

# BANOVA<sup>®</sup>

LIGHTEN UP...

LIGHT AND STRONG INTERIOR DESIGN





# CONTENT

AT A GLANCE

## **BANOVA®**

- 4 BANOVA® – the world's lightest plywood
- 5 Environmental aspects
- 6 BANOVA® PLUS
- 8 BANOVA® DIGITAL
- 10 BANOVA® SUPERFLEX

## **PROCESSING**

- 12 Surface finishes
- 14 Joining techniques
- 15 Processing and shaping
- 16 General information
- 17 Good to know



BANOVA® stands for high-quality lightweight panels for use in lightweight interior design applications. Our material not only provides high stability but also minimal weight – and is sustainable at the same time! What is more, BANOVA® can be combined with a variety of different face laminates to fulfil additional requirements. The balsa trees we use only take 5 years to grow on our FSC-C019065 certified plantations before being turned into light and stable BANOVA® panels in an efficient production process.

## PROPERTIES

Light, strong, flexible BANOVA® products offer customers a range of benefits in comparison with conventional panel material:

- Better cost-effectiveness due to lower operating costs or higher payloads
- Easy handling in production and logistics
- Large but lightweight elements
- Easy processing and easy to combine with other materials

Uniform product quality is ensured by industrial control and selection of the individual veneer layers as well as the structural bonding.

## APPLICATIONS

BANOVA® is very versatile and its high quality means it has applications in a wide range of markets:

- Furniture and interior fittings
- Stage and set construction
- Model building
- Exhibition construction and shop fitting
- Vehicle, yacht and ship interiors
- Presentation and display (POS/POP)



## 3A COMPOSITES

As part of Schweiter Technologies AG, 3A Composites is a global company, with offices in Europe, America, India, China and Papua New Guinea. 3A Composites has been a pioneer in lightweight technology for almost 70 years. Its brands stand for sustainable, lightweight, resource-conserving and high-quality core materials and panels, which can be manufactured to produce energy-efficient lightweight finished products.

## ENVIRONMENT, HEALTH AND SAFETY

Sustainable and consistent environmental protection is a main priority for 3A Composites, and preserving natural resources is of utmost importance. 3A Composites is committed to adopting a continuous improvement process for environmental protection which far exceeds the scope of government regulations and to playing a leading role in the field of ecology.

3A Composites is the one and only supplier of balsa wood core material who owns FSC® certified plantations. The company cultivates several thousand hectares of FSC® certified balsa wood plantations in Ecuador (FSC-C019065) and Papua New Guinea (FSC-C125018).

3A Composites feels duty-bound to focus on sustainability in all corporate policies. 3A Composites is committed to making significant reductions in pollution, conserving natural resources and fostering the economic, social and ecological welfare of the communities in areas where they operate.



Look out for FSC® certified products!



# BANOVA® PLUS

LIGHTWEIGHT AND HIGH PERFORMANCE

# APPLICATIONS

LIGHTWEIGHT AND INFINITELY VERSATILE



BANOVA® PLUS is the world's lightest plywood – with a balsa core and a high-grade surface. The panel is faced with regionally available light hardwood. The accurate selection process of raw material selection ensures the BANOVA® PLUS face veneer is thin, resistant and top-quality. This panel structure proves to be a real advantage both when material is being processed and when it is in use.

Not only does it weigh 50-70% less than conventional wood panels, it also stands out due to its high-level thermal insulation, excellent bonding properties and its sustainability. Processing BANOVA® PLUS is very easy due to its top-quality uniform structure – this means there is no need to change existing tools and joining techniques.

### SURFACE QUALITY

BANOVA® is a natural product with natural colour variations and characteristics. The panels, sanded smooth on both sides, have a front and a reverse face, which may vary due to typical wood features.

Both surfaces are produced using spliced veneers with natural colour variations and in some cases levelled with filler. Further details about surfaces are available on request.

