



2026



**BIOMATERIALS**  
material catalog



**PARASTRUCT**  
ENABLING CIRCULAR MATERIALS



# BIOMATERIALS

Circular plant-based construction materials

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## About ParaStruct

ParaStruct is shaping the next generation of circular materials for future-proof design. As a technology company, ParaStruct creates innovative materials that combine recycled mineral binders with plant-based production residues, including wood, fast-growing grasses, cellulose, and biochar.

ParaStruct's material solutions enable a significant reduction in CO2 emissions and resource consumption without compromising on functionality, aesthetics, or industrial scalability. Through the intelligent combination of biogenic fillers with novel binders creates building materials with adjustable properties that can be tailored to different applications and requirements and are suitable for, among other things, the furniture industry, interior design, prefabrication, and architecturally demanding projects.

ParaStruct supports designers, manufacturers, architects, and project developers in translating regenerative material concepts into innovative products with a competitive edge—scalable, recyclable, and compatible with existing manufacturing processes.



# B I O M A T E R I A L S

Circular plant-based construction materials



**Competitive advantages** through  
**future-proof production**



**Furniture board**



**Block material**



**Surfaces & Drywalls**



**Castable compounds**

## About BioMaterials

To meet your customers' needs, you need cost-effective, reliable materials that deliver high quality at minimal cost when used and processed as intended.

Health safety, circular manufacturing and recycling methods, as well as the absence of adhesives and the preservation of the material's value, are becoming increasingly important. Valuing existing resources, minimizing transportation and energy costs, and utilizing regional material flows enhance your value proposition and the environmental footprint of your offerings.

Considering economic and environmental challenges, the design & construction industry is undergoing a transition toward a resource- and energy-efficient circular economy that offers economic advantages and enables materials to be reused at the same or higher value at the end of their useful life, rather than generating hazardous waste.

## Circular & harmless

With BioMaterials, ParaStruct offers a practical, economically and environmentally sound solution for circular products. Test series show that up to 75% of the total mass can consist of renewable raw materials.

This process makes use of plant-based residues from the wood industry and agriculture. A particular advantage is the ability to incorporate previously unused dust and fine fractions as filler material and for surface finishing, thereby storing significant amounts of CO<sub>2</sub> in products rather than having them emitted by them.

The particle size of the raw materials plays a decisive role in determining the density and surface quality of BioMaterials. Finer particle sizes result in a smoother surface, while material density influences the difference between premium-quality and even more cost-effective, yet still effective variants.

Depending on customer requirements, higher surface quality can be achieved through planing, milling, sanding, or additional coating. ParaStruct has also developed an innovative recycling technology that enables BioMaterials to be reused as feedstock after the end of a product cycle. In this way, virgin raw materials are first replaced through the upcycling of residual streams and, subsequently, a closed material loop is established.

BioMaterials are dimensionally stable, with minimal warping or shrinkage. In addition to their flexible applicability and good machinability, the material can be quickly and easily repaired using standard carpentry tools when required. This allows for rapid intervention while reducing costs and risks.

BioMaterials have been continuously improved through years of research and development and are characterized by the following properties:

- **High elasticity and fracture resistance:** The use of biogenic materials such as wood flour as fillers makes BioMaterials more flexible while maintaining high resistance to mechanical loads.
- **Low weight combined with high flexural strength:** Making the material ideal for a wide range of products and applications. Depending on requirements, very high material densities are also achievable.

- **High thermal insulation:** The material exhibits good thermal insulation properties and contributes to improved building energy efficiency (thermal conductivity  $\lambda = 0.40 \text{ W/m}\cdot\text{K}$ ).
- **Ecological advantages:** Renewable raw materials, wood residues, and recycled binders are natural materials and can be used in loop.
- **Electrical conductivity:** BioMaterials prevent electrostatic charging and achieve  $<10\lambda \text{ }\Omega\cdot\text{cm}$ . Materials with such low specific resistance are considered electrically conductive.
- **Sound insulation:** The damping properties of the biogenic material have a positive effect by reducing transmitted sound waves. Depending on the mix design, the loss factor  $\mu$  reaches up to 0.03.
- **Structural performance & strength:** Mix designs can be modulated according to application requirements to ensure a wide range of mechanical properties.





