

BAUX

Acoustic Pulp

BAUX IS FOUNDED
ON THE BELIEF
THAT BUILDING
MATERIALS
SHOULD BE
SUSTAINABLE,
SURPRISINGLY
FUNCTIONAL AND
REMARKABLY
BEAUTIFUL.

LET'S BUILD!



BAUX

Acoustic Pulp

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BORN FROM OUR VALUES

A top-down photograph of a person's hands holding a green bowl filled with yellow chanterelle mushrooms. The person is wearing a green watch. The background is a forest floor covered in green moss, brown leaves, and a small green four-leaf clover. The text "BAUX ACOUSTIC PULP WAS BORN FROM OUR LOVE OF NATURE." is overlaid in large, bold, yellow capital letters across the center of the image.

**BAUX ACOUSTIC
PULP WAS BORN
FROM OUR LOVE
OF NATURE.**



When we're looking for new designs, products or acoustic materials, nature is always our first source of inspiration.

It all started with a simple idea. That acoustic materials can be the bridge that connects urban architecture and interior design with nature. A perfect harmonization of beauty, function and sustainability, without compromise. This idea energizes us daily. It's embedded in the products we make and the way we do business. And it pushes us to constantly strive to do better, and more.

For us, BAUX is the sum expression of what we do, what we stand for, and what makes us relevant. Our mission is to change the world for the better.

With acoustical products? Yes. After all, a conversation between two students excels into brilliance, a business meeting gone right leads to new potential or leaders of nations make an agreement that matters to the world – all thanks to restful acoustics in residential buildings, industrial premises and public spaces.

Headquartered in Stockholm, Sweden, BAUX is only a short commute away from a quiet walk on a forest trail or a swim in a tranquil lake. A perpetual invitation to put down our laptops, detach from the office and reawaken the depths of our inborn senses.

Nature offers a sanctuary far from the noise, bustle and stimulation of urban life. A restful and soothing space where you can quiet your mind and tune into something deeper. Feel the brush of wind on your ears. Breathe in the scent of earth and pine. Listen to the chirping of birds or the rushing of water. Feed your eyes with a restorative palette of greens, browns and blues.

It's no surprise that nature is always our first source of inspiration whenever we're looking for new designs, products or materials. Not only does it provide a wellspring of ideas for colors, patterns and shapes. When you explore beneath the surface, nature holds the key to removing unsustainable ingredients from the equation entirely.

At BAUX, we're constantly seeking to uncover potential, inspire change and discover new ways to make people's lives at work better through sustainable acoustical solutions. It's our passion. And it's firmly rooted in the belief that our products should do more than serve as a functional solution or meet the contemporary design expectations of architects and engineers. They should also contribute to a better planet, both today and for generations to come.

It's simply a matter of wanting to change things for the better.

The degradation of our natural environment is a global topic of increasing urgency, and we can no longer afford to turn our backs or cut corners. We are dedicated to doing our part to reduce our ecological footprint and make sustainability an integral part of everything we do and create. Preventing pollution, reducing waste, conserving resources, designing for longevity. Learning from our mistakes, asking the right questions and always striving to do things even better than before.

We believe in a future where companies are founded upon strong values that direct industries towards a sustainable future. Where businesses guide customers in the right direction. And brands you can trust create products and services that work with nature—not against it.

But dreams, ideas and prototypes forecasted for some point in the future are not enough. We need working solutions today.

The tools and inspiration already exist, and the possibilities are truly exciting. It's simply a matter of wanting to change things for the better.

Let's build!



Petrus Palmér



Johan Ronnestam



Fredrik Franzon



Jonas Pettersson



John Löfgren



AN ACOUSTICAL REVOLUTION

Over the past century, fossil based materials have become the norm and standard for acoustical products in the interior design and building industries.

It's time to accelerate change towards a fossil free future.

It's time for a new kind of material. One that breaks the mold and pushes us beyond what the world believes is possible for sustainability in acoustical products.



BRAN WHEAT



PIECHE



SPRUC NEEDLE



IT'S TIME FOR A NEW MATERIAL.



