

RAUVISIO ingrain™ wood fiber laminate surface
Technical information




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This manual contains safety-related information that requires your special attention. It is indicated with the safety alert symbol and the signal words described below:

 DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a risk of property damage, including damage to the individual components.

DISCLAIMER: The technical suggestions in this guide are designed to provide you with the best results when working with RAUVISIO ingrain.

01 Information and safety notes

Latest version of the technical information

To ensure your safety and proper use of our products, please regularly check whether a more recent version of the technical information is available.

You can obtain the latest version of the document from your local retailer, your REHAU sales office or download it from na.rehau.com/ingrain

Proper use

RAUVISIO products may only be planned, processed and installed in accordance with this technical information. 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 transmission of this information includes no assurances as to 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, also including end customers, are aware of the necessity to observe the current technical information as well as instructions for the care and use for RAUVISIO products. The instructions for use and care must be provided to the end customer either by yourself or by your customer.

Note to our distribution partners and customers that resell RAUVISIO products:

Please also inform your customers about the need to observe the current technical information and make it available to your customers.

Note to the processor:

Please ensure that at least the installation guidelines and the instructions for use and care are made available to your customers and processing and installation firms.

Safety information and installation instructions

Observe the instructions on the packaging, accessories and installation instructions. Keep the installation instructions handy for easy access.

If you do not understand the safety information or the individual installation procedures or if something is unclear, please contact your REHAU sales office.

Applicable guidelines and safety equipment

Strictly observe all applicable safety and environmental regulations as well as the regulations of the trade supervisory authority and the employers' liability insurance association. Such regulations always take precedence over the information and recommendations in this technical information.



CAUTION

To reduce the risk of injury always use safety equipment such as

- Gloves
- Safety goggles
- Ear protection
- Dust mask

Adhesives and auxiliary materials

Strictly observe the safety instructions for any adhesives.



CAUTION

To reduce the risk of injury always store work equipment such as alcohol-based cleaning products and other easily flammable materials in safe and well-ventilated places.

Ventilation/extraction, production dust

Dust created by drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. Appropriate protective measures should be taken when processing this material.

California residents, visit www.rehau.com/us-en/ca-prop-65 for more information.

**CAUTION**

To reduce the risk of injury do not inhale production dust. If you inhale production dust, get fresh air and seek medical attention if you experience any symptoms.

Protective measures and disposal

RAUVISIO ingrain is a composite made of wooden substrate and wood fiber laminate, which has ecologically sound properties. The dust that forms is not toxic. The dust concentration is to be minimized through suitable protective measures such as extraction or a dust mask.

Dust from RAUVISIO ingrain does not pose any specific risk of explosion.

Disposal code in accordance with the Waste Catalogue Ordinance:

- 170203/Construction and demolition waste consisting of wood, glass, plastic

Fire behavior

Due to its composition of wooden substrate and wood fiber laminate, RAUVISIO ingrain demonstrates favorable fire behavior and normal flammability. In case of fire, no toxic substances such as heavy metals or halogens are released. The same fire-fighting techniques can be used as for other construction materials containing wood.

**WARNING**

To reduce the risk of serious injury or death use the following fire extinguishing procedures.

Extinguishing fires

Suitable extinguishing agents for fighting fires

- Water spray
- Foam
- CO₂
- Extinguishing powder

A water jet is unsuitable for safety reasons.

When extinguishing fires, wear appropriate protective clothing and, if necessary, a self-contained breathing apparatus.

02 Directions for use and applications

RAUVISIO ingrain wood fiber laminate surface

RAUVISIO ingrain is a wood fiber laminate that resembles and performs like pre-finished veneer. This product can be purchased in the following forms:

- Top and bottom faced panel
- Finished component
- Laminate with pressure sensitive adhesive (PSA)

NOTICE

To reduce the risk of property damage use the following procedures regarding sawing/milling/drilling of panels.

Sawing/milling/drilling of panels

RAUVISIO ingrain panels can be processed with most approved woodworking tools. In order to enable precise processing, ensured that the tools are sharp and that ideal machine settings are used. Here, the optimum machine parameters must be established prior to series production via a sequence of sampling.

