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INTELLIGENTWOOD

made of Resysta®

- **Water-resistant**
- **No fading**
- **100% recyclable**
- **Natural look and feel of wood**

reddot design award
winner 2017

Water-resistant panel with the natural look & feel of wood

UPB BOARD

CONTENT

NEW: INTELLIGENT WOOD

NATURAL FIBREBOARDS WITH THE ecoplus³ TECHNOLOGY

INTELLIGENT WOOD is the first company to rely on the ecoplus³ technology by Resysta International for all its products. This completely new process allows us to produce sustainable natural fibreboards (= universal performance boards/UPB). Natural fibreboards with the ecoplus³ technology by Resysta combine economic prices with excellent freedom of design. They are 100% recyclable, waterproof, low-maintenance and virtually indistinguishable from tropical wood in terms of their optic and tactile properties.

Products using the ecoplus³ technology also have a remarkably low density. At a maximum weight of 0.5 g/cm³, they are extremely lightweight. This makes their handling for production and installation especially effortless. The low expansion of the material makes them even easier to install. On account of its reduced thermal conductivity, it prevents e.g. terraces and façades from heating up too fast. INTELLIGENT WOOD products with the ecoplus³ technology by Resysta offer truly intelligent solutions compared to other panelling materials.

INTELLIGENT WOOD products from Resysta could be used wherever extreme weather is hard on any material - even at high heat. If the product is installed properly, heat-induced material changes will not affect its appearance or quality. This is why INTELLIGENT WOOD products from Resysta stay beautiful for a long time.

5

INTELLIGENT WOOD panel material, universally applicable.