# A Wood-based variants

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### High value use of timber residues

Wood is a central biogenic raw material for ParaStruct and is deliberately sourced from waste and residual material streams for the development of sustainable mineral-biogenic composite materials. Due to its lignocellulosic structure, wood is well suited as both a fiber and filler material while simultaneously contributing to the long-term storage of biogenic carbon in construction materials.

ParaStruct utilizes secondary raw materials such as residual wood from beech, spruce, and birch, apple wood, hemp residues, cork granulate, as well as particleboard dust from the woodbased materials industry. By valorizing these waste streams, ParaStruct combines circular economy principles, resource efficiency, and technical performance within the construction sector.

### Applicable as



Furniture board



Block material



Surfaces & Drywalls



Castable compounds



# Beech

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A Wood-based variants

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## A-01: Beech

Beech, as a renewable raw material, is characterized by its high density and uniform fiber structure. When processed, it is highly suitable for bio-based composite materials. It supports CO2 reduction and circularity and is ideal for panels, lightweight structural elements, and surface applications.

Beech wood is often used for furniture and hardwood floors because of its high hardness and durability.



## Characterization

Beech waste combined produces a homogeneous and stable material with a uniform, warm, and pleasantly tactile surface. It achieves high strength levels after a short curing time.

## Mean value of flexural strength

7 Days %	0,7
AFS 28 Days	11,6 N/mm <sup>2</sup>

## Applicable as



Furniture board



Surfaces & Drywalls



Block material



Castable compounds

## Mean value of compressive strength

7 Days %	0,8
ACS 28 Days	26,8 N/mm <sup>2</sup>



# Beech with sand

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## A-02: Beech with sand

The combination of beech residues with sand merges the advantages of a renewable raw material with the stability of a mineral aggregate. While beech contributes to a homogeneous structure and a strong environmental profile, sand enhances strength and dimensional stability. This results in a versatile composite material with potential for load-bearing components, decorative surfaces, and sustainable construction solutions.

Beech mixed with sand can significantly increase the density and stability of composite materials.



### Characterization

Beech waste and sand create a solid, stable material with a homogeneous, light-colored surface. The wood content provides a warm and pleasant tactile feel, while the sand content significantly increases strength. The resulting material is robust, compact, and suitable for a wide range of applications.

### Applicable as



Furniture board



Surfaces & Drywalls



Block material



Castable compounds

### Mean value of flexural strength

7 Days %	0,8
AFS 28 Days	9,2 N/mm <sup>2</sup>

### Mean value of compressive strength

7 Days %	0,8
ACS 28 Days	28,7 N/mm <sup>2</sup>



# Beech fine-grained and flour

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### A-03: Beech fine-grained and flour

Beech in the form of shavings and flour combines coarse and fine wood fractions into a balanced raw material blend. While the shavings provide volume and structure, the fine flour ensures a homogeneous material density. The composite unites sustainability with strong mechanical properties and is suitable for lightweight construction elements, decorative surfaces, and acoustically effective panels.

Fine-grained beech wood and flour are used as natural fillers to make biomaterials more compact.



### Characterization

Beech shavings and flour produce a stable, dimensionally firm material with a uniform surface. The flour provides density and homogeneity, while the shavings contribute strength and structure. The final material has a natural, warm appearance and a pleasant tactile feel.

### Applicable as



Block material



Castable compounds

### Mean value of flexural strength

7 Days %	0,7
AFS 28 Days	9,9 N/mm <sup>2</sup>

### Mean value of compressive strength

7 Days %	0,7
ACS 28 Days	24,6 N/mm <sup>2</sup>



# Spruce

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## A-04: Spruce

Spruce is a renewable raw material with low density and a uniform fiber structure. Due to its low weight and good availability, it is particularly suitable for lightweight, bio-based composite materials. The use of spruce supports CO2 storage and circularity and offers potential for lightweight construction elements, panels, and acoustically effective surfaces.

Spruce is one of Europe's most important timbers and is frequently used for roof trusses and wooden structures.



### Characterization

Spruce waste produces a lightweight, dimensionally stable material with a homogeneous, light-colored surface. The wood structure provides a warm, natural tactile feel, while the composite with the binder ensures the required strength for various applications.

