



Product Datasheet



RE-Y-STONE
Biocomposite Board

This information describes the composition of RE-Y-STONE® boards and provides instructions for handling, processing, use, and disposal of these boards. RE-Y-STONE® boards do not comprise any hazardous substances as defined by the chemicals law and therefore do not require any special markings or a product safety sheet.

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1 Material Description and Composition

RE-Y-STONE® is a biocomposite board consisting of recycled core and decorative papers plus a natural resin. This new type of composite material is made of close to 100% of renewable resources. The fiber material as well as the resin matrix is derived from renewable plant materials. This means there is no direct dependency on fossil, non-renewable resources (oil, natural gas).

The recycled paper is made from 100% post-consumer paper. Post-consumer paper is paper, cardboard, and/or wood fibers collected for the purpose of recycling after the initial product has been used as intended.

The caramel-colored bio-resin is derived from sugar cane. The resin is part of bagasse, a by-product of the sugar industry that is obtained when extracting the juice from sugar cane. Once hardened, the bio-resin possesses the qualities of thermosetting plastic and, together with the natural fibers, forms a hard, highly stress-resistant, dimensionally stable board with a tough surface.

RE-Y-STONE® boards are large boards with a hardwearing surface and homogenous, closed cutting edges. In thicknesses below 3 mm, the biocomposite board can be glued to substrate materials. In greater material thicknesses, i.e. more than 5 mm, the boards show outstanding dimensional stability and flexural resistance, making them self-supporting. The material also has the advantage of a high degree of flexural rigidity due to its high modulus of elasticity.

More than 60% of the RE-Y-STONE® board consists of recycled paper and the remaining 30 to 40% is a bio-resin.

RE-Y-STONE® is available in numerous dimensions, thicknesses, and surface finishes.

2 Information on Use

RE-Y-STONE® is a biocomposite board consisting of recycled core and decorative papers plus a natural resin.

The composition should also be considered during the use of RE-Y-STONE® since there are some similarities with "solid wood".

Colour and structure differences within a RE-Y-STONE® board are completely normal and underline the product's unique character. These individual features are related to the composition of almost 100% renewable raw materials.

Even colour changes and discolourations caused by different light and sun irradiation and varying usage are characteristic for this product and therefore completely normal. All these features demonstrate the sustainability and high quality of the material and are therefore characteristic and under no circumstances to be considered or assessed as defective.

RE-Y-STONE® is a sustainable product. When used as horizontal furniture finish, the following notes are to be observed:

1. Avoid stagnant humidity and prevent effects of water (e. g. damp sponges, dishes, cups and other damp objects).
2. Liquid impurities (caused e. g. by alcohol, vinegar, fruit juice, coffee, tea, sauces etc.) may lead to stains or discolourations on the surface. They must be wiped away from the surface immediately and additionally cleaned afterwards.
3. Objects which may cause scratches should not be pushed and/or pulled on the surface. We recommend using a suitable coaster, like e. g. a cutting board, for slicing and handling.

3 Storage and Transport

Storage and transport should be in accordance with our recommendations; special precautions are not required. As defined by transport regulations, RE-Y-STONE® boards are not classified as hazardous or toxic substances, which means a corresponding marking is not required

4 Handling and Processing of RE-Y-STONE®

Compliance with the usual safety guidelines concerning dedusting and fire safety is necessary when processing or working with RE-Y-STONE®.

Always use safety gloves when handling RE-Y-STONE® boards since they have sharp edges. Contact with RE-Y-STONE® dust does not pose any special problems but a very small number of people have allergic reactions to various types of processing and machining dusts.

5 Environmental and Health Aspects during Use

RE-Y-STONE® is a hardening and with that inert duroplastic synthetic material. The decorative surfaces are resistant to many common household cleaners and chemicals.

RE-Y-STONE® boards are products and not any chemical substances, which is why the REACH Regulation does not apply to them.