INTELLIGENT WOOD = WOOD 2.0
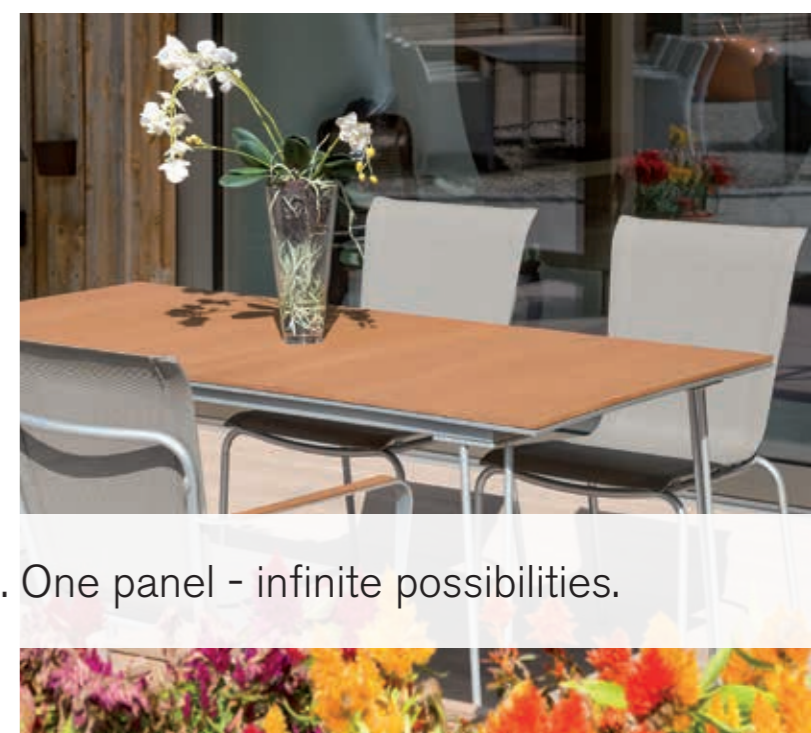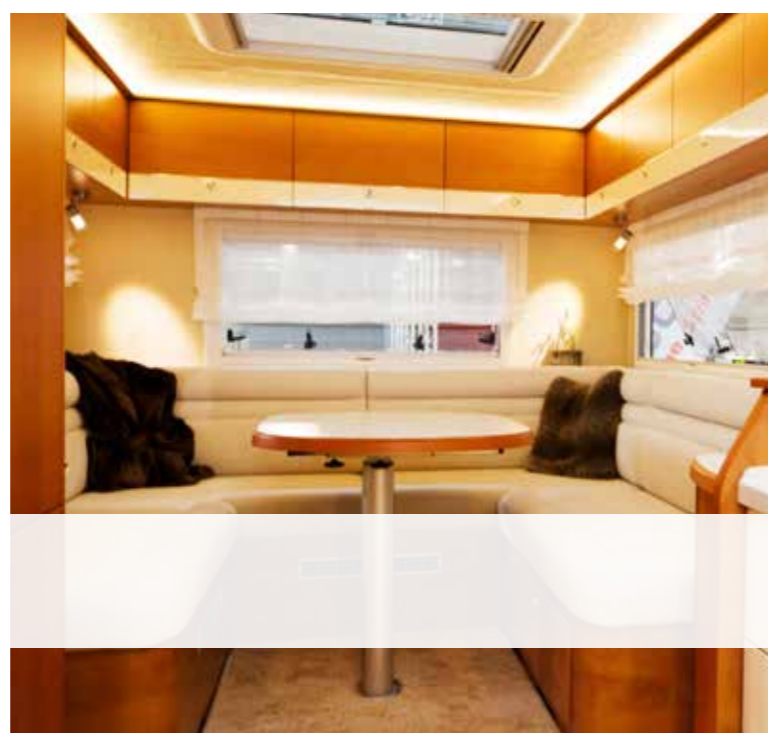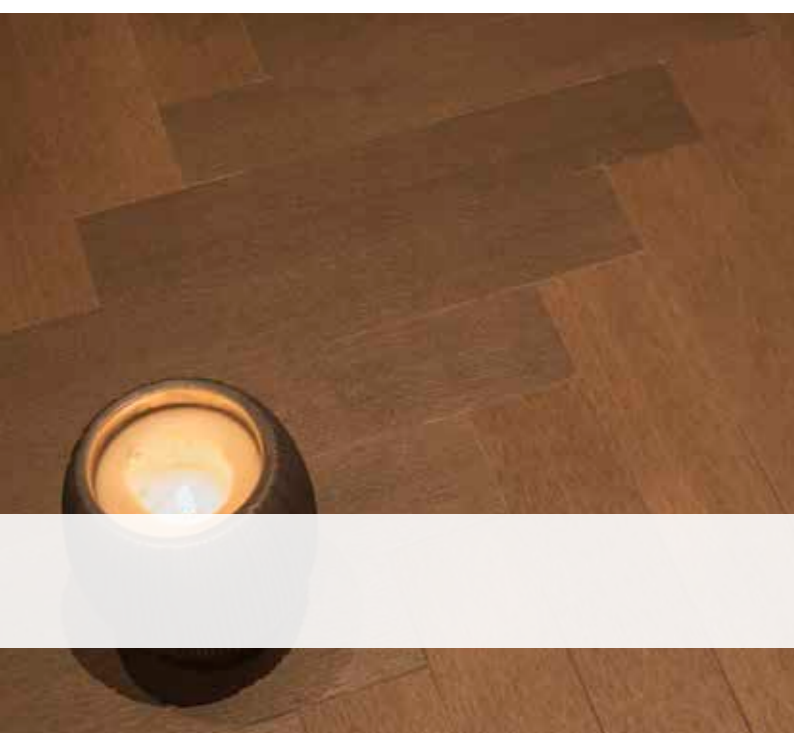
MORE VERSATILE, DURABLE AND SUSTAINABLE

The INTELLIGENT WOOD Universal Performance Boards made of Resysta are incredibly versatile. They do not just look and feel like wood, they can also be processed like wood. And unlike wood, INTELLIGENT WOOD panels are even thermoformable.

This provides unbelievable ease of design for numerous application areas. INTELLIGENT WOOD shines with its application as flooring material as well as for use in façades or interior decoration.

For more than 15 years, the material has been establishing its advantages in worldwide projects throughout various climatic zones and under the most severe conditions. INTELLIGENT WOOD is easy to care for and more durable than wood or WPC due to its water and UV resistance, and it is 100% recyclable. And since it is made up of approximately 60% rice husks, a waste product from the food industry, INTELLIGENT WOOD products are extremely sustainable and are an example of the technological advancement of natural raw materials - a true wood 2.0.

Rice is cultivated world-wide. Therefore, INTELLIGENT WOOD can always be sourced locally for the manufacturing of products from Resysta rice husks. Since INTELLIGENT WOOD is mainly produced for the European market, European rice husks are also used for production. In Europe, approximately 5 million tonnes of rice are grown annually in France, Spain and especially in Italy - enough to produce all the necessary INTELLIGENT WOOD products from Resysta for the European market.

7

INTELLIGENT WOOD. One panel - infinite possibilities.

INTELLIGENT WOOD - PRESERVES NATURE

CREATES ALTERNATIVES

The tropical rainforests stretch over our planet like a green, living belt. Countless animal and plant species are found there, many of which have not even been discovered to date. This 'green lung' stores large amounts of carbon dioxide and is indispensable for maintaining the climate on the earth.

But saving the rainforest is easier said than done as long as the demand for tropical woods continues to rise. With Resysta, everyone can make an important contribution to the protection of the rainforest. Resysta is absolutely free of wood, so no single tree needs to be cut.

Remaining tropical rainforests in the world

2,600 million acres — **1960**

500 million acres — **2010**

5 YEARS

20 YEARS

While scientists from the University of Maryland (USA) were evaluating numerous satellite images in 2015, they discovered that over a period of five years parts of the tropical rainforest, roughly the size of Germany, disappear irretrievably from our earth. In the period from 2000 to 2020 this corresponds to an area as large as Germany, France, Italy, Austria and Switzerland combined. In other words, every minute the equivalent of almost 18 football fields disappears.
(Sources: Geophysical Research Letters, published AGU Publications, USA, 2015, Do-Hyung Kim, Joseph O. Sexton, John R. Townshend)

INTELLIGENT WOOD - in harmony with nature

ADVANTAGES

INTELLIGENT WOOD DOES NOT SHY

AWAY FROM ANY COMPARISON

INTELLIGENTWOOD
made of Resysta®

LOOK AND FEEL

- natural look of wood
- feels like wood
- variable surface structure
- individual color application
- different finishing methods
- no greying
- Subsequent surface design possible
  (Color Concept with infinite color selection)
- Various surface design possible (eg printing)

ENVIRONMENT

- environmentally friendly
- long lifetime
- free of phenol and formaldehyde resins
- free of adhesive
- recyclable
- made of renewable resources
- excellent ecological balance
- natural product
- no tree needs to be felled

RESISTANCE

- 100% water resistant
- no splintering
- weatherproof
- no graying
- no cracks or chips
- no insect attack
- high resistance to wood staining fungi
- high resistance to wood-destroying fungi
- rot resistant
- very low swelling and shrinkage
- high UV resistance against destruction
- no distortion due to moisture

TECHNICAL ADVANTAGES

- homogeneous edge
- high screw-withdrawal resistance
- nail suitable
- bonding suitable
- thermoform suitable
- easy to glue
- cold weldable
- grooves weldable
- non-slip even with standing water
- easy handling due to light weight
- Can be used with conventional
  woodworking machines and tools
- easy to mill and edit
- consistent quality
- easy solutions for the optimization of
  mechanical stability are possible
- over 20 years of material experience
- hardly inflammable DIN EN 13501 possible

INDIVIDUAL SIZE

- standard: 1220 mm x 2440 mm
- or length available as desired
- thickness: 8 mm, 12 mm, 16 mm,
  20 mm, 25 mm
- Other thicknesses and dimensions
  can be produced upon request.

COST SAVING

- Less expensive than many other materials
- easy processing
- no lipping, no veneer necessary
- standardized quality
- ideal for craft and industry
- low maintenance
- universal material
- fast availability

13

INTELLIGENT WOOD MADE OF RESYSTA

LOOKS LIKE WOOD AND ALSO FEELS LIKE IT

INTELLIGENT WOOD products are manufactured from Resysta. Resysta is a very versatile material, which is used wherever materials have to be particularly resistant and wood is not as suitable in the long run, e.g. for garden furniture or even in shipbuilding. The basic prerequisite for the developers was therefore to replace wood, and especially tropical wood, with products made of Resysta.