### Applicable as



Furniture board



Surfaces & Drywalls



Block material



Castable compounds

### Mean value of flexural strength

7 Days %	0,6
AFS 28 Days	14,1 N/mm <sup>2</sup>

### Mean value of compressive strength

7 Days %	0,6
ACS 28 Days	28,5 N/mm <sup>2</sup>



# Birch

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## A-05: Birch

Birch is a renewable raw material with medium density and a fine, uniform fiber structure. In shredded form, it is well suited for homogeneous, bio-based composite materials. Its light color and good workability make birch a promising option for sustainable lightweight elements, panels, and decorative surfaces.

Thanks to its fine grain, birch can produce particularly smooth, high-quality surfaces.



### Characterization

Birch residues produce a stable, dimensionally form material with a homogeneous, light-colored surface. The fine structure ensures consistent strength, while the natural wood color provides a warm and pleasant tactile feel.

### Applicable as



Furniture board



Surfaces & Drywalls



Block material



Castable compounds

### Mean value of flexural strength

7 Days %	0,7
AFS 28 Days	9,8 N/mm <sup>2</sup>

### Mean value of compressive strength

7 Days %	0,7
ACS 28 Days	24,6 N/mm <sup>2</sup>



# Apple

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A Wood-based variants



## A-06: Apple

Apple wood is a dense, renewable raw material with a fine structure and distinctive grain pattern. In shredded form, it is suitable for homogeneous, high-quality composite materials. Owing to its high density and decorative appearance, apple wood offers potential for durable panels, design surfaces, and load-bearing lightweight elements.

Thanks to its hardness, apple wood can be used to make particularly durable and exquisite products.



## Characterization

Apple wood flour produces a stable, dimensionally form material with a homogeneous surface ranging from light to reddish tones. The high density of the wood supports strong strength development, while the natural grain imparts a warm and pleasant tactile feel.

## Applicable as



Furniture board



Surfaces & Drywalls

## Mean value of flexural strength

7 Days %	0,7
AFS 28 Days	9,6 N/mm <sup>2</sup>

## Mean value of compressive strength

7 Days %	0,7
ACS 28 Days	21,2 N/mm <sup>2</sup>



# B Grasses and annual plants

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### Regenerative & bio-based

At ParaStruct, grasses and annual plants are deliberately used as biogenic waste and residual materials in mineral-biogenic composite materials. Due to their high cellulose and hemicellulose content, they are particularly well suited as lightweight fibers and fillers, enabling a reduction in material density while maintaining good structural performance.

ParaStruct utilizes paludi grass, miscanthus, buckwheat husks, and ground rice husks sourced from agricultural side streams. The use of these fast-growing residual materials supports short growth cycles, regional value creation, and the integration of agricultural waste into circular building material systems.

### Applicable as



**Furniture board**



**Block material**



**Surfaces & Drywalls**



**Castable compounds**



# Hemp



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### B-07: Hemp

Hemp is a rapidly renewable raw material with a fibrous structure, low density, and excellent thermal and acoustic insulation properties. Shredded, it is ideally suited for lightweight, bio-based composite materials. The use of hemp contributes to CO2 sequestration and resource conservation and offers potential for lightweight construction elements, insulation materials, and acoustically effective applications.

Hemp was once used for ship's ropes and sails because its fibers are extremely strong and resistant to saltwater.



### Characterization

Hemp fibers create a lightweight, dimensionally stable material with a homogeneous, natural surface. The fibrous structure provides a warm, soft tactile feel, while the binder ensures the necessary strength for a wide range of applications.

### Mean value of flexural strength

7 Days %	0,6
AFS 28 Days	8,1 N/mm <sup>2</sup>

### Applicable as



Surfaces & Drywalls



Block material

### Mean value of compressive strength

7 Days %	0,6
ACS 28 Days	18,5 N/mm <sup>2</sup>



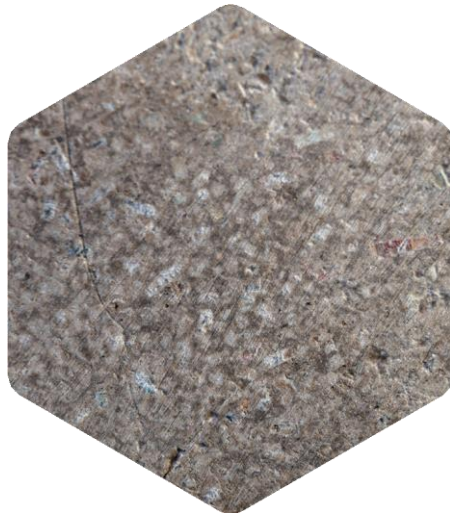
# Hemp with beech



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## B-08: Hemp with beech

The combination of hemp and beech merges the lightness and insulating properties of plant fibers with the strength of a dense hardwood. While hemp contributes low weight and good acoustic performance due to its fibrous structure, beech provides higher stability and a more homogeneous material structure. The composite is suitable for sustainable, bio-based building materials with potential in lightweight construction, panels, and functional surface applications.