When cutting RAUVISIO ingrain panels, it is important to use a sacrificial panel below the RAUVISIO ingrain panel to ensure a clean cut edge of the decorative laminate. A thin panel will suffice. It is recommended to cut a test panel and evaluate first before cutting the entire job. The use of a sacrificial panel underneath is also recommended when drilling through the panel.

Special note about using masking tapes when cutting:

When performing a special cutting operation (such as miter cutting) that requires the use of a masking tape to achieve a clean cut, please use caution when removing the tape from the surface. Do not peel the tape starting at the cut edge as this can risk damaging the laminate surface. Instead, peel the opposite edge/corner that is closest to the center of the panel. Peel the tape back on itself flat against the surface (not upward) and at about a 45 degree angle (when looking down on the surface) towards the cut edge until the tape has been removed. Always use a clean release style masking tape. We recommend a clean release tape such as the 3M 2090 masking tape for best results. Remove tape within 2 hours of application.

Edgebanding of panels

The use of a matching REHAU edgeband material is recommended to create a uniform appearance between the RAUVISIO ingrain surface and edge. The best visual results are achieved by using REHAU LaserEdge™.

To achieve the best visual result, a clean cut edge of the laminate is necessary. Please ensure you are getting a clean cut with your edgebander's pre-mill. Some pre-mill units can cause light fraying of the cut edge, causing a visual difference to the rest of the laminate. If you are not satisfied with the quality of the cut using the pre-mill, you can turn off the pre-mill stage on the edgebander.

It is recommended to turn off some of the edgebanding fluids normally used during processing, as some of these fluids can leave a glossy sheen on the edge of the cut component. Run a test piece and evaluate before running the entire job.

Touch up marker

To achieve the highest quality visual appearance of the cut edge, some colors may benefit from the use of touch up markers to hide light fraying of the surface edge. The table below indicates which markers are recommended by color:

RAUVISIO ingrain color	Marker brand	Marker color
Acacia Oak 1343	Varathane	Walnut
Bourbon Teak 1831	Varathane	Walnut
Charred Ebony 1960	Varathane	Black
Cognac Pine 1826	Varathane	Mahogany
Dawning Ash 1509	Varathane	Gray
Heirloom Oak 1318	Varathane	Gray
Honecomb Oak 1348	Master's Touch	Pale Cream #142
Milestone Maple 1502	NA	None
Nomad Oak 1338	Varathane	Cherry
Roasted Oak 1345	Scratch Fix	Black Brown
Seaside Pine 1823	NA	None
Steel Oak 1349	Varathane	Gray
Sunlit Pine 1827	Master's Touch	Panel Cream #142
Whispering Walnut 1125	Varathane	Walnut
Windswept Pine 1824	Varathane	Gray

Apply touch up marker to edge of laminate. To remove excess marker, spray area with isopropyl alcohol and wipe immediately with a soft cloth.

Please contact REHAU Customer Service for more information on where to buy touch up markers, or for other related questions.

03 Handling

NOTICE

To reduce the risk of property damage use the following handling and transporting procedures.

Proper handling of the panels is important. The risks of being damaged is highest when transporting and handling. Carefully lift the panels. Avoid letting panels slip and or drag on one another. When moving individual panels from a pallet, two people are required to lift and move the panel, or a vacuum lift system should be used to avoid scratching the decorative surfaces.

04 Storage

NOTICE

To reduce the risk of damage use the following storage procedures.

Panels and laminates with PSA need to be stored in dry and protected environments, as prescribed by the international reference standards (EN 438). Panels and laminates with PSA must be stored in a dry environment, and ideally with a temperature of 64-72°F (18-22°C), and a 50-60% relative humidity. Panels should be stored horizontally and be fully supported along the entire length at all times during storage and transportation. Panels must be stored on a clean, dry surface, such as a raw MDF panel. Panels must be kept clean and free of dirt, dust, debris and other contaminants. The top panel should be kept covered to avoid contamination.

05 Maintenance and cleaning

NOTICE

RAUVISIO ingrain requires little maintenance. To achieve good results when removing stains, follow the indications listed below.