The idea: Resysta consists of approx. 60% rice husks, a natural waste material of the food industry. Combined with a patented surface treatment, this forms products that are difficult to distinguish from wood and highlight this optical impression with every touch. It has the warmth and lightness of wood.

INTELLIGENT WOOD

LOVES WATER

Due to its components (approx. 60% rice husks, approx. 22% rock salts and approx. 18% mineral oil), INTELLIGENT WOOD products, like all products from Resysta, are absolutely water-resistant. Therefore, INTELLIGENT WOOD products do not swell up. They can even be installed in the water! They also resist salt and chlorine water; they are non-slip and even float in the water like wood (depending on the starting material).

Even under the toughest conditions INTELLIGENT WOOD products made of Resysta do not rot or decay. These characteristics are also used by large cruise ship companies, who use Resysta's deck and railing products, thus eliminating the need for continuous replacement and maintenance of these parts. Rain, dampness or even waterlogging do not affect your façade or your terrace made of INTELLIGENT WOOD.

INTELLIGENT WOOD

IS RESISTANT TO MOULD, FUNGI AND TERMITES

Wood is undoubtedly a beautiful material. Its diversity and natural appearance is loved by many people. But as soon as moisture comes into play, wood becomes very vulnerable. It begins to rot, which can permanently damage the wood in its basic structure. Fungi can be formed, which can be harmful in a residential setting.

In warmer regions, termites become a danger because they can seriously damage the stability of buildings. INTELLIGENT WOOD does not absorb moisture. Therefore, it does not rot and fungi also have no chance. Furthermore, termites do not like rice husks. Therefore, you will be able to enjoy your façades and terraces from INTELLIGENT WOOD for a long time.

INTELLIGENT WOOD

WITH THE PREMIUM EDGE

Most building materials are not produced in the required sizes. Panels of any kind are therefore cut to size on site. A cut into a material, however, leaves a wide variety of edges, depending on the material, which have to be reworked and sometimes even covered with edge strips so that the edges meet optical requirements.
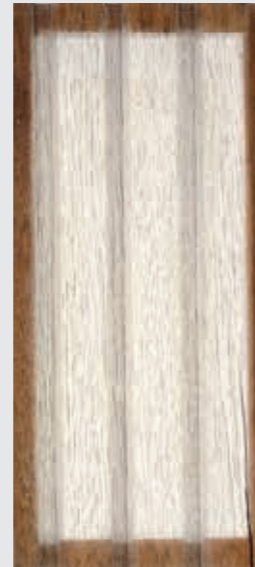
INTELLIGENT WOOD products can generally be processed like wood - nailing, sanding, milling, gluing, drilling and, of course, sawing - the only difference being that INTELLIGENT WOOD edges do not have to be reworked since INTELLIGENT WOOD does not splinter or fray - the INTELLIGENT WOOD edge sticks. After each cut, further processing can be started immediately without great effort.
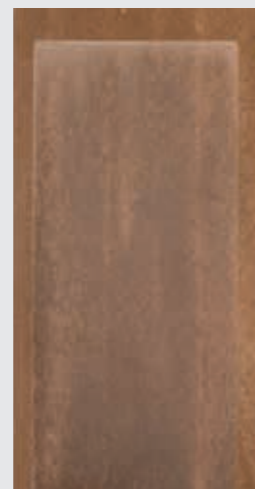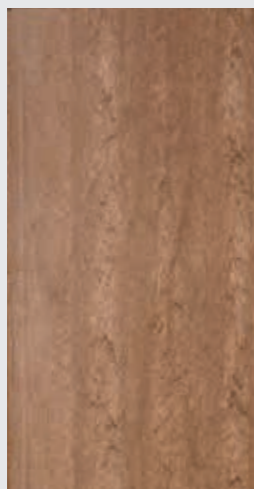
BANGKIRAI
brittle and cracked surface

WPC
embossed wood surface
optics made in the USA
strong discolouration
(fading), rough surface,
loss of gloss, some white
particles selectively visible

FOAMED PVC
made in USA
strongly greyed surface

Determined colour change in greyscale levels

INTELLIGENT WOOD IN COMPARISON

BEST RESULTS AFTER 2,000 HOURS XENON TEST

Task formulation
Resysta carried out 'artificial weathering of selected materials' in collaboration with the renowned Dresden 'eph-Institute'.
The Xenon test was selected as the test method.