Hemp combined with beech can offer both lightness and strength, making it possible to create versatile composite materials.



### Characterization

Hemp and beech residues create a lightweight yet dimensionally stable material with a homogeneous, natural surface. The hemp component provides a warm, soft tactile feel, while the beech increases strength and enhances the material's robustness.

### Mean value of flexural strength

7 Days %	0,7
AFS 28 Days	12,2 N/mm <sup>2</sup>

### Applicable as



Furniture board

Surfaces & Drywalls

Block material

Castable compounds

### Mean value of compressive strength

7 Days %	0,7
ACS 28 Days	25,9 N/mm <sup>2</sup>



# Paludi grass

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## B-09: Paludi grass

Paludi grass is a renewable raw material from paludiculture, grown on rewetted peatlands and actively contributing to climate protection and peatland restoration. Due to its low bulk density and fibrous, porous structure, finely ground paludi grass is highly suitable as a bio-based aggregate for sustainable composite materials. Its use promotes regenerative material strategies and offers diverse potential for lightweight building components, panels, and functional surfaces.

Paludi or bog grass can grow on rewetted peatlands, and peatlands can store more CO<sub>2</sub> than all the world's forests combined.



### Characterization

Finely ground paludi grass results in a lightweight, dimensionally stable material with a homogeneous, natural appearance. The plant-based fiber structure gives the material a warm, pleasant haptic quality, while the mineral binder ensures the required strength and durability.

### Applicable as



Surfaces & Drywalls



Block material



Castable compounds

### Mean value of flexural strength

AFS 28 Days	5,6 N/mm <sup>2</sup>
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### Mean value of compressive strength

ACS 28 Days	28,0 N/mm <sup>2</sup>
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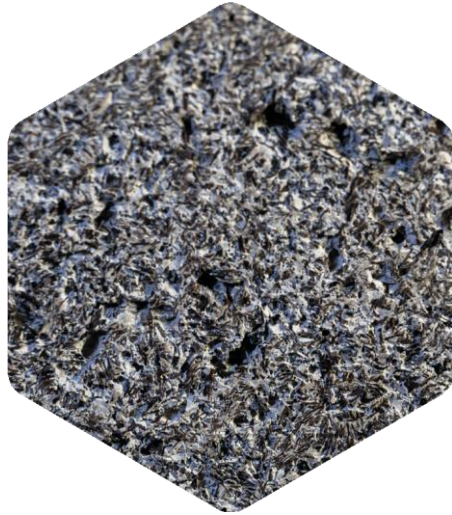
# Buckwheat husks, fine-grained



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## B-10: Buckwheat husks, fine-grained

Buckwheat husks are an agricultural by-product with low density and a fibrous, porous structure. When finely ground, they are well suited as a bio-based additive for sustainable composite materials. Their use contributes to resource conservation and offers potential for lightweight construction elements, panels, and decorative surfaces.

Buckwheat husks have been used for decades as a natural filling for pillows because they conform well to the body and allow air to circulate.



### Characterization

Fine-grained buckwheat husks create a lightweight, dimensionally stable material with a homogeneous, natural surface. The plant based fibrous structure provides a warm and pleasant tactile feel, while the binder ensures the necessary strength.