### FACE LAMINATES

Material properties like stiffness, strength, impact resistance, scratch resistance and appearance can be optimised by combining the panel with a variety of different face laminates such as aluminium, hardwood veneer, MDF/HDF, HPL or birch plywood. Processing is carried out by our industrial and sales partners.

### BANOVA® PLUS – AT A GLANCE

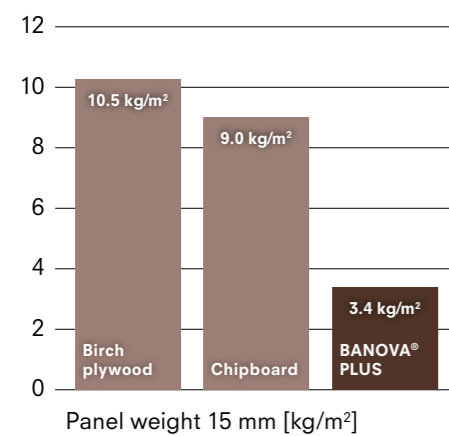
- Uniform surface quality
- Outstanding flatness due to top-grade PU bond and uniform structure
- Ideal surface for lamination with foil, CPL and wallpaper or direct lacquering and painting
- Natural wood from responsible sources FSC® Mix (FSC-C127318)

### APPLICATIONS

- Lightweight and mobile furniture
- Interior fittings
- Dimensionally stable and robust doors and sliding walls
- Counters and furniture units
- Decorative front panels, walls and ceilings
- Sales and display units (POS/ POP)
- Mobile display walls



### PANEL WEIGHT IN COMPARISON



### SPECIFICATIONS

Thickness [mm]	9	12	15	18	25	30	40	50
Number of layers	3	5	5	5	7	7	9	11
Panel weight [kg/m²]	2.9	3	3.4	4.5	5.1	6.0	8.0	10
Dimensions [mm]	1220 x 2440 / 1220 x 3050							
Bonding quality	DIN EN 314, class 3, „marine grade“ Water boil proof adhesion (WBP) Formaldehyde-free bond (NAF)							

# BANOVA® DIGITAL

IDEAL PRINTING SUBSTRATE FOR SUSTAINABLE ADVERTISING CAMPAIGNS



BANOVA® DIGITAL comprises a balsa wood core and selected light hardwood face veneers. High-quality BANOVA® DIGITAL surfaces make an ideal substrate for direct digital or screen printing.

Even at thicknesses up to 50 mm, BANOVA® DIGITAL is impressively lightweight, very stable and flat. The ink adheres well to the natural wood and provides additional abrasion resistance for indoor applications. Processing the lightweight panel is easy with standard printing equipment and milling machines.

An attractive, natural canvas effect is created by presenting well-chosen images on the visible wood texture. The natural wood structure gives your advertising campaign a more authentic touch.

## SPECIFICATIONS

Thickness [mm]	12	15	18	25	30	40	50
Number of layers	5	5	5	7	7	9	11
Panel weight [kg/m <sup>2</sup> ]	3	3.4	4.5	5.1	6.0	8.0	10
Dimensions [mm]	1220 x 2440						
Bonding quality	DIN EN 314, class 3, „marine grade“ Water boil proof adhesion (WBP) Formaldehyde-free bond (NAF)						

# APPLICATIONS

PRINTABLE – FEATHER-WEIGHT – FSC® CERTIFIED

## BANOVA® DIGITAL – AT A GLANCE

- For direct digital and screen printing
- Selected light-coloured and seamless surfaces for high colour consistency
- Excellent substrate for printing, lacquering, painting or foil lamination
- First-rate impact-resistant and scratch-resistant surface
- Natural wood from responsible sources FSC® Mix (FSC-C127318)
- Natural wood structure for sustainable advertising campaigns

## APPLICATIONS

- Visual communication
- Advertising campaigns
- Window displays
- Exhibition stands and shop-fitting
- POS/ POP Displays