Implementation of test
The artificial weathering took place over 2,000 h (after 650 MJ/m2 irradiation) in a Xenon test device CI 3000 (test equipment KL 31) according to DIN EN 11341. The artificial weathering was carried out under the following test conditions:

• 55 °C black standard temperature
• 50% relative humidity
• Irradiation strength 0.5W (m2 x nm) at 340 nm
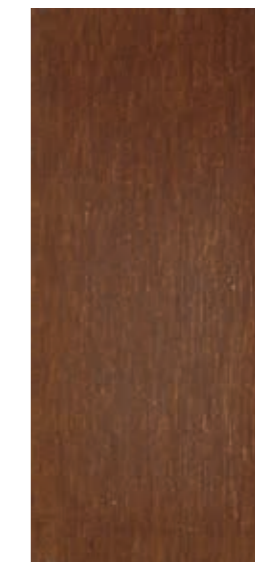• Weathering cycle: Spray cycle 18 min, drying phase 102 min

For this test over 2,000 hours a factor of 15-25 can be applied. Assuming a factor of 20 and an average of 7 sun hours per day (Central Europe), this corresponds to outside weathering of over 15 years.

The following evaluations were carried out to characterize the weather resistance:
• visual detection of the colour change using Grey scale according to DIN EN 20105-A02
• visual assessment after 500 h, 1,000 h, 1,500 h and 2,000 h.

Test material
Two test specimens each were made available to the ' EPH Institute' from 15 material samples.
For each variant, 1 test specimen was weathered.

Summary:
Of all the materials tested, Resysta combines natural optics and haptics most convincingly
with longevity.

RESYSTA + VARNISH (WALNUT) + 2K
recognisable colour change, single white particles easily visible

INTELLIGENT WOOD
made of Resysta®

- **Large colour selection**
- **Finishes all Resysta products**
- **Permanently resistant to moisture and UV radiation**
- **Extremely low-maintenance**
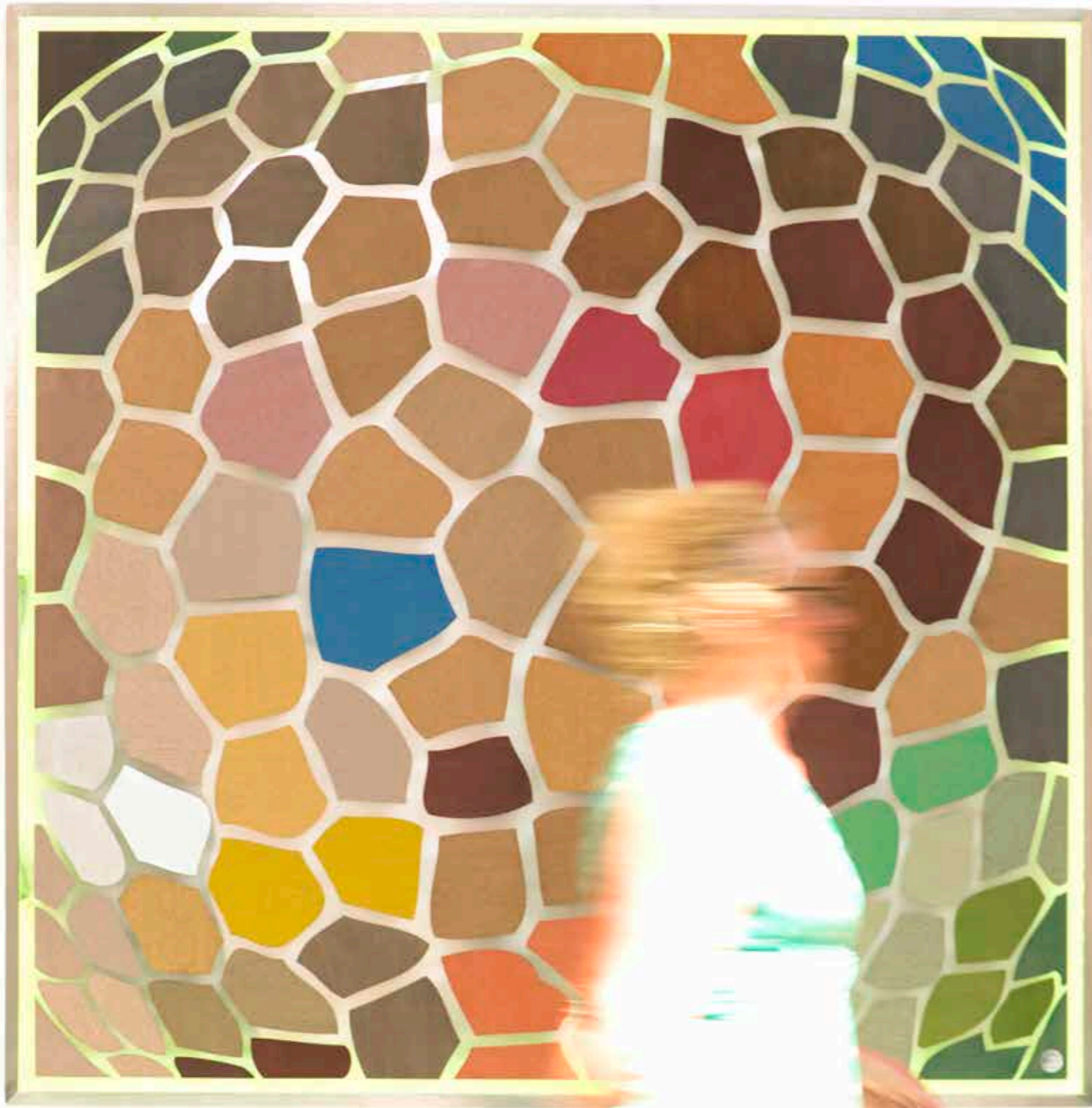
Impressive **COLOUR DIVERSITY**

EMOTION FOR YOUR BUILDING

Colours evoke emotions. Have courage to display your colours and delight your visitors with an emotional reception. INTELLIGENT WOOD offers over 30 different colours to give your façade or other INTELLIGENT WOOD elements made of Resysta an emotional touch. In addition, INTELLIGENT WOOD varnishes, lacquers and oils increase the resistance to water and UV. INTELLIGENT WOOD colours – an emotional upgrade for your products made of Resysta.

INTELLIGENT WOOD Colour Concept - naturally beautiful.

INTELLIGENT WOOD

ABSOLUTE FREEDOM IN COLOUR DESIGN

There is only one Ferrari red, a specific Starbucks green, and a particular Facebook blue. These colours are precisely defined and should be exactly the same world-wide. For this purpose, colours have to be adapted individually depending on the substrate.

INTELLIGENT WOOD colours can be individually adjusted at a certain purchase quantity, so that your specifications, taste or simply your favourite colours are met 100%. This allows you to give your project a completely individual and unique touch.

INTELLIGENT WOOD Color Concept

ADVANTAGES UPB BOARD MADE OF RESYSTA

COMPARED TO OTHER BOARD MATERIALS

HDF, MDF, GLUED WOOD, PLYWOOD, SOLID WOOD, PVC

LOOK AND FEEL
- natural wood optic
- natural wood haptic
- ecologically valuable
- no tree needs to be felled

RESISTANCE
- no graying
- 100% water resistant
- no rotting
- no insect attack
- high resistance to wood staining fungi
- high resistance to wood-destroying fungi
- high UV resistance against destruction
- very low swelling and shrinkage
- no cracks or chips

ENVIRONMENT
- green product
- free of phenol and formaldehyde resins
- free of adhesive
- recyclable
- made of renewable resources
- excellent ecological balance
- natural product
- no tree needs to be felled

TECHNICAL ADVANTAGES
- Less expensive than many other materials
- homogeneous edge
- easy to thermoform
- easy to glue
- cold weldable
- grooves weldable
- no distortion due to moisture
- non-slip even with standing water
- Subsequent surface design possible
  (Color Concept with infinite color selection)
- Various surface design possible (eg printing)
- no foils and veneer necessary
- easy handling due to light weight
- inflammable DIN EN 13501 possible
- Can be used with conventional
  woodworking machines and tools
- easy to mill and edit
- fast availability
- easy solutions for the optimization of
  mechanical stability are possible
- over 20 years of material experience
- consistent quality

PROCESSING INFORMATION

INTELLIGENT WOOD CAN BE PROCESSED LIKE WOOD

INTELLIGENT WOOD products are 100% water resistant and can be processed with or without surface treatment using conventional woodworking machines. Simple milling, sawing, sanding, screwing, nailing, tacking and gluing with PUR-based glue. The edges can be easily sanded after processing and do not need an edge strip. However, INTELLIGENT WOOD can do more than many other panel materials; the INTELLIGENT WOOD UPB panels are also thermoformable. This opens up entirely new possibilities for shaping and leaves more space for creative solutions

Since INTELLIGENT WOOD UPB Boards made of Resysta are foamed, they are also very light and easy to handle in two-hand operation. With a medium density of 0.5 g/cm³, INTELLIGENT WOOD UPB boards also float on water.

INTELLIGENT WOOD - functions like wood - only better!

READY AND EASY TO USE

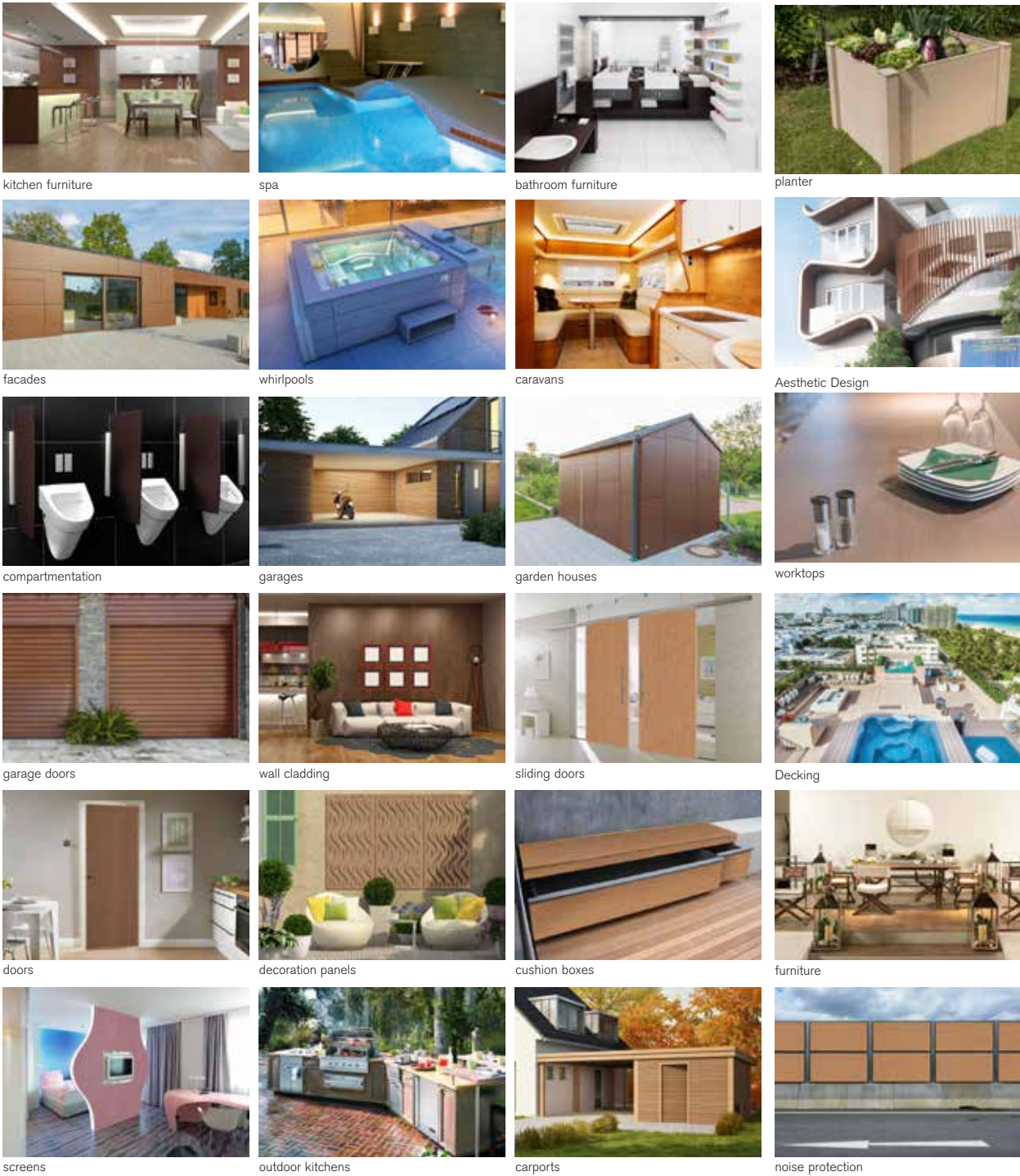## WATER-RESISTANT PANEL WITH THE NATURAL LOOK & FEEL OF WOOD

UPB boards made of Resysta are supplied with a ground surface finish and can be finished by hand or machine with coarse sandpaper. For processing, commercially available woodworking machines are used.

For a coloured design, the surfaces of UPB boards can be colourised directly with a stain/varnish which is specially selected for Resysta.

For additional protection, we recommend our Resysta 2K protective varnish in different degrees of gloss. For industrial applications, a UV-curing protective lacquer is also available. After the treatment, you get a transparent surface which is hardly distinguishable from the wood. Alternatively, Resysta's specially designed transparent, coloured oils are also available.

Characteristics	Standard	Value	Unit
Density	ISO 1183	0.65 +/- 0.3	g /cm^3
Tensile strength	EN 789	9.0	N/mm^2
Tensile modulus of elasticity	EN 789	732	N/mm^2
Bending strength	EN 310	17	N/mm^2
Bending modulus of elasticity	EN 310	688	N/mm^2
Screw extraction value	EN 320:2011-07	6,000	N
IZOD impact strength - notched	ISO 180/1eA	2.9	kj/m2
Thermal linear expansion coefficient	ISO 11359-2 / DIN 53752	4 *10(-5)	K(-1)
Water vapour diffusion resistance	DIN EN ISO 125752	High	
Water absorption of unpolished panel / weight	Based on EN 317	< 1% (24h) - Res	
Water absorption of unpolished panel / length	Based on EN 317	< 0.1% (24h) - Res	
Fire classification	DIN EN 13501	B2-E (B2 tested according to DIN 4102)	
Resistance against wood-destroying fungi	DIN V ENV 12038:2002	Class 1	
Resistance to rotting	CEN/TS 15083-2	Class 1	
Resistance to underground termites	ASTM D3345-08	High	

The data in the above table are based on the values of the 20mm plate, have been performed in our own laboratory according to the internationally valid test methods to the best of our knowledge and practice and are based on our experience. Different strengths, processing and application areas can influence the results, so no liability is accepted for the stated values. If a new version of the technical data is published, the above information will become invalid. The user is responsible for the proper storage, processing, use and disposal of the product.

kitchen furniture

spa

bathroom furniture

planter

facades

whirlpools

caravans

Aesthetic Design

compartmentation

garages

garden houses

worktops

garage doors

wall cladding

sliding doors

Decking

doors

decoration panels

cushion boxes

furniture

screens

outdoor kitchens

carports

noise protection

Version 2 | November 2017 | International

INTELLIGENT WOOD Universal Performance Boards are available in the following dimensions

Thickness in mm	Width x length in mm
8	1220 x 2440
12	1220 x 2440
16	1220 x 2440
20	1220 x 2440
25	1220 x 2440

Other thicknesses and dimensions can be produced upon request.

www.resysta.de