RE-Y-STONE® was awarded the "LGA-tested for harmful substances" certificate by the TÜV Rheinland LGA. This certificate is only granted to products with the lowest hazardous substance emissions, which are often significantly less than required by law.

Assessment of the test results of the emission test:

The sum of the emissions of volatile organic compounds (TVOC) after 28 days was far below the evaluation limit.

The sum of the emissions of semi-volatile organic compounds (STVOC) after 28 days was far below the evaluation limit.

CMR substances were no longer detected after 3 and 28 days.

The emissions of formaldehyde and higher aldehydes were far below the evaluation limit after 28 days.

French VOC Directive

All building products plus finishing and equipment materials which will be launched on the French market have to be classified according to their emissions and marked with the new French ÉMISSION DANS L'AIR INTÉRIEUR label.

RE-Y-STONE® has been tested by TÜV Rheinland LGA in accordance with this new French directive and awarded the label "A+" The label A+ is awarded to materials which have the lowest VOC emissions.

Tested according to DIN and approved bio-based – for more sustainability

Sustainability means, for instance, minimizing CO² emissions and protecting resources, and making only minimal use of finite raw materials. Bio-based products on the basis of renewable resources are indispensable elements of an environmentally-friendly recycling management.

Bio-based products are manufactured with raw materials which, during their growth, absorbed the equal amount of CO₂ they subsequently release during their disposal and/or incineration.

RE-Y-STONE® has been tested by TÜV Rheinland Agroislab according to ASTM D6866 and awarded the DIN CERTCO certificate "DIN-proof biobased > 85%" (Tested according to DIN and approved bio-based > 85%). This is the best possible classification bio-based products can achieve.

Certification of bio-based products:

DIN CERTCO certifies bio-based products on the basis of the organic content and bio-based carbon content. The "DIN-Geprüft" (DIN-Tested) mark is awarded on the basis of the content of renewable raw materials. This percentage is also stated in the certificate's appendix and describes the content of the bio-based raw materials used in relation to the organic carbon contained.

The bio-based content in relation to the carbon content is a standardised, recognized analysis method. A test may approve this value independently and anytime.

6 Maintenance, Care, and Cleaning

RE-Y-STONE® surfaces are neither corrosive nor do they oxidize. They require no additional surface treatment (e.g. varnish or paint).

All decorative RE-Y-STONE® surfaces can be cleaned with a mild soap solution. Abrasive cleaners (such as scouring powder) should be avoided.

7 RE-Y-STONE® Boards in Case of Fire

The biocomposite boards are extremely difficult to set on fire and actually delay the flame development, providing more time to escape. Toxic substances may remain in the smoke after incomplete combustion – as is the case with all other organic materials.

Fires involving RE-Y-STONE® can be fought with the same fire fighting and extinguishing techniques and equipment as applied to other wood-containing building materials.

8 Energy Recovery

Due to their high calorific value (18 - 20 MJ/kg*), RE-Y-STONE® boards are especially well suited for thermal recycling. When completely burned at 700°C, they turn into water and carbon dioxide. Combustion of RE-Y-STONE® is CO₂-neutral. At the end of the RE-Y-STONE® lifecycle, no more carbon dioxide (CO₂) is released than the plant-based resources have withdrawn from the atmosphere during their growth. The material and energy cycle is closed.

RE-Y-STONE® boards therefore have the prerequisites for energetic recycling as defined by §6 des Recycling and Waste Management Act (Kreislaufwirtschaftsgesetz). Combustion also has the added benefit of saving non-renewable sources of energy such as oil or natural gas.

The conditions for good combustion processes are ensured with modern and officially approved industrial combustion plants. The ash from these combustion processed can be disposed in controlled landfills.

9 Waste Disposal

RE-Y-STONE® biocomposite boards can be disposed in controlled landfills, which currently meet national and/or regional rules and regulations.