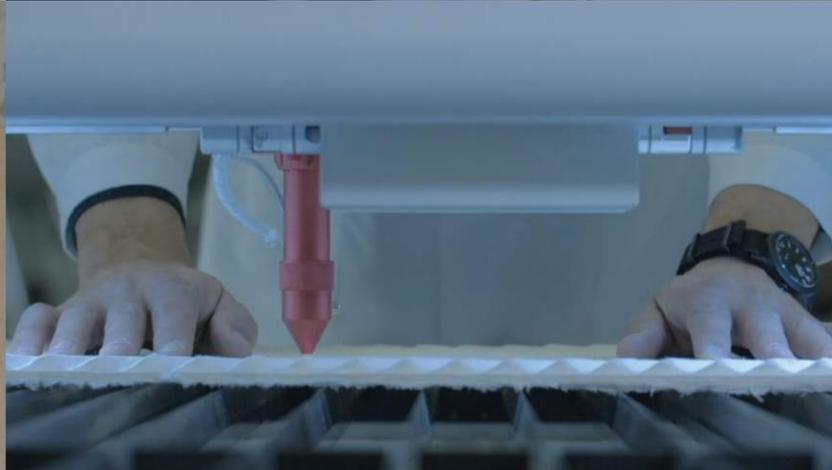
Oak



Pine



Birch



100% bio-based

100% recyclable

100% biodegradable

0% pollution or waste

Biomimicry engineered

Lightweight

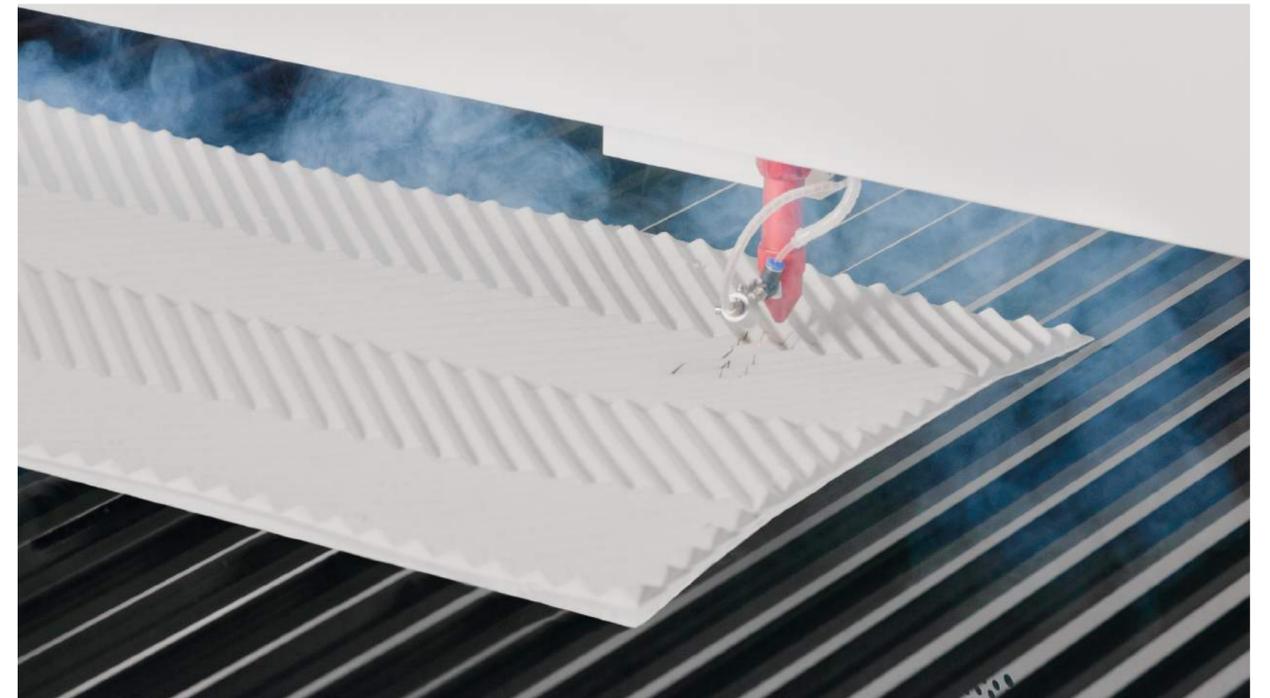
Durable

Fire retardant

Water repellent

Colors made of wheat

Laser enhanced sound absorption



This patented, 100% bio-based material drastically pushes the boundaries of cellulosic properties to a completely new level.

We at BAUX are not afraid of a challenge.

We've been searching the world for the most sustainable and functional building materials ever since we first got started.

This time, we had a vision to create an acoustical solution that would be uncompromisingly sustainable in every way— from the resources and materials to the manufacturing process, and the impact of the product at the end of its life. All while achieving the right characteristics for optimal sound absorption and meeting the contemporary design expectations of modern architects and designers. We wanted to take advantage of the natural resources provided to us by nature in our own backyard, the forests of Sweden. We imagined an end product that would feel all at once familiar, playful, and beautiful, while generating sensations as innate and restorative as nature itself.

We started by folding paper.

For weeks, we played with a multitude of different origami and architecture-inspired lines and shapes until we discovered a series of simple patterns that both matched our aesthetic and provided acoustical benefits.

Then, we entered into a two year period of trial and error, testing different materials until we finally discovered the perfect partner to help us bring our vision to life: A high-tech and like-minded life science laboratory located just outside Stockholm.

Founded by a group of researchers from the Royal Institute of Technology, the laboratory works with biomimicry and Click Chemistry to organically modify cellulosic fibers from recycled streams of Swedish pine and spruce trees. It's through this technique that they developed a patented, 100% bio-based material that drastically pushes the boundaries of cellulosic properties to a completely new level. It turned out to be the perfect canvas for our new acoustical solution.

Experimenting together with our newfound lab partners, we fine-tuned the formula and production process until it yielded the exact properties needed to build the highly functional, sustainable, and beautiful acoustical product we were seeking.

Instead of resorting to chemicals, we looked to nature for answers.

To create fire-retardancy, we mimicked the natural wood fossilization process and the resilience of grass roots. For water repellency, we looked to the superhydrophobic surface of the lotus flower. For color, we added wheat bran. For strength, we utilized a naturally catalytic combination of potato starch, plant-based wax and citrus fruit peels from lemons, limes, and oranges to provoke the cellulosic molecules into creating a powerful matrix of intermolecular fusions. And to achieve extra sound absorption and durability, while maintaining a lightweight product with minimal material usage, we borrowed the hexagonal honeycomb structure originally invented by bees and popularly used by the aerospace industry.

The final product comes together in built form in a local factory that runs on 100% hydropower. First, all of the ingredients are mixed together with water and fed into a 3D mold. Next, the contents of the mold are pressed with 40 tonnes of weight and dried under pressure using a highly technological vacuum technique so that it becomes extremely dense. The dried surface is then nano-perforated using an advanced laser technique for enhanced sound absorption. Finally, each front panel is adhered to a honeycomb structured back made from the same material. When the process is complete, all of the leftover ingredients and water are recycled back into the factory's closed circular system to be reused again in the next batch. The only emission generated from production is a tiny amount of pure and clean water vapor that's released as the material dries.

Fully harmonized with the nature it's made and inspired from, when the product reaches the end of its life, it can be recycled in its entirety — or simply returned to the earth it came from.

It's nature's own magic.

The ingredients:

Sustainably harvested Swedish fir and pine trees.

Recycled water.

Non-GMO wheat bran.

Potato starch.

Plant-derived wax.

Citrus fruit peels.

Zero chemicals.

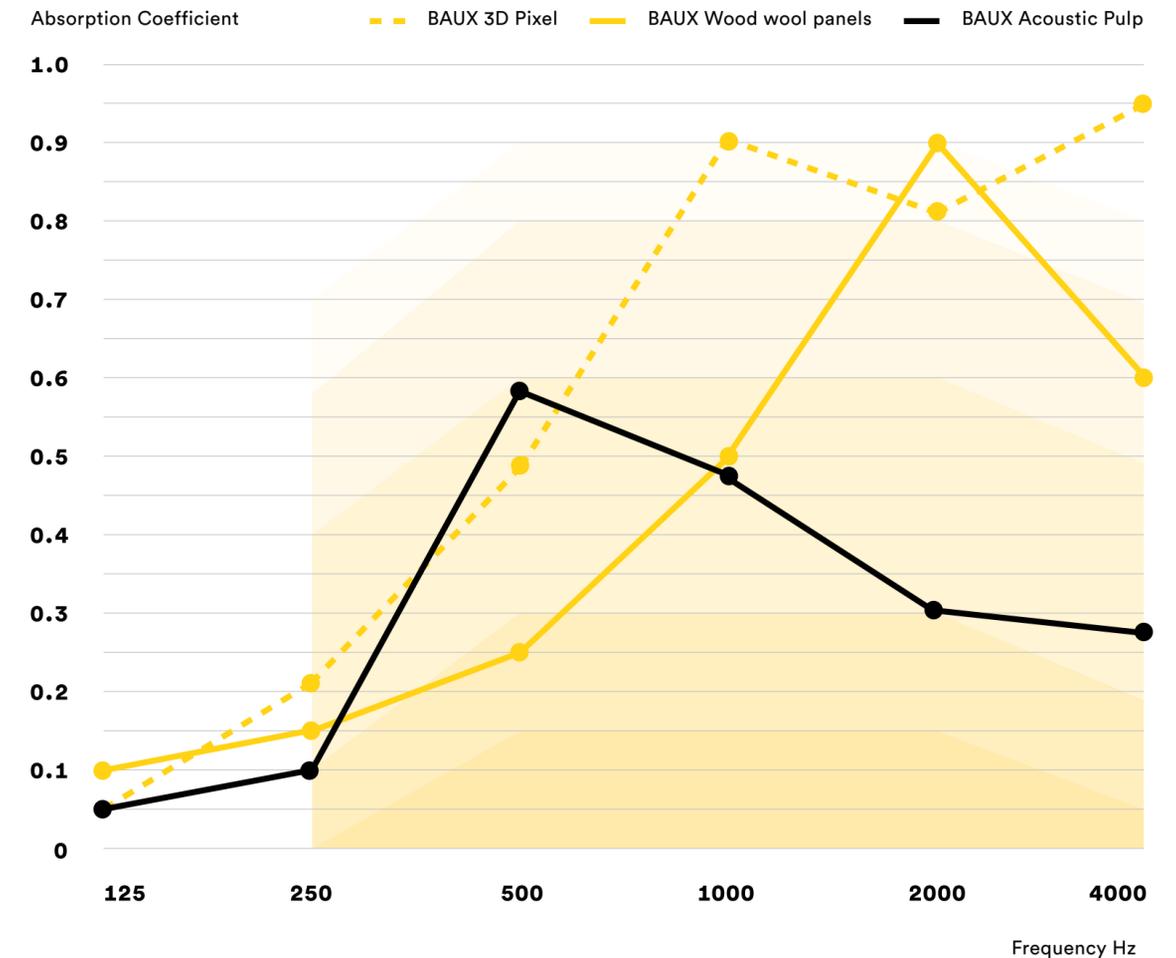


BAUX ACOUSTIC PULP



The new 100% bio-based BAUX Acoustic Pulp panel is the first in the world to uncompromisingly combine the performance properties of sound absorption, safety and durability with sustainability and modern aesthetics. The result is a restful and sustainable acoustical environment for residential buildings, industrial premises and public spaces that calls us back to the harmonizing pulse of nature. Harmless for us, harmless for the environment. It's nothing short of an acoustical revolution.

This is BAUX Acoustic Pulp.



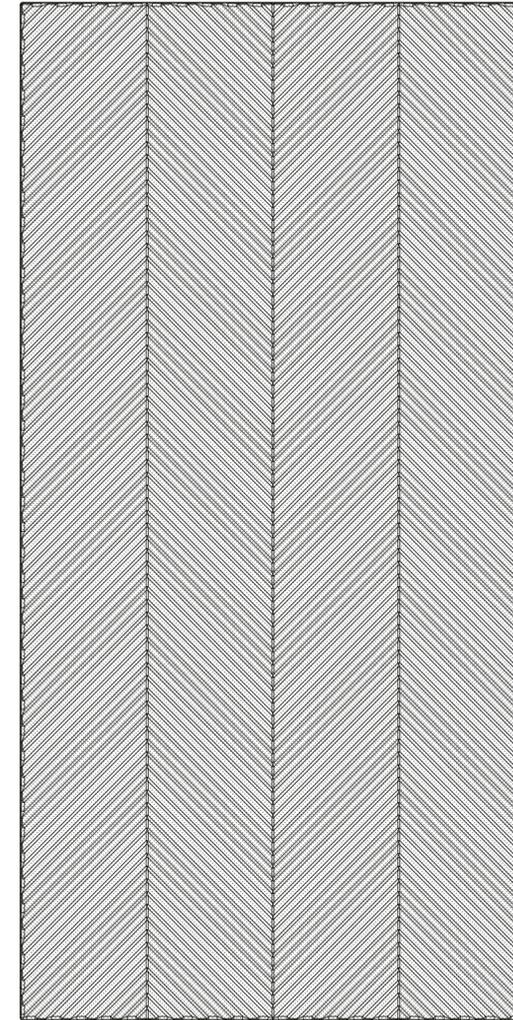
Performance testing indicates that BAUX Acoustic Pulp has excellent absorptive qualities, making it well suited for spaces that can benefit from a more restful and focused acoustical environment. A triad of sound absorption mechanisms are used: diffusion, absorption, and chambers. The irregular 3D shaped surface breaks up reflections and spreads them in different directions. The cellulosic material fibers transform sound waves into micro movement and heat. And the honeycomb chambers trap sound waves entering through the perforated surface which bounce around and "die out."

Data
 aw = 0.35
 NRC = 0.35
 SAA = 0.35



ACOUSTIC PULP ORIGAMI PULSE

20 mm thick
2 panels per m²



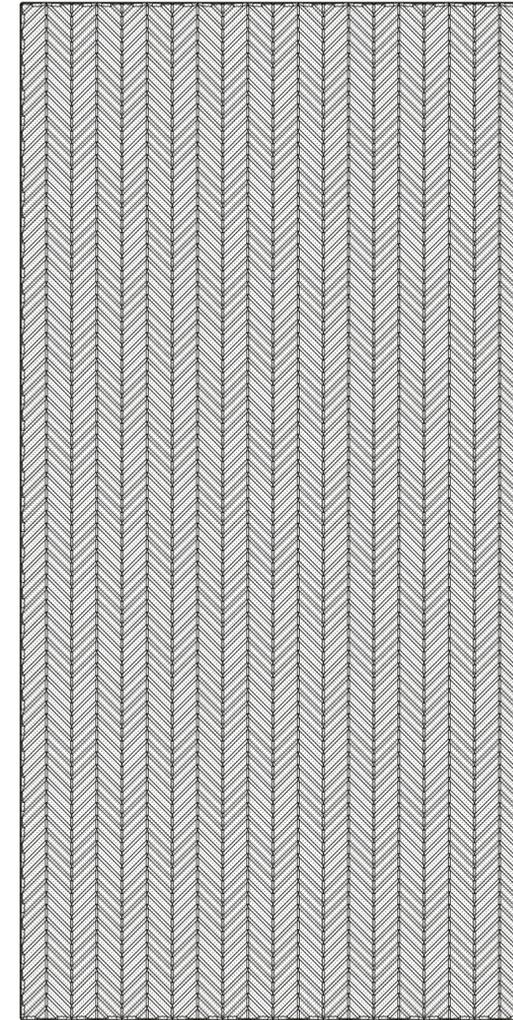
500 mm

1000 mm



**ACOUSTIC PULP
ORIGAMI ENERGY**

20 mm thick
2 panels per m²



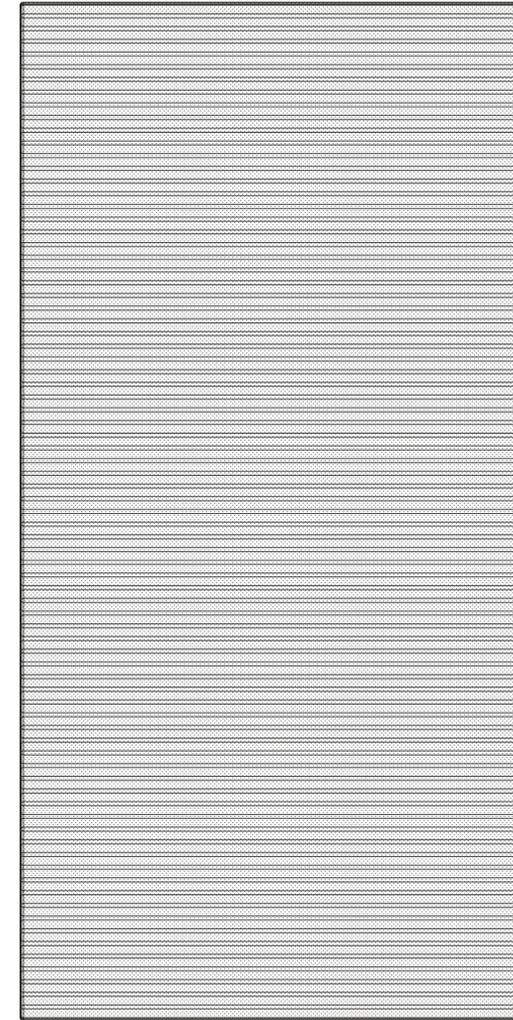
1 000 mm

500 mm



**ACOUSTIC PULP
ORIGAMI SENSE**

20 mm thick
2 panels per m²



1 000 mm

500 mm

Three different colors. All derived from wheat.

Adding paint would have compromised our vision of creating a 100%-bio-based product. Instead, with BAUX Acoustic Pulp, color is achieved using different percentages of wheat bran—0, 5 and 30%. Together with the three origami patterns, there are nine color-pattern combinations and endless possibilities for mixing, matching and harmonizing with different space designs. The final effect is an organic expression of character and color, without any chemicals at all.



Wheat 00%



Wheat 05%



Wheat 30%



INTO THE WILD

A PHOTOGRAPHIC EXPERIMENT BY JONAS LINDSTRÖM AND BAUX



When creating BAUX Acoustic Pulp, the intention was to form a seamless loop from nature to factory to nature again. All the ingredients are borrowed from nature, it's manufactured in an environmentally friendly way, and the final product is 100% biodegradable. So, we knew we could put it back into nature again without causing any harm. But still, we were curious—would Nature accept it back?

Here's what happened.

FROM NATURE AND BACK AGAIN

“At first, I was a little bit anxious about how we should approach the animals,” recalls Jonas. “I really love nature, but I had never taken photos of wild animals before. About 90% of the time I shoot design products, so wild animals like elks and foxes are not my normal subjects.”

Jonas called his team together to discuss different ways to approach the project, and they came up with a simple plan: Find a beautiful location in a Swedish forest, suspend the panels, attract animals with food, then spend two or three days taking pictures from a good hiding spot.

The first task was to find the right location. Jonas and his team decided it would be easiest to choose a fenced in national park or reserve where the animals are more plentiful and maybe more accustomed to people. After calling around, permission was finally granted to set up the project in an idyllic location on a reserve. Once on site, however, they ran into an unexpected problem.

“It was that time of year when all the acorns were falling off the oak trees,” Jonas says. “The problem was that this is a great and abundant food source for the animals, so it was very difficult to persuade them to come to our place. It wasn’t a good start.”

We called a meeting with our long-time collaborator and photographer Jonas Lindström, and offered him the challenge: How can we put the “natural” part of BAUX Acoustic Pulp to the test in a real way?

He accepted, and soon the idea was born to place BAUX Acoustic Pulp panels back into the Swedish forest they were first derived from, and take pictures of wild animals interacting with them. Would they treat the panels as foreign, absurd objects or just like another tree? The idea produced an immediate yes, and everyone was on board. Putting it into action, however, was another story entirely.





Jonas was faced with a choice to either delay the project or move on to another location. The answer came while talking to a friend who offered to introduce Jonas to his neighbor, an old and knowledgeable hunter who owns a large wooded area in the South of Sweden just outside Kalmar near a remote town called Skammelstorp.

“We met with him in his small hunting cabin in the woods. He was sitting there having coffee with a friend. It was a super nice experience to meet him. We told him about the project and the trouble we were having getting close to the animals. He said, ‘No problem. We’ll help you find them.’”

So the project was back on, and this time with wild animals, in untamed nature, and without fences to help guarantee the existence of populations. Jonas explored the property and, after a couple days, two locations were selected. With the hunter’s guidance, Jonas and his team began setting out food right away to start attracting the animals. Seeds, apples, shrimps. Sometimes, the hunter would even leave out leftovers from a hunt.

After some time, the animals started to come.



An infrared, movement-detecting Åtel camera, traditionally used by hunters, was ready, strapped to a tree at each location and painted with camouflage. The plan was to use these cameras to detect the presence of the animals, but only use photos taken with a traditional system camera. However, once Jonas saw the first black and white infrared pictures he changed his mind.



“I fell in love with the pictures from the beginning, showed them to BAUX, and they loved them too,” says Jonas. “So we decided to use them for the campaign instead of normal nature photos. An unconventional choice since nobody uses these pictures this way.”

“I think it’s good when you’re doing a project like this to do it in a real way,” he adds. “Hardly using any re-touch at all, and just showing the raw pictures of what we have done. I’m not so fond of nature photos that look super nice, like a deer in perfect grass... it’s beautiful, but quite boring.”

A month after setting up the locations in the forest, the final BAUX Acoustic Pulp product was ready, and Jonas and his team set to work suspending them among the trees with metal wires.

“It was pretty easy to hang the products,” remembers Jonas. “The biggest problem was keeping them straight since we were dealing with wind and rain. BAUX told us the panels could withstand water, and after two months there still haven’t been any issues at all—it’s like they are designed for outdoor use!”

With the panels mounted, all the elements of the great experiment were finally in place. The only thing left to do was to start taking photos. The first night, Jonas sat waiting in his car with his camera, which he’d been advised to do to disguise his human scent. But nothing came. Night after night, he waited. But the animals they had spent a month attracting seemed to have disappeared completely.

“For me, it was a big surprise that the animals were so sensitive,” says Jonas. “I thought, we’ll just wait a couple hours and they will come back, but it was like the opposite of that. We learned, for example, that wild pigs are so sensitive they can smell things a whole football field away.”

A week went by with still no sightings. Until, gradually, the animals started to return. “In the beginning, there were a lot of moose,” recalls Jonas. “But then hunting season started and they went into hiding.” After the moose, the foxes and deer started to visit. And then wild pigs, pine martens, and ravens.

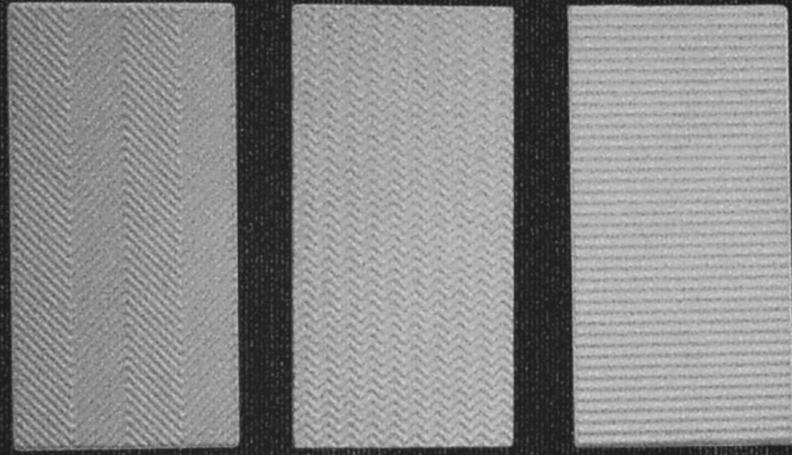
After two months and over 25 visits, Jonas has managed to capture some magical moments between the animals of the forest and the BAUX Acoustic Pulp panels. But still, the question remains: will nature reaccept these bio-based panels? “The panels look very good in nature,” says Jonas. “They fit in so well, beautiful. Like an art installation. If you come driving in your car in this remote area you can see them in between the trees.”

“Usually when you go out into the woods, you don’t see these kinds of animals,” says Jonas. “I started to feel like I had a special connection with them. We’re feeding them and going there every day. You learn what time of day they come out. You can tell if they’ve been around, maybe an hour before you got there. You get a sneak peek into their lives.”

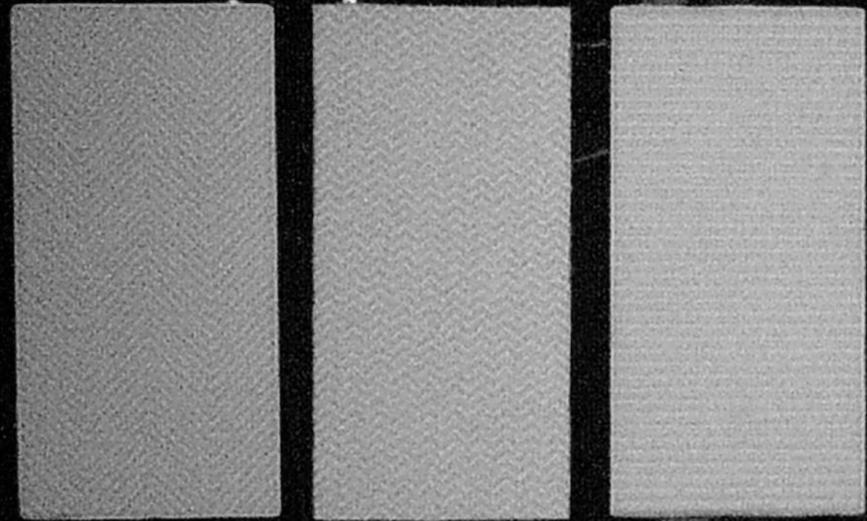
So perhaps the answer to this whole experiment is: Sure, the trees and animals don’t seem to mind! However, there was one result that wasn’t really expected. At first, we wanted to see if we could reconnect BAUX Acoustic Pulp to the nature it came from. In the end, we ended up reconnecting ourselves.

“For me, this has been more about an experience than just documenting something,” says Jonas. “There were many small steps that led to the final solution. It required a lot of problem-solving and research about the animals and how they live. It was like a whole new world for me. I thought it would just take a few sessions of a couple hours, but now I’ve been out there like 25 times. Now, I don’t want to stop because it’s been such a nice experience.”

“It’s reminded me to go out into nature more, and make nature a part of my life,” Jonas adds. “I used to do that a lot when I was younger, but now I work and travel so much. I had forgotten.”







INSPIRATION

Clean, natural and playful. BAUX Acoustic Pulp panels instantly raise the experience of any room, imparting restful acoustics to the places where people meet and speak.

In this image:
Pulse Wheat 00%
Pulse Wheat 05%
Pulse Wheat 30%





Set the stage for conversation and cultivate community in spaces where all voices must be heard.

In this image:

Sense: Wheat 00% and Wheat 05%

Pulse: Wheat 00% and Wheat 05%

Energy: Wheat 00% and Wheat 05%



Sustain the flow of movement in a frequently travelled hallway,
without all the hustle and bustle.

In these images:

Left: Pulse Wheat 00%. Right: Energy Wheat 05%

Restore the harmony in a room while building compelling moments of depth and impact.

In this image:

Left: Pulse Wheat 00%, Wheat 05% and Wheat 30%

Right: Sense Wheat 05%





In this image:
Sense Wheat 05%



A capsule of stillness gives the senses a rest and the mind a chance to re-discover its focus.

In this image:

Left: Sense Wheat 00%. Mid: Pulse Wheat 05%. Right: Energy Wheat 30%



In this image:
Energy Wheat 05%

SPECIFICATIONS

BAUX Acoustic Pulp

Material:	Ingredient:	Share (%):	Function:	Origin:	Certificates / other:
	Cellulose <small>Pine & Spruce</small>	69-99%	Matrix	Sweden	FSC and PEFC
	Wheat bran	0-30%	Visual look and strength	Sweden	EU legislation controlled, non-GMO
	Bio binder 5101 <small>Mixture of citrus fruit peels, potato starch and wax from plants.</small>	~1%	Binder	Sweden	Certified according to ISO9001, ISO14001 and ISO50001. Members of the UN Global Compact Group.

About: BAUX Acoustic Pulp is 100% bio-based and respectfully sourced from nature. The material is generated by modifying cellulosic fibers in a way that drastically moves the boundaries of cellulosic material properties to a completely new level. It's harmless for us, it's harmless for the environment. All harmful chemicals have been replaced with nature's own magic.

Sustainability:

- 100% Bio-Based
- 100% Biodegradable
- 100% Recyclable
- 0% Waste and pollution in manufacturing
- Resourceful material sourcing

Functionality:

- Strong
- Lightweight
- Fire Retardant
- Water Repellent
- Sound Absorbent

Research:

BAUX Acoustic Pulp is the result of more than 25 years of biomimicry focused research and development. Biomimicry is a design approach that seeks sustainable solutions based on the idea that the answers already reside within nature itself. The research for our particular product comes from the Royal Institute of Technology in Sweden.

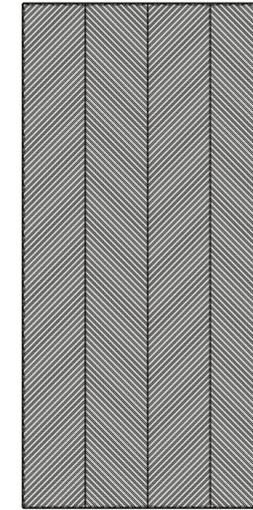
Design:

Carefully designed by Form Us With Love. Inspired by the Origami folding technique. To further amplify strength we looked to bees and the aerospace industry. The backside of the BAUX Acoustic Pulp panels have been carefully designed using a honeycomb structure, often found inside the wings of aircrafts and spaceships. The honeycomb structure allows us to minimise of the amount of material used without compromising the product's strength.

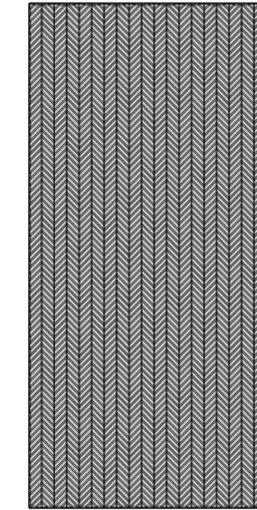
Manufacturing process:

The manufacturing process is 100% green and highly technological. The cellulose mix is formed inside a 3D mold with a powerful vacuum method and dried under high pressure. The surface is nano-perforated using an advanced laser technique. The factory and production process is environmentally friendly. All material waste is recycled back into the production process and re-used again. All water used is built into a closed circular system and recycled. The only emission from production is a tiny amount of pure and clean water vapor as the material dries.

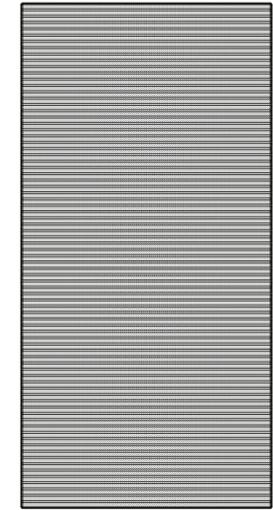
Models:



Origami Pulse



Origami Energy



Origami Sense

Colors:



Wheat 00%



Wheat 00%



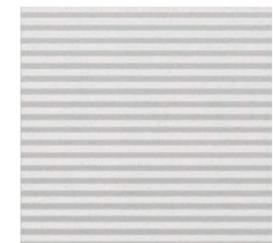
Wheat 00%



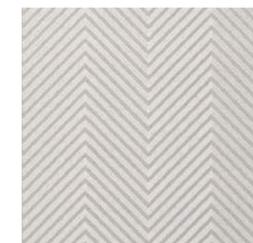
Wheat 05%



Wheat 05%



Wheat 05%



Wheat 30%



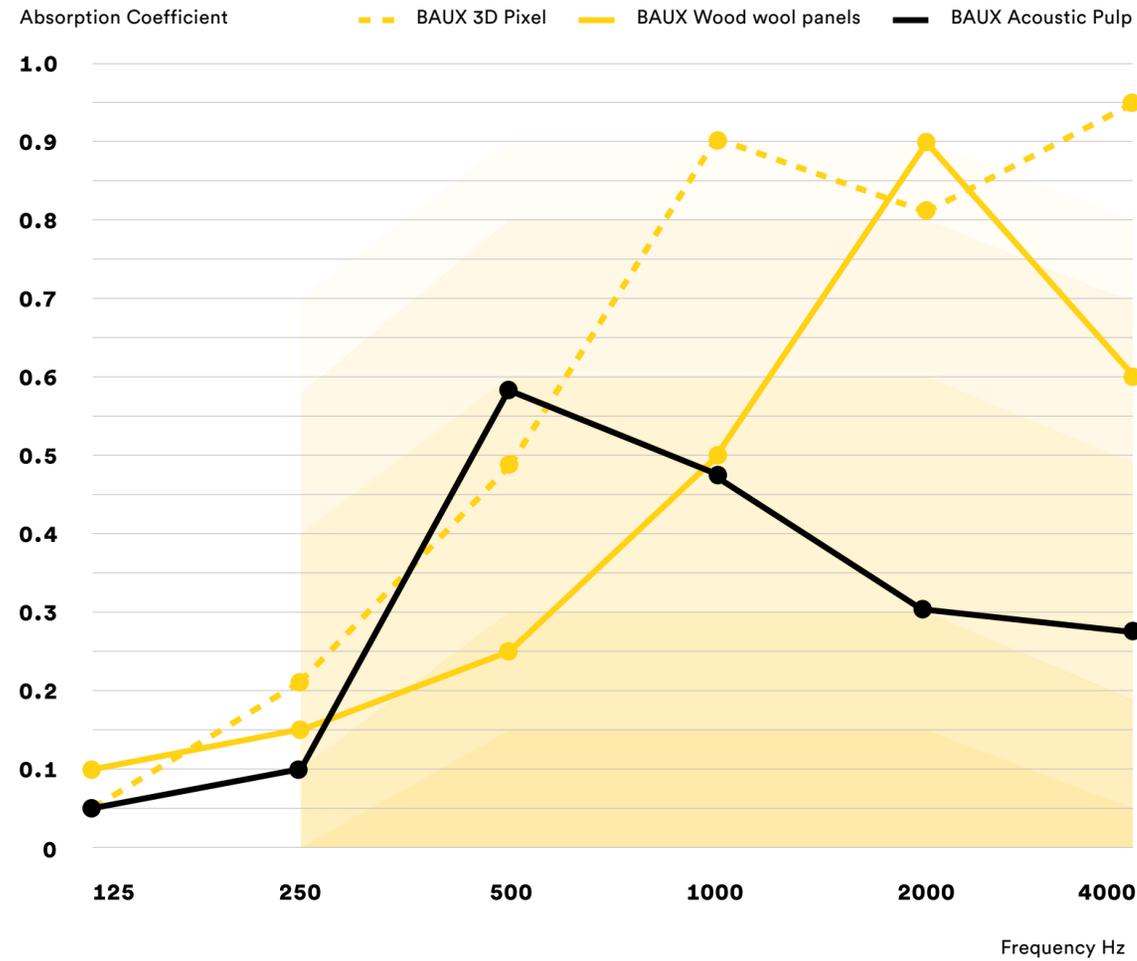
Wheat 30%



Wheat 30%

Sound absorption: Performance testing indicates that BAUX Acoustic Pulp has excellent absorptive qualities, making it well suited for spaces that can benefit from a more restful and focused acoustical environment. A triad of sound absorption mechanisms are used: diffusion, absorption, and chambers. The irregular 3D shaped surface breaks up reflections and spreads them in different directions. The cellulosic material fibers transform sound waves into micro movement and heat. And the honeycomb chambers trap sound waves entering through the perforated surface which bounce around and “die out.”

Data
 $\alpha_w = 0.35$
 $NRC = 0.35$
 $SAA = 0.35$



Fire: Preliminarily D-classed, according to EN 13823 EN ISO 11925-2.

- Mimics the natural wood fossilization process
- Built on knowledge of grass roots' built-in natural fire protection and mechanisms
- Designed for wall applications
- Complete tests will be carried out in the spring of 2019

Dimensions:	Product name:	Color:	Height:	Width:	Thickness:	Weight:	Panels per m2:
	Origami Pulse	Wheat 00%	1 000 mm	500 mm	20 mm	~1,2 kg	2
		Wheat 05%	1 000 mm	500 mm	20 mm	~1,2 kg	2
		Wheat 30%	1 000 mm	500 mm	20 mm	~1,2 kg	2
	Origami Energy	Wheat 00%	1 000 mm	500 mm	20 mm	~1,2 kg	2
		Wheat 05%	1 000 mm	500 mm	20 mm	~1,2 kg	2
		Wheat 30%	1 000 mm	500 mm	20 mm	~1,2 kg	2
	Origami Sense	Wheat 00%	1 000 mm	500 mm	20 mm	~1,2 kg	2
		Wheat 05%	1 000 mm	500 mm	20 mm	~1,2 kg	2
		Wheat 30%	1 000 mm	500 mm	20 mm	~1,2 kg	2

Contact: If you are interested in BAUX Acoustic products, please get in touch! We ship globally through our headquarters and via local partners and representatives. For more information, visit www.baux.se or contact us at info@baux.se.

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