Ordinary maintenance

Clean the panels with a damp cotton cloth. Most stains are removed with water and an ordinary gentle household soap. With resistant stains, a more concentrated soap can be used. Always dry with a clean cotton cloth.

Slightly dirty surfaces - daily maintenance

Soak a clean cloth in water containing a household soap or detergent. Use a damp cloth to clean the surface. Wipe with a dry and clean cloth.

Dirty surfaces - cleaning thoroughly

Remove the dirt. Soak a clean cloth in water containing household soap and wring it. As you wipe the surface clean, ensure you always move the cloth in the direction of the wood grain. Wipe with a dry and clean cloth.

To be avoided

Never use abrasive or particularly aggressive products, such as steel wool, abrasive powder or other furniture polishes, because they can cause irreparable surface scratches or discolorations.

06 Technical data

For standard RAUVISIO ingrain boards and cabinet doors

Properties	Test method	Property or attribute	Unit	Results
Surface quality	EN 438-2.4	Spots, dirt and similar surface defects	mm ² /ms	≤ 1
		Fibers, hair and scratches	mm ² /m ²	≤ 10
Dimensional tolerances	EN 438-2.5	Thickness	mm	± 0.40
	EN 438-2.6	Width	mm	± 3.0
	EN 438-2.6	Length	mm	± 3.0
Resistance to scratching	EN 15186:2012	Method B: Load required to scratch	N	0.7
Tendency to retain dirt	9300:2015	Appearance	Rating	3
Light fastness (xenon arc)	EN 15187:200	Contrast	Gray scale rating	> 4
Resistance to dry heat (180°C)	EN 12722:2013	Classification	Rating	A
		Appearance	Rating	≥ 4
Resistance to wet heat (100°C)	EN 12721:1997	Classification	Rating	A
		Appearance	Rating	5
Surface resistance to cold liquids	EN 12720:2013	Classification	Rating	A
		Acetic acid (10%) at 16h	Rating	5
		Ammonia (10%) at 16h	Rating	5
		Citric acid (10%) at 16h	Rating	5
		Cleaning agent at 16h	Rating	5
		Coffee at 16h	Rating	5
		Ethanol (48%) at 6h	Rating	5
		Paraffin oil at 24h	Rating	5
		Water at 24h	Rating	5
		Perspiration basic at 1h	Rating	5
Chemical resistance	ANSI/KCMA A161.1-2012 Section 9.4	Withstands staining from vinegar, lemon, orange & grape juices, ketchup, coffee, olive oil, 100 proof alcohol, detergent solution, mustard	Pass/Fail	Pass

Reaction to fire

Properties	Test method	Property or attribute	Unit	Results
Reaction to fire	ASTM E84-20	Flame spread and smoke developed	Classification	Class A

The Reaction to Fire of RAUVISIO ingrain is related to the final composite panel where the laminate is bonded to a suitable substrate. The results may be different depending on the substrate, glue and bonding techniques. The results shown are from tests of the laminate bonded to gypsum board. Class A panels available upon request. Standard RAUVISIO ingrain boards have not been tested for flammability.

Environmental properties of surface material

Properties	Test method	Property or attribute	Unit	Results
VOC emissions	EN ISO 16000-9	Classification	Rating	A+
		Formaldehyde	mg/m ³	≤ 0.012
		Acetaldehyde	mg/m ³	≤ 0.019
		Toluene	mg/m ³	≤ 0.002
		Tetrachloroethylene	mg/m ³	≤ 0.002
		Xylene	mg/m ³	≤ 0.002
		Trimethylbenzene	mg/m ³	≤ 0.002
		TVOC	mg/m ³	≤ 0.1
Persistent organic pollutants (POPs)	Persistent organic pollutants (POPs) EU 2019/1021 Regulation	Contains substances from POPs and EU 2019/1021	Yes/No	No
Safe Drinking Water and Toxic Enforcement Act of 1986	Proposition 65	Contains substances from Prop 65	Yes/No	No
REACH	1907/2006 Art 59	Contains substances on candidate list	Yes/No	No