### Mean value of flexural strength

7 Days %	0,7
AFS 28 Days	5,6 N/mm <sup>2</sup>

### Applicable as



Furniture board



Surfaces & Drywalls

### Mean value of compressive strength

7 Days %	0,6
ACS 28 Days	19,5 N/mm <sup>2</sup>



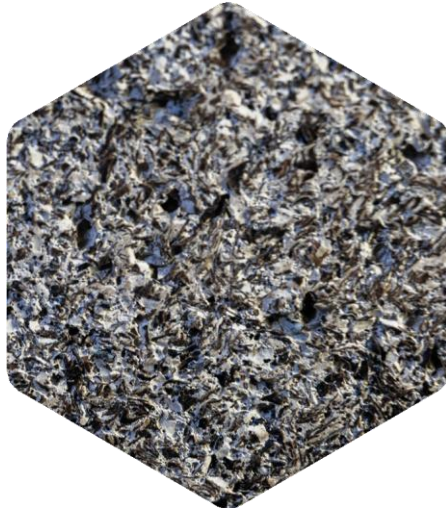
# Buckwheat husks, coarse-grained



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## B-11: Buckwheat husks, coarse-grained

Buckwheat husks are an agricultural by-product with low density and a fibrous, porous structure. In coarse form, they add volume and lightness to bio-based composite materials. Their use contributes to resource conservation and offers potential for lightweight construction elements, panels, and decorative applications.

Buckwheat husks are often used as a sustainable alternative to Styrofoam because they are lightweight and provide good cushioning.



### Characterization

Coarse buckwheat husks create a lightweight, textured material with a natural, open-pored surface. The coarse structure enhances the tactile quality, providing a warm, organic appearance, while the binder stabilizes the composite and ensures dimensional stability.

### Applicable as



Surfaces & Drywalls

### Mean value of flexural strength

7 Days %	0,6
AFS 28 Days	6,7 N/mm <sup>2</sup>

### Mean value of compressive strength

7 Days %	0,7
ACS 28 Days	16,2 N/mm <sup>2</sup>



# Rice husks, grained

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## B-12: Rice husks, grained

Rice husks are an agricultural by-product with a high silica content and a fibrous structure. In ground form, they serve as a lightweight, bio-based additive for sustainable composite materials. Their use supports resource conservation and offers potential for lightweight panels, insulation materials, and decorative applications.

In Asia, rice husks are sometimes burned, and the resulting ash is used as an additive in concrete.



### Characterization

Ground rice husks create a lightweight, dimensionally stable material with a homogeneous, natural surface. Due to their high silica content, the rice husks support strength development, while their plant-based structure provides a warm and pleasant tactile feel.

### Applicable as



Furniture board



Surfaces & Drywalls

### Mean value of flexural strength

7 Days %	0,6
AFS 28 Days	7,7 N/mm <sup>2</sup>

### Mean value of compressive strength

7 Days %	0,7
ACS 28 Days	18,5 N/mm <sup>2</sup>



# Miscanthus





### B-13: Miscanthus

Miscanthus is a rapidly growing renewable raw material with a fibrous, hollow structure and low density. In chopped form, it serves as a lightweight, bio-based additive for sustainable composite materials. The use of reed supports CO2 sequestration and resource conservation and offers potential for lightweight construction elements, acoustically effective panels, and ecological insulation materials.

Miscanthus is primarily grown as an energy crop, with both the plant itself and the residues from energy production serving as raw materials.



### Characterization

Miscanthus creates a lightweight, dimensionally stable material with a textured, natural surface. Its hollow fiber structure enhances thermal insulation and provides a warm, pleasant tactile feel.

### Mean value of flexural strength

7 Days %	0,0
AFS 28 Days	13,0 N/mm <sup>2</sup>

### Applicable as



Furniture board

Surfaces & Drywalls

Block material

Castable compounds

### Mean value of compressive strength

7 Days %	0,0
ACS 28 Days	31,5 N/mm <sup>2</sup>



# C Cellulose-based variants

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### Utilizing finest fractions

Cellulose is a central biogenic raw material for ParaStruct and is primarily sourced from secondary and waste streams. Due to its defined fiber structure, cellulose is particularly suitable for the targeted adjustment of strength, crack behavior, and processability in mineral composite materials.

ParaStruct uses technical cellulose as well as shredded banknotes, enabling high-performance material functions to be derived from paper waste streams that would otherwise be discarded. This approach enhances resource efficiency and the circularity of the developed building materials.

### Applicable as



Furniture board



Surfaces & Drywalls

# Cellulose



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### C-14: Cellulose

Cellulose is a renewable, bio-based raw material characterized by high purity and a fibrous microstructure. It possesses good mechanical properties, chemical resistance, and a uniform structure. As a processed additive, it is suitable for durable composites, improves material efficiency, reduces the use of fossil-based materials, and opens possibilities for load-bearing structural elements, decorative surfaces, and functional coating systems.