# BANOVA® SUPERFLEX

THE WORLD'S MOST FLEXIBLE PLYWOOD



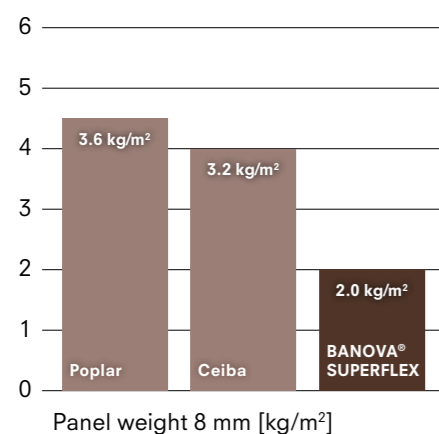
BANOVA® SUPERFLEX – the remarkable features of this highly flexible bending plywood are its tight bending radius, maximum strength and extreme lightweight. The combination of a textile core layer with the highly flexible wood veneers provides minimal restoring forces and enables to bond permanently stable form components. A radius of 40 mm is easy to produce with top surface quality.

Curved objects can be produced in just a few steps with only three layers; this opens up new options for organic shapes and natural undulations.

### FACE LAMINATES

Rigid face laminates such as HPL, HDF or hardwood veneers are laminated onto BANOVA® SUPERFLEX to produce formed parts. Full surface bonding gives the components their permanent shape. The face laminates provide the necessary scratch and impact resistance and are usually decorative in appearance.

### PANEL WEIGHT IN COMPARISON



# APPLICATIONS

SHAPING UP

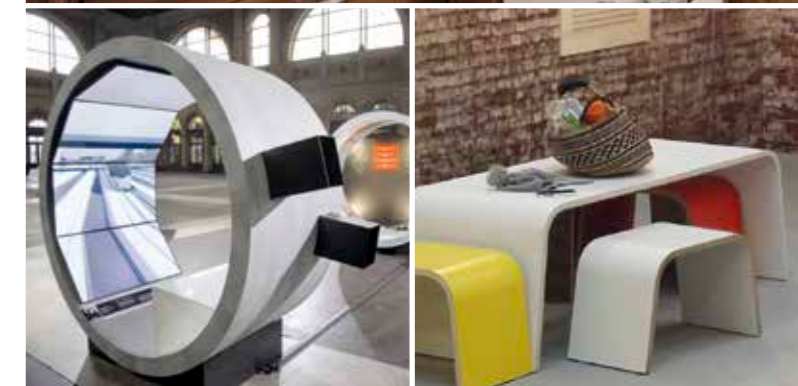
### BANOVA® SUPERFLEX – AT A GLANCE

- Wide range of applications thanks to easy shaping and processing
- Simple material processing and handling, no need for special tools or equipment
- Excellent finish on both external surfaces when formed into an 'S'-shape
- Bonding in a membrane press results in outstanding surface quality
- Unlike other materials, natural, evenly shaped surfaces – no segmentation
- Excellent surface finish due to continuous and seamless core material
- Wood from responsible sources FSC® certified (FSC-C127318)

### APPLICATIONS

- Furniture making
- Vehicle, yacht, and ship interiors
- Exhibition construction and shop fitting
- Ultra-lightweight stacking furniture
- Curved elements for furniture and ceilings
- Decorative covers
- Organically shaped interior fittings

... the options are infinite.



### SPECIFICATIONS

Thickness [mm]	8	10
Number of layers	3	3
Panel weight [kg/m²]	2.0	2.5
Min. bending radius [mm]	40	50
Dimensions [mm]	1220 x 2440 / 2440 x 1220 / 3050 x 1220	
Bonding quality	DIN EN 314, class 3, „marine grade“ Water boil proof adhesion (WBP) Formaldehyde-free bond (NAF)	

# SURFACE FINISHES

UNBOUNDED CREATIVITY



Material properties like stiffness, strength, impact resistance, scratch resistance, texture, colour and printability can be optimised by combining the panel with face laminates to suit specific customer requirements.

## LAMINATION

Facing laminates such as hardwood veneers, HDF, HPL, CPL and aluminium can be applied using existing equipment. It is important to comply with the recommended bonding pressure of 2.5 kg/cm<sup>2</sup>.

## PAINTING AND WALLPAPERING

The surfaces and edges can be easily painted, filled and wallpapered. Depending on the requirements placed on the finished surface, more primer may be required.

## GOOD PARTNERS MAKE IT POSSIBLE

Lamination is carried out by our competent and established partners in the wood industry.

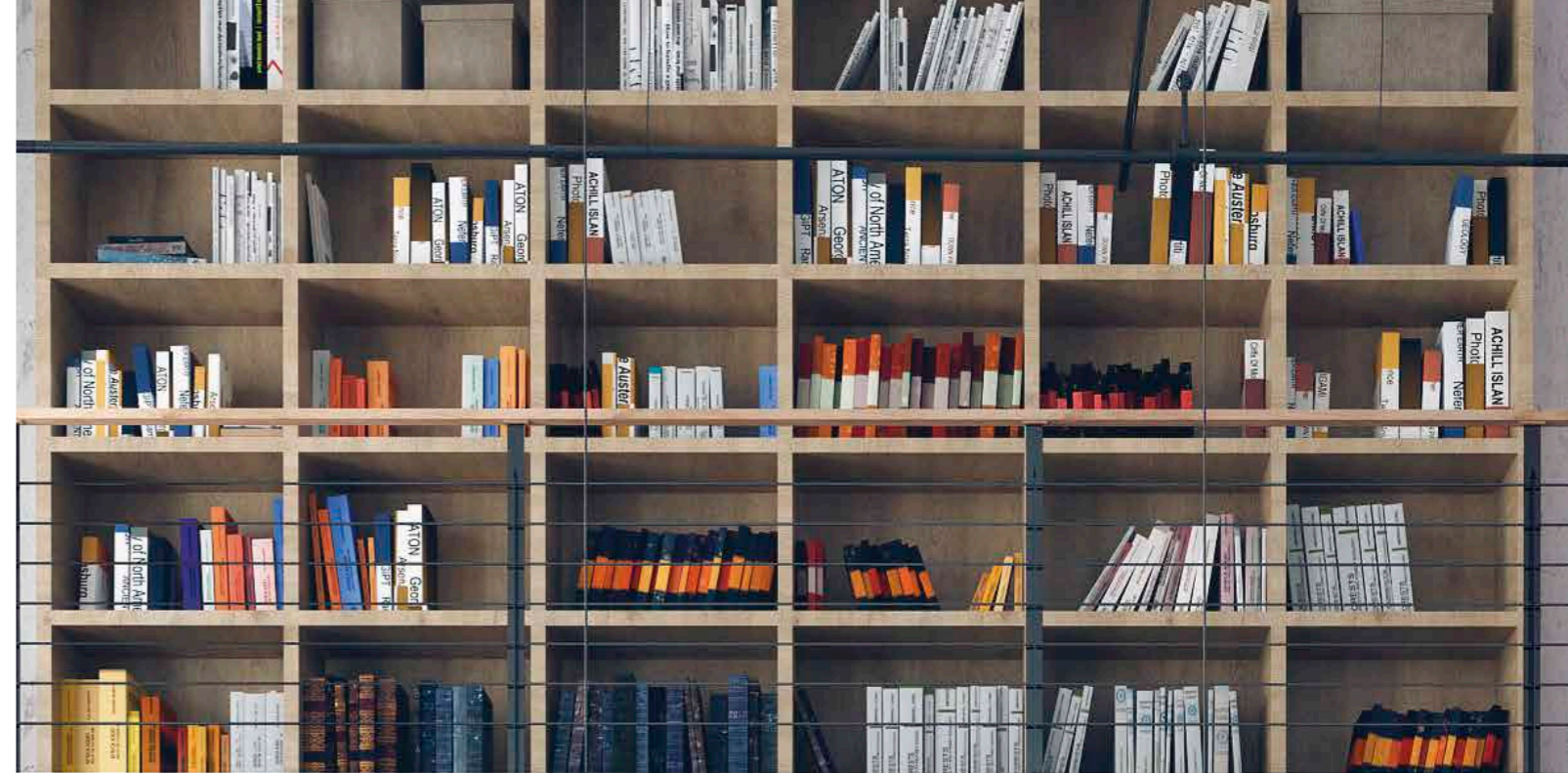


BANOVA® with HPL from SWISS KRONO – select your lightweight panel from a wide variety of furniture decors.



BANOVA® with high-grade wood veneers from euoplac – select from more than 140 different wood types – tailor made for you from precious natural wood.

- 1 SWISS KRONO One World Swiss Collection  
[www.swisskrono.ch](http://www.swisskrono.ch)
- 2 BANOVA® PLUS with HPL plywood from SWISS KRONO
- 3 BANOVA® PLUS with real wood veneer from euoplac
- 4 euoplac high-grade wood veneers  
[www.euoplac.com](http://www.euoplac.com)
- 5 SWISS KRONO One World Swiss Collection  
[www.swisskrono.ch](http://www.swisskrono.ch)



# JOINING

BUSINESS AS USUAL



Assembling individual parts to make a whole? Nothing has changed here – except that it is quicker and easier. That is why all standard joining techniques used in woodworking can also be used with BANOVA®.

## BONDING

Bonding is the most efficient method of joining and ideally suitable to join BANOVA® with other materials. Existing woodworking tools and adhesives can be used without problems.

## DOWELS, LAMELLO, TONGUE AND GROOVE, PLUG CONNECTORS

Dowels, Lamello (biscuit), tongue and groove or plug connectors are normally used for exact positioning and permanent bonding. Precise results are achieved by manual milling and drilling or using a CNC machine. The connection is interlocking, vibration-resistant and permanent.

## HINGES AND BRACKETS / METAL FITTINGS

Standard quick installation concealed hinges with an expanding mechanism can be mounted as usual. In addition, many other fittings can be easily attached with optimised screws from KVT/BOSSARD.

## SCREWS

Processing is quick and efficient with standard plywood screws. There is no need to pre-drill or counter-sink and no risk of a material splintering with BANOVA®.

3A Composites has cooperated with KVT / BOSSARD to develop the ecosyn®-PXL screw, which meets high requirements for screw fixed panel surfaces. These new screws have 40 kg load bearing capacity with a screw depth of 10 mm. Make the most of this lighter, more efficient solution.

# PROCESSING AND FORMING

BANOVA® IS WOOD!

BANOVA® is wood! And like solid wood it can be processed with standard woodworking equipment and tools.

## SAWING

BANOVA® is a low-density material and this means processing speeds can be as much as 30% faster. Standard saws, laser-cutters and CNC milling machines can be used to process BANOVA®.

## DRILLING AND MILLING

Precise milling results are achieved by high speed cutting with sharp drill bits and milling tools.

## SANDING

The surface is sanded flat and suitable for direct lamination. Standard wood abrasives can be used in sanding processes. For optimum sanding results, ensure that an efficient dust extractor is in operation.

## BENDING AND FORMING

BANOVA® SUPERFLEX is quite literally flexible. The porous structure of balsa wood makes bending easy. Forming a radius of only 40 mm, even to S-shape is easy to manufacture. The simplest bonding method is in a vacuum bag or in a membrane press on a negative mould with even surface pressure.





# GENERAL INFORMATION

## WHAT YOU SHOULD KEEP IN MIND BEFORE PROCESSING

### TRANSPORT

BANOVA® is lightweight so that transport vehicles and containers can be filled to the maximum volume capacity. Individual panels can be carried by one person without difficulty.

### PACKAGING

BANOVA® is delivered on pallets with protective cover panels on top and underneath the material. A plastic foil protects the hygroscopic material against short-term exposure to humidity/moisture.

### HANDLING

Pallets and individual panels must be handled with care to avoid damaging the edges and surfaces. Pallets are usually loaded and unloaded using a forklift. Individual panels should be lifted manually or with suitable vacuum lifting devices. Surface damage can occur when edges are pushed or dragged across the panel surface or if there is direct contact with the fork of a forklift.

### STORAGE

BANOVA® should be stored in unopened batches in a dry, covered space. The floor must be flat and able to support the material. No more than three pallets should be stacked on top of each other. Opened pallets should be protected from dirt and moisture by replacing the top protective panel.

### ACCLIMATIZATION

BANOVA® is fabricated under strict quality guidelines with a moisture content of 6-12%. Homogenous processing parameters and low pressure processes inhibit the freeze of strain in the product. The packages are well protected with protective sheets and sealed with foil for freight.

Moisture exchange with the environment during transport is well limited and the moisture content within the packages remains stable. Depending on the application, BANOVA® should be stored before assembly or processing under similar conditions as the site of installation. If the sheets are not acclimatized, the dimensional stability is reduced. BANOVA® is wood, which is constantly exchanging moisture content with the environment, causing dimensional changes. Warping of wood is a characteristic, that can be managed by correct handling and processing and thus it is no reason for rejection.

### RECYCLING

In practice, plywood has a long economic life and there are many recycling methods. The methods differ as they are governed by the law in individual countries.

The best utilisation is the recovery of BANOVA® as panel in a different application. BANOVA® can also be used as raw material for chipboard and returned to the ecological cycle.

In addition, there is thermal recycling in suitable heating systems or thermal power stations. Untreated panel parts and BANOVA® chippings are scrap wood and can be burnt in carpenters' workshops in the waste wood furnace. Painted, laminated or impregnated panels are defined as waste wood. Depending on the degree of impurity, disposal of this material is carried out by cement works or in waste incineration plants.

# GOOD TO KNOW

## INFORMATION AND USEFUL ADDRESSES

You can expect that little bit extra from the market leader in lightweight construction with plywood panels. An impeccable sample service, up-to-date technical data sheets as well as technical application engineers for individual consultation.

How do you use the materials we produce? Do you have any requests or suggestions? At 3A Composites, we place great emphasis on the exchange of ideas between the manufacturer and the end user. Because some little known application might be the stimulus for innovative ideas, which we can use together.

Make the most of our advice service: we make it easy for you to get started your way in the versatile BANOVA® processing world. Contact us at the BANOVA® Customer Service Centre: [www.banova.eu](http://www.banova.eu)

When we are not able to help you any further, we are happy to refer you to the specialists, people we have been working with for many years. We value these relationships not only because of joint and individual development work. They also make up a part of our service philosophy and offer you many worthwhile benefits.

**ZÜND** – swiss cutting systems  
[www.zund.com](http://www.zund.com)

**EUROLASER** – laser-cutting-systems  
[www.eurolaser.com](http://www.eurolaser.com)

**FASTMOUNT** – panel mounting systems  
[www.fastmount.com](http://www.fastmount.com)

**LEUCO** – quality tools for wood, panel and composite material processing  
[www.leuco.com](http://www.leuco.com)

**BLUM** – specialist for furniture fittings  
[www.blum.com](http://www.blum.com)

**KVT / BOSSARD** – fastening technology  
[www.kvt-fastening.ch](http://www.kvt-fastening.ch)



We would like to thank the following companies for their kind permission to publish the application photographs in this brochure.

**strasser thun** – craftsmanship  
[www.strasserthun.ch](http://www.strasserthun.ch)

**FRANKIA** – motorhome manufacture  
[www.frankia.de](http://www.frankia.de)

**SWISS KRONO** – wood materials finishing  
[www.swisskrono.ch](http://www.swisskrono.ch)

**europiac** – real wood veneer products  
[www.europiac.de](http://www.europiac.de)





3A Composites GmbH  
49090 Osnabrück, Germany  
Tel +49 (0) 541-12193 32  
Fax +49 (0) 541-12193 93  
[display.eu@3AComposites.com](mailto:display.eu@3AComposites.com)  
[www.display.3AComposites.com](http://www.display.3AComposites.com)