07 Technical data

For RAUVISIO ingrain CPL laminate

Properties	Test method	Property or attribute	Unit	Results
Surface quality	EN 438-2.4	Spots, dirt and similar surface defects	mm ² /ms	≤ 1
		Fibers, hair and scratches	mm ² /m ²	≤ 10
Dimensional tolerances	EN 438-2.5	Thickness	mm	± 0.05
	EN 438-2.6	Width	mm	± 3.0
	EN 438-2.6	Length	mm	± 5.0
Resistance to scratching	EN 15186:2012	Method B: Load required to scratch	N	0.6
Tendency to retain dirt	9300:2015	Appearance	Rating	3
Light fastness (xenon arc)	EN 15187:200	Contrast	Gray scale rating	> 4
Resistance to dry heat (180°C)	EN 12722:2013	Classification	Rating	C
		Appearance	Rating	5
Resistance to wet heat (100°C)	EN 12721:1997	Classification	Rating	A
		Appearance	Rating	5
Surface resistance to cold liquids	EN 12720:2013	Classification	Rating	A
		Acetic acid (10%) at 16h	Rating	5
		Ammonia (10%) at 16h	Rating	5
		Citric acid (10%) at 16h	Rating	5
		Cleaning agent at 16h	Rating	5
		Coffee at 16h	Rating	5
		Ethanol (48%) at 6h	Rating	5
		Paraffin oil at 24h	Rating	5
		Water at 24h	Rating	5
		Perspiration basic at 1h	Rating	5

Environmental properties of surface material

Properties	Test method	Property or attribute	Unit	Results
VOC emissions	EN ISO 16000-9	Classification	Rating	A
		Formaldehyde	mg/m ³	≤ 0.052
		Acetaldehyde	mg/m ³	≤ 0.010
		Toluene	mg/m ³	≤ 0.002
		Tetrachloroethylene	mg/m ³	≤ 0.002
		Xylene	mg/m ³	≤ 0.002
		Trimethylbenzene	mg/m ³	≤ 0.002
		TVOC	mg/m ³	≤ 0.18
Persistent organic pollutants (POPs)	Persistent organic pollutants (POPs) EU 2019/1021 Regulation	Contains substances from POPs and EU 2019/1021	Yes/No	No
Safe Drinking Water and Toxic Enforcement Act of 1986	Proposition 65	Contains substances from Prop 65	Yes/No	No
REACH	1907/2006 Art 59	Contains substances on candidate list	Yes/No	No

08 Installation guidelines

1. Fabricated components should only be transported in their original packaging.
2. Always unload packaging units sideways and from the middle.
3. Fabricated components should always be stored on the original pallet or using four-timber storage.
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.
13. Heavy dirt can cause scratches during cleaning, therefore always clean dirty areas carefully with a cotton cloth.
14. Do not stand on unassembled or assembled RAUVISIO ingrain components.
15. RAUVISIO ingrain fabricated panels are suitable for indoor assembly for indoor vertical applications only.

Acclimate fabricated components prior to installation for at least 24 hours at room temperature (min. 65°F / 18°C). At delivery temperatures below 32°F / 0°C, acclimate the elements for at least 48 hours on all sides.

6. No objects are to be rested on raw boards and fabricated components as these could cause damage.
7. RAUVISIO ingrain is suitable for vertical applications indoors. Enquire and check with the manufacturer about special application cases if necessary.
8. All materials and components must be checked for damage or defects prior to processing/assembly.
9. Do not allow exposed edges of wooden substrates into contact with moisture prior to assembly.
10. In the case of wooden substrates all cut edges and raw board edges must be sealed so that they are watertight. The use of RAUVISIO laser edge can ensure edges are watertight.
11. All drilled holes in the wooden substrates must be sealed during assembly so that they are watertight.
12. No strong solvents, special cleaners (e.g., drain cleaners, industrial cleaners, lubricants or abrasive cleaning cloths) or strong chemical substances may be used on the surface.

Customer Service Contacts

Hours Monday to Friday, 8 am to 6:30 pm EST

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For updates to publication, visit na.rehau.com/resourcecenter

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122.12 01.2023