Cellulose is the main component of paper - and is even used today in insulation materials for homes.



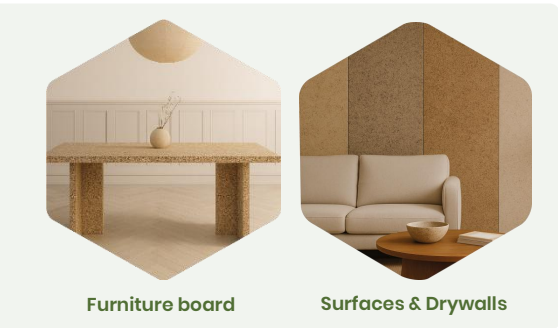
### Characterization

Cellulose produces a stable, dimensionally stable material with a uniform, light-colored surface. The fine fiber structure of the cellulose enhances strength development and helps bridge cracks, while the binder ensures structural stability. The resulting material is characterized by its robustness, durability, and a pleasant, natural feel.

### Mean value of flexural strength

7 Days %	0,6
AFS 28 Days	11,3 N/mm <sup>2</sup>

### Applicable as



### Mean value of compressive strength

7 Days %	0,8
ACS 28 Days	59,9 N/mm <sup>2</sup>



# Shredded banknotes

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C Cellulose-based variants



### C-15: Shredded banknotes

Shredded banknotes consist primarily of cotton fibers and represent a durable, fibrous secondary raw material. Once processed, they serve as a bio-based additive for innovative composite materials. Their use supports the recycling of resource-rich waste streams and opens new possibilities for lightweight panels, decorative surfaces, and sustainable design products.

Banknotes are often made of cotton fibers and are therefore much more durable than regular paper.



### Characterization

Shredded banknotes create a lightweight, dimensionally stable material with a uniform, fiber-textured surface. The cotton fibers provide a warm, textile-like feel, making it suitable for both functional and design-oriented applications.

### Applicable as



Surfaces & Drywalls

### Mean value of flexural strength

7 Days %	0,8
AFS 28 Days	7,0 N/mm <sup>2</sup>

### Mean value of compressive strength

7 Days %	0,7
ACS 28 Days	15,1 N/mm <sup>2</sup>



# D Special variants

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### Climate-positive & carbon-storing

Wherever yet processed material can be utilized for high-performance applications, there lies an opportunity! Industrial production produces huge amounts particleboard dusts, too fine sands and granulates as well as residues from thermal processes.

Biochar is a key functional component of ParaStruct's material systems and is produced from biogenic residual and waste streams. Through pyrolysis, a porous, carbon-rich material is created that acts as a long-term carbon sink and contributes to the development of climate-positive building materials.

Within mineral-biogenic composite materials, biochar improves moisture and thermal regulation, can enhance durability, and enables a significant reduction of the embedded CO<sub>2</sub> footprint. In this way, biochar combines climate protection, functionality, and material innovation within ParaStruct's overall strategy.

### Applicable as



Furniture board



Block material



Surfaces & Drywalls



Castable compounds

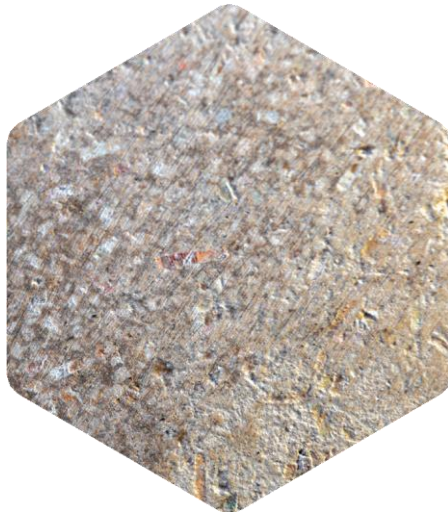


# Particleboard dust with sand

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### D-16: Particleboard dust with sand

Particleboard dust with sand combines the sustainability of a bio-based raw material with the robustness of a mineral aggregate. While the wood flour ensures homogeneity and a warm feel, the sand content enhances strength and dimensional stability. This composite is suitable for sustainable, durable building components, panels, and decorative surfaces.

Particleboard dust mixed with sand can transform industrial waste into new, stable material blends.



### Characