when opening the packaging unit as well as moving / picking the boards dirt that could get in between the individual boards is to be avoided or removed. Otherwise, due to the pressure exerted by the stack of boards / their own weight, dents will inevitably occur on the laminate surfaces. Foam non-woven material is recommended for protecting the surfaces. This will avoid marks being caused on the surface when stacking components.

4.3 Storage

RAUVISIO crystal is supplied on pallets with the appropriate protective boards to cover them. The pallets of RAUVISIO crystal can be stacked. However, due to the stack pressure not more than five pallets should be stacked on top of one another.

Protecting the pallets:
The pallets are to be protected against damage, high temperature and humidity fluctuations as well as a high UV levels of artificial lighting or direct sunlight.

Storage:
The RAUVISIO crystal board material must lie flat and even and must be stored and transported so that it is supported along its length. To do this storage and internal transport on the pallets provided is recommended; otherwise flat and aligned 5-timber storage is required as a minimum (see sketch).

Sketch packaging pallet + 5-timber storage

This will prevent bending or warping.
In the case of improper storage contrary to the storage regulations described above (pallet or at least 5-timber storage) a guarantee cannot be made that warpage will not occur.

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

Prior to opening the packaging unit it is to be ensured that the goods are allowed to acclimatise for a duration suitable for the time of year, min. 48 hours. After opening and removing part of the quantity it is to be ensured that the cover remains on the goods when they are put back into storage, in order to prevent an asymmetrical increase in temperature / moisture (e.g. due to draughts or warm air) and therefore to counter the effects of warpage.
5 PRIOR TO PROCESSING

5.1 Checking deliveries for transport damage

When the goods arrive the external packaging is to be checked immediately for signs of damage:

- If there is any damage, open the packaging in the presence of the haulier and obtain their acceptance of the damage to the goods
- The haulier’s driver is to confirm this by giving their name, the haulier, date and signature
- The damage is to be reported to the haulier within 24 hours

Otherwise the haulier’s insurance will not accept liability!

5.2 Checking the boards

Please check the pressed RAUVISIO crystal system components for the following points:

- External damage, e.g. cracks or marks
- Surface damage
- Warpage
- Colour uniformity within the production batch

RAUVISIO crystal is generally supplied with a protective foil. Even with this protective foil it may be that there are slight scratches or dents in the boards when delivered. This cannot be avoided completely due to the production process and does not represent a direct cause for complaint.

When grouping different laminates into one order it is to be ensured that only boards of the same production number are used.

Check for colour uniformity in daylight, not in bright sunlight.

If the production numbers are different, the colour compatibility is to be checked prior to processing.

5.3 Conditioning

RAUVISIO crystal and all other materials to be processed, e.g. edgeband, are to be conditioned prior to processing at room temperature (min. 18 °C) for a duration of at least 48 hours. Processing is also carried out at room temperature.

It is to be ensured, in particular in the colder months, that conditioning of all boards takes place. If due to the stack size the conditioning of the boards in the middle of the stack is insufficient, the duration is to be adjusted accordingly.
6.1 Mechanical processing of RAUVISIO crystal

RAUVISIO crystal can be processed with most approved and sharp woodworking tools. The polyethylene protective foil must remain on the surface during machining. Tears in and delamination of the plastic laminates must be prevented by using suitable tools.

To check the quality of the RAUVISIO crystal system group test processing on samples is recommended.

Optimum machine parameters, 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.

6.1.1 Cutting RAUVISIO crystal

Various factors contribute to a good cut result:
- Correct saw blade projection
- Processing speed
- Tooth shape
- Tooth pitch
- Number of revolutions
- Cutting speed

Depending on the cut coverage a hard metal-tipped (HW) or diamond-tipped (DP) circular saw blade can be used.

Format sawing
Generally saws with a large number of teeth are recommended.

The best cut quality is achieved with the tooth shape combination trapezoidal-flat-chamfered (TR-FL-FA). Saws with alternating tooth shape and axis angle on the front also achieve good cut results. Saw blades with hollow teeth produce an inferior cut quality (bursts in the top layer).

Edges that are finished well on both sides are only achieved by using an appropriate scoring unit.

The saw blade projection should be 20 – 30 mm.

Recommended cutting speed: 60 – 70 m/sec.
Feed per tooth: 0.03 – 0.05 mm.
6.1.2 Milling on straightline edgebanders

Generally the material can be processed with full carbide or carbide-tipped tools, carbide rotary board milling cutters or also with diamond-tipped milling cutters. The tools should however cut with alternating axis angles. Waves may be evident in the case of rotary board milling cutters. Using the tools in clamping systems with a high concentricity achieves visible advantages. A crystal clear edge in the area of the polymer glass board cannot be achieved with a milling cutter. If this is necessary, a special polishing cutter must be used.

Processing on CNC – Stationary machines

<table>
<thead>
<tr>
<th>Clamping device:</th>
<th>Hydraulic expansion chuck, force shrink fit chuck or heat shrink fit chuck</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tool:</td>
<td>Carbide end milling cutter, rotary board milling cutter with alternating axis angles, diamond-tipped end milling cutter Z=2 or Z=3, depending on the required feed speed</td>
</tr>
<tr>
<td>Cutting speed:</td>
<td>Depending on the diameter: 15-25 m/sec</td>
</tr>
<tr>
<td>Tooth feed:</td>
<td>0.15 – 0.25 mm (in no case ≤ 0.1 mm)</td>
</tr>
<tr>
<td>Processing:</td>
<td>In counter to board travel</td>
</tr>
</tbody>
</table>

Table milling machine and milling cutters for straightline edgebanders

<table>
<thead>
<tr>
<th>Tool:</th>
<th>Cutter heads with carbide cutting inserts (polished) or diamond-tipped (DP) milling cutter with as large as possible an axis angle are recommended. Polished cutting edges and precision sanded clearance angle are recommended.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter:</td>
<td>Large as possible</td>
</tr>
<tr>
<td>Cutting speed:</td>
<td>50-60 m/sec. Example: Ø100 mm ⇒ 12,000 U/min, Ø125 mm ⇒ 9,000 U/min, Ø150 mm ⇒ 8,000 U/min, Ø180 mm ⇒ 6,000 U/min</td>
</tr>
<tr>
<td>Tooth feed:</td>
<td>0.3 – 0.5 mm</td>
</tr>
</tbody>
</table>

Chipper for straightline edgebanders

<table>
<thead>
<tr>
<th>Tool:</th>
<th>Chippers with a low cutting pressure are recommended here.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting speed:</td>
<td>80 m/sec</td>
</tr>
<tr>
<td>Tooth feed:</td>
<td>0.15 – 0.20 mm</td>
</tr>
</tbody>
</table>

6.1.3 Drilling RAUVISIO crystal

Drilling the dowel holes in the polymer glass layer: Conventional HW dowel drills achieve the best results here. Satisfactory results cannot be achieved with drilling pins. However, rapid drilling is required (mode S-S). With slow drilling (mode L-S) long plastic splinters are formed around the drill.

Feed: 3-4 m/min
Number of revolutions: 4500 U/min

Drilling the dowel holes in the polymer balancing foil: A conventional HW dowel drill can be used. The best hole edges are achieved with the VHW high speed dowel drill. Rapid drilling is required (mode S-S). With slow drilling (mode L-S) plastic splinters are formed around the drill. Good results can also be achieved in the balancing foil with drilling pins.

Feed: 3-4 m/min
Number of revolutions: 4500 U/min

Through-holes:
The best hole edges on the inlet side (glass laminate) and on the outlet side (balancing foil) are achieved with HW standard passage drills.

Feed: 3-4 m/min
Number of revolutions: 4500 U/min

Rapid drilling is required (mode S-S). The slow drilling mode (L-S-L) cannot be used here either, because plastic splinters form around the drill.

Drill holes for fittings and hinges:
A standard cylinder head drill is recommended. Slow drilling (mode L-S) leads almost inevitably to melting of the hole edge and to the formation of long plastic splinters, that could accumulate around the drill.

Feed: 1.5 - 2 m/min
Number of revolutions: 3000 U/min

A number of revolutions above n = 4000 U/min is not recommended.

6.1.4 Service life

The service life of the tools and the work result obviously depend on several factors, e.g. the material, the tool and the machine. Service life trials with the RAUVISIO crystal material achieved a higher service life than for processing a melamine-coated chipboard. Due to the versatility of the processing machines and the varying complexity of the tasks, we recommend that the customer-specific requirements are discussed with the responsible REHAU sales office or your tool manufacturer.

The findings presented were derived in conjunction with established tool manufacturers, detailed recommendations for machine parameters and recommendations for tools can be provided by your REHAU sales office.
6.2 Edging RAUVISIO crystal

See processing instructions / TDS RAUKANTEX laser edge (PMMA) and RAUKANTEX visions / magic 3D (V-M 25/01)

Extract about processing:

The laser-compatible edgeband materials RAUKANTEX visions Duo-Design are made from the material PMMA. They are designed for processing on edgbanding machined with CO₂ or diode laser processing.

A transparent laser functional layer is applied to the reverse of the edgeband material. The suitability of RAUKANTEX laser edge is checked by the customer by way of processing trials.

For the proper processing of RAUKANTEX laser edge REHAU recommends the required specific laser energy “Espez.”. The value, e.g. “Espez. = 21J/cm²” depends on the colour and printed in each case on the label on the inside of the roll of edgeband. By inputting the specific laser energy into the respective edgeband program the laser equipment automatically calculates the laser output required for the board thickness used and corresponding processing feed. By processing RAUKANTEX laser edge using the recommended Espez homogeneous melting of the functional layer across the whole surface is achieved. The resulting component quality (e.g. adhesion of the edgeband, appearance and application properties) depends on the machine settings and the board quality used and is to be checked by the processor.

When processing RAUKANTEX visions Duo-Design laser it is to be ensured in particular that sufficient pressure is applied to the narrow, transparent area of the edge through to the transparent area of the glass laminate, as well as synchronisation between the edgeband feed and board feed in order to obtain optimum transparency in the glass effect.

Optimum machine parameters, 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.
RAUVISIO crystal stands for a system group consisting of surface - substrate - balancing foil and is designed for vertical applications indoors. Horizontal applications (e.g. worktops) are excluded by this Technical Information.

The technical data for RAUVISIO crystal at a glance:

<table>
<thead>
<tr>
<th>Product data</th>
<th>Test standard</th>
<th>Technical data</th>
<th>Tolerance / Limit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAUVISIO crystal – Surface</td>
<td></td>
<td>2.5 mm</td>
<td>± 0.1 mm</td>
</tr>
<tr>
<td>Total thickness glass laminate</td>
<td></td>
<td>2.0 mm</td>
<td>± 0.1 mm</td>
</tr>
<tr>
<td>Tolerance total</td>
<td></td>
<td>0.5 mm</td>
<td>± 0.1 mm</td>
</tr>
<tr>
<td>Transparent layer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coloured layer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAUVISIO crystal – Balancing foil</td>
<td>Acrylic / styrene copolymer</td>
<td>2.5 mm</td>
<td>± 0.1 mm</td>
</tr>
<tr>
<td>Board thickness Large size board (pressed board)</td>
<td>as per technical drawing based on DIN 438-2</td>
<td>19.2 mm</td>
<td>± 0.4 mm</td>
</tr>
<tr>
<td>(Surface – Wooden substrate – Balancing foil)</td>
<td></td>
<td>16.2 mm</td>
<td>± 0.4 mm</td>
</tr>
<tr>
<td>- Furniture front (substrate MDF 14 [mm])</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Back panel (substrate MDF 11 [mm])</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width system component</td>
<td>as per technical drawing based on DIN 438-2</td>
<td>1300 mm</td>
<td>± 1.5 mm</td>
</tr>
<tr>
<td>Length system component</td>
<td>as per technical drawing based on DIN 438-2</td>
<td>2800 mm</td>
<td>± 5 mm</td>
</tr>
<tr>
<td>Angle deviation</td>
<td>as per technical drawing based on DIN 438-2</td>
<td>90°</td>
<td>± 5°</td>
</tr>
<tr>
<td>Edge defects</td>
<td>as per technical drawing based on DIN 438-2</td>
<td>15 mm</td>
<td></td>
</tr>
<tr>
<td>Weight per square metre Pressed board</td>
<td></td>
<td>19.2 mm: ~ 16 kg/m²</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>16.2 mm: ~ 14 kg/m²</td>
<td></td>
</tr>
</tbody>
</table>

Glass laminate RAUVISIO crystal

<table>
<thead>
<tr>
<th>Material properties</th>
<th>Test standard</th>
<th>Technical data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw density glass laminate</td>
<td>DIN EN 323</td>
<td>1.18 kg/dm³</td>
</tr>
<tr>
<td>Raw density balancing foil</td>
<td>DIN EN 323</td>
<td>1.16 kg/dm³</td>
</tr>
<tr>
<td>Fire behaviour</td>
<td>DIN 4102/1</td>
<td>B 2</td>
</tr>
<tr>
<td>Material unit / Sand content</td>
<td>Ignition residue</td>
<td>≤ 1 %</td>
</tr>
<tr>
<td>Hardness Shore D’</td>
<td>DIN ISO 7619-1</td>
<td>91 ± 3</td>
</tr>
<tr>
<td>Vicat softening temperature glass laminate &amp; balancing foil</td>
<td>DIN EN ISO 306 – Art. B50</td>
<td>≥ 99 °C</td>
</tr>
</tbody>
</table>

Lightfastness based on DIN EN ISO 4892-2, Art. B (behind window glass) Assessment to DIN EN ISO 105 A02 ≥ Level 7

The scratch-resistant, coated PMMA surface of the glass laminate is protected by a special PE foil which should not be removed until after assembly.
### Glass laminate RAUVISIO crystal

**Surface properties - mechanical / physical**

<table>
<thead>
<tr>
<th>Property</th>
<th>Test standard</th>
<th>Requirement</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical resistance²</td>
<td>DIN 68861 / T1</td>
<td>1 A</td>
<td>see table below</td>
</tr>
<tr>
<td>Scratch-resistance</td>
<td>DIN 68861 / T4</td>
<td>4C</td>
<td>1.5 N tested</td>
</tr>
<tr>
<td>Micro-scratch resistance</td>
<td>IHD-W-466 (Art. A)</td>
<td>Class 1</td>
<td>Fulfilled</td>
</tr>
<tr>
<td>Behaviour in dry heat</td>
<td>68861 / T7 / DIN EN 12722</td>
<td>7D</td>
<td>70 °C</td>
</tr>
<tr>
<td></td>
<td>DIN CEN TS 16209</td>
<td>Class C</td>
<td>100 °C</td>
</tr>
<tr>
<td>Behaviour in moist heat</td>
<td>DIN 68861 / T8 / DIN EN 12721</td>
<td>8B</td>
<td>70 °C</td>
</tr>
<tr>
<td>Cross-hatch test</td>
<td>DIN EN ISO 2409</td>
<td>GT 0-1</td>
<td>Fulfilled</td>
</tr>
<tr>
<td>Behaviour in water vapour</td>
<td>DIN 438-2</td>
<td>Level 5</td>
<td>no changes</td>
</tr>
</tbody>
</table>

**Component tests (on the edged component)¹**

The scope of supply from REHAU includes only the RAUVISIO crystal without edging. The details below refer to the finished, edged component with RAUKANTEX visions Duo-Design laser. It is advised that REHAU only accepts warranty liability for its scope of supply as per the REHAU specification, not for the finished, edged component.

The results of the component tests on the finished, edged component depend heavily in particular on the machine and process parameters to be set by the customer for processing RAUVISIO crystal, using the suitable edgeband as well as full compliance with the REHAU processing instructions in accordance with this Technical Information. With regard to setting the machine and process parameters, the REHAU technical applications department will provide the appropriate support. Please note that our advice relating to technical applications is to the best of our knowledge correct, but we cannot accept any liability for this free service that is provided without obligation.

¹ The component tests refer to the parts described in the table below of the AMK with the corresponding status below in each case.

<table>
<thead>
<tr>
<th>Component tests</th>
<th>Test standard</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature resistance</td>
<td>Assessment to AMK-MB-001 (05/03)</td>
<td>passed</td>
</tr>
<tr>
<td>Infiltration of water vapour</td>
<td>Assessment to AMK-MB-005 (07/2007), Module 1</td>
<td>passed</td>
</tr>
<tr>
<td>Humid climate resistance</td>
<td>Assessment to AMK-MB-005 (07/2007), Module 2</td>
<td>passed</td>
</tr>
<tr>
<td>Alternating climate resistance</td>
<td>Assessment to AMK-MB-005 (07/2007), Module 3</td>
<td>passed</td>
</tr>
<tr>
<td>Long-term heat storage 4 weeks 50 °C</td>
<td>Assessment after 24h acclimatisation</td>
<td>passed</td>
</tr>
</tbody>
</table>

² The testing of the chemical resistance to DIN 68861-1 includes the following substances, other substances have not been tested specifically and are to be tested by the customer separately. Test results apply exclusively for the lacquered board surface and not for mechanically exposed radii or milling in the milled area.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>Result 5</td>
</tr>
<tr>
<td>Citric acid</td>
<td>Result 5</td>
</tr>
<tr>
<td>Sodium carbonate</td>
<td>Result 5</td>
</tr>
<tr>
<td>Ammonia water</td>
<td>Result 5</td>
</tr>
<tr>
<td>Ethyl alcohol</td>
<td>Result 5</td>
</tr>
<tr>
<td>White wine, red wine, fortified wine</td>
<td>Result 5</td>
</tr>
<tr>
<td>Beer</td>
<td>Result 5</td>
</tr>
<tr>
<td>Cola</td>
<td>Result 5</td>
</tr>
<tr>
<td>Instant coffee</td>
<td>Result 5</td>
</tr>
<tr>
<td>Black tea</td>
<td>Result 5</td>
</tr>
<tr>
<td>Blackcurrant juice</td>
<td>Result 5</td>
</tr>
<tr>
<td>Evaporated milk</td>
<td>Result 5</td>
</tr>
<tr>
<td>Water</td>
<td>Result 5</td>
</tr>
<tr>
<td>Petrol</td>
<td>Result 5</td>
</tr>
<tr>
<td>Acetone</td>
<td>Result 5</td>
</tr>
<tr>
<td>Ethyl-butylacetate</td>
<td>Result 5</td>
</tr>
<tr>
<td>Butter</td>
<td>Result 5</td>
</tr>
<tr>
<td>Olive oil</td>
<td>Result 5</td>
</tr>
<tr>
<td>Mustard</td>
<td>Result 5</td>
</tr>
<tr>
<td>Cooking salt</td>
<td>Result 5</td>
</tr>
<tr>
<td>Onion juice</td>
<td>Result 5</td>
</tr>
<tr>
<td>Disinfectants</td>
<td>Result 5</td>
</tr>
<tr>
<td>Black ball pen-Paste ink</td>
<td>Result 5</td>
</tr>
<tr>
<td>Stamping ink</td>
<td>Result 5</td>
</tr>
<tr>
<td>Cleaning agent</td>
<td>Result 5</td>
</tr>
<tr>
<td>Cleaning solution</td>
<td>Result 5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical resistance</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>No visible change</td>
</tr>
<tr>
<td>4</td>
<td>Just noticeable change in gloss or colour</td>
</tr>
<tr>
<td>3</td>
<td>Slight change in gloss or colour; the structure of the test surface is not changed</td>
</tr>
<tr>
<td>2</td>
<td>Heavy marks visible; the structure of the test surface is however largely undamaged</td>
</tr>
<tr>
<td>1</td>
<td>Heavy marks visible; the structure of the test surface is changed</td>
</tr>
<tr>
<td>0</td>
<td>Test surface severely changed or destroyed</td>
</tr>
</tbody>
</table>
Only transport large size boards on pallets with level and stable base protection boards along the length (e.g. MDF 18).

Always unload / load from the short side in the centre.

Do not store large size boards and fabricated boards in damp rooms and not directly on the ground.

Do not store large size boards and fabricated boards either outside or in areas with UV light sources.

Acclimatise elements prior to installation for at least 24 hours at room temperature (min. 18 °C). At delivery temperatures below 5 °C the elements must be conditioned for at least 48 hours on all sides.

Do not rest any objects on large size boards and fabricated elements, as this could lead to damage.

Boards made from RAUVISIO crystal are laminated with an environmentally safe polyethylene foil for protection during transport and storage. The surface protection should remain on the board until it is time to use the finished part at the end customer.

RAUVISIO crystal is suitable for vertical applications indoors (in particular furniture fronts and splashback applications). Special applications beyond the confirmed properties described above must be checked independently by the processor / customer or queried with and, where necessary, approved by the manufacturer.

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

To avoid stress cracking during processing and assembly, temporary storage must take place prior to installation exclusively in the original packaging in frost-free and closed rooms.

The narrow sides of the wooden substrate without edgeband must not come into contact with moisture. The cuts edges are always to be sealed with suitable edging (RAUKANTEX visions Duo-Design laser or RAUKANTEX mirror-gloss laser).

All drill holes in the wooden substrate boards are to be sealed during assembly so that they are watertight.

Damage to the surface can be caused by strong chemical substances, e.g. strong solvents, special cleaners (e.g. drain cleaners, industrial cleaners, etc.) as well as aggressive scouring agents.

Scratches can be caused during cleaning by the following elements: Grains of sand or similar, abrasive scrubbing utensils / cleaning sponges, etc.

Treatment with an anti-static plastic cleaner is an effective measure to minimise static charging.

Do not stand on RAUVISIO crystal products.

Do not cut with sharp objects.

Do not work with tools on the surface.
Congratulations on choosing a product made from this high-quality and durable material.

RAUVISIO crystal is a hard-wearing and resistant surface material made from acrylic. It is suitable for vertical application indoors.

The non-porous, homogeneous material is hygienic and suitable for contact with foodstuffs and is resistant to fungal and bacterial growth.

The product is resistant to all household chemicals and substance such as disinfectants, extended use of aggressive substances can leave marks or damage the material. Chemical resistance according to the table on Page 16. Testing the chemical resistance of other substances that are not listed in this table is the responsibility of the user.

RAUVISIO crystal has an outstanding depth effect. The surface has a high gloss as well as scratch and abrasion-resistant coating, so that domestic wear and tear is avoided as far as possible.

RAUVISIO crystal is easy to clean - most soiling and finger marks can be removed with water and a microfibre cloth. In addition to this, household, liquid cleaners can be used to clean the surface.

RAUVISIO is easy to clean

Strong solvents, special cleaners (e.g. drain cleaners, industrial cleaners) as well as aggressive scouring agents and strong chemical substances may damage the surface. Remove stubborn soiling with a soft sponge, common plastic cleaner or liquid cleaner (without scourer).

Do not use abrasive cleaning sponges with scourers (e.g. Scotch Brite, scouring pads, etc.) or brushes, these can cause scratches if a lot of force is applied.

Refrain from using mechanical cleaning processes, e.g. with razor blades, knives or scrapers, etc. Scratches may be caused when doing this and the abrasion-resistant coating may be damaged.
Your REHAU technical applications department will be happy to answer any questions regarding the processing of RAUVISIO crystal and the matching RAUKANTEX laser edge.
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Our verbal and written advice relating to technical applications is based on experience and is to the best of our knowledge correct but is given without obligation. Working conditions and use under conditions for which this product was not intended and over which we have no influence exclude any claim resulting from our information. We recommend that the suitability of any REHAU product for the application should be checked. Utilisation and processing of our products are beyond our control and are therefore exclusively your responsibility. In the event that a liability is nevertheless considered, then this will be based exclusively on our conditions of sale, which can be seen under www.rehau.de/LZB. Our warranty assumes consistent quality of our products in accordance with our specification and in accordance with our general conditions of sale.

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Our recommendation is always to contact your local REHAU sales office for the latest information as they will always have the most accurate and up-to-date information.

This document contains information on the availability of products, prices and working conditions. It is intended to provide a reference point for your information and may not be complete.

Consistent quality of our products in accordance with our specification and in accordance with our general conditions of sale. The information contained in this document is correct but is given without obligation. Working conditions and use under conditions for which this product was not intended and over which we have no influence exclude any claim resulting from our information. We recommend that the suitability of any REHAU product for the application should be checked. Utilisation and processing of our products are beyond our control and are therefore exclusively your responsibility. In the event that a liability is nevertheless considered, then this will be based exclusively on our conditions of sale, which can be seen under www.rehau.de/LZB. Our warranty assumes consistent quality of our products in accordance with our specification and in accordance with our general conditions of sale.