10 Recycling

RE-Y-STONE® biocomposite boards can be chopped up and then used as filler for other synthetic materials. They are especially well suited for producing wood-plastic composite materials (WPC – wood-plastic composites). The term “wood-plastic composite” (WPC) is usually used for materials or products made from natural fibers and a polymer.

11 Technical Data

11.1 Physical and Chemical Properties

11.1.1	Physical state	Solid
11.1.2	Bulk density	≤ 1.4 g/cm ³
11.1.3	Solubility	Insoluble in water, oil, methanol, diethyl ether, n-octanol
11.1.4	Boiling point	None
11.1.5	Gas emissions	None
11.1.6	Melt point	RE-Y-STONE [®] biocomposite boards do not melt
11.1.7	Calorific value	18 - 20 MJ/kg
11.1.8	Heavy metals	RE-Y-STONE [®] biocomposite boards do not contain any toxic compounds based on antimony, barium, cadmium, chromelll, chromeVI, lead, mercury, selenium

11.2 Stability and Reactivity Data

11.2.1	Stability	RE-Y-STONE [®] biocomposite boards are stable and resistant; they are neither reactive nor corrosive.
11.2.2	Hazardous reactions	None
11.2.3	Incompatibilities	Strong acids or alkaline solutions affect the surface.

11.3 Fire and Explosion Safety Data

11.3.1	Ignition temperature	Approx. 400°C
11.3.2	Flashpoint	None
11.3.3	Thermal decomposition	Possible above 250°C. Toxic gases may be possible (e.g. carbon monoxide, carbon dioxide) depending on fire conditions (temperature, oxygen content, etc.).
11.3.4	Smoke and toxicity	Toxic substances may remain in the smoke after incomplete combustion – as is the case with all other organic materials.
11.3.5	Flammability	The biocomposite boards are difficult to set on fire. They only burn during a real fire, when affected by open flames.
11.3.6	Extinguishing agents	The biocomposite boards are classified as class A. Carbon dioxide, water jet, dry chemical foam can be used to extinguish the fire. Water suppresses and prevents renewed flare-ups. Persons should use breathing apparatuses and fire protection clothing in case of fire.
11.3.7	Explosion risk	Processing, cutting, milling of RE-Y-STONE [®] biocomposite boards creates class ST-1 dust. The usual safety precautions and sufficient ventilation must be implemented.



11.3.8	Explosion limit	Dust concentrations should be less than 30 mg/m ³ .
11.3.9	Protection from explosion and fire	Biocomposite boards should be treated like wood materials in case of fire.
11.4	Electrostatic behavior	It minimizes generating electrostatic charges by contact changes or friction with other materials. Grounding is not required. The surface resistance is 10 ⁹ - 10 ¹² ohm and the charging capacity in accordance with CEI IEC1340-4-1 is $V < 2$ kV. This means RE-Y-STONE® is an antistatic agent.
11.5	Storage and transport	RE-Y-STONE® biocomposite boards are not classified as a hazardous substance or product and therefore are not subject to special storage or transport requirements.
11.6	Processing	The use of safety gloves is recommended to protect hands from sharp edges and safety goggles are recommended to prevent eye injuries. Special safety or protective equipment is not required with the exception of equipment to prevent dust during processing.
11.7	Waste disposal	Please comply with local rules and regulations. Burning should be done in approved industrial combustion plants.
11.8	Health aspects	RE-Y-STONE® biocomposite boards are classified as not hazardous to people and animals. No toxic or ecotoxic effects have been detected or reported.
11.8.1	Workplaces	The usual safety rules and regulations for dust prevention and extraction apply.
11.8.2	Pentachlorophenol	RE-Y-STONE® biocomposite boards do not contain PCP (pentachlorophenol).
11.8.3	Miscellaneous	RE-Y-STONE® biocomposite boards are not considered a hazardous substance or product as defined by the German Hazardous Substances Ordinance (GefStoffV).

All of the information in this product datasheet is based on the current technical state of knowledge but does not represent a warranty or guarantee. A guarantee as to the suitability for specific application purposes or used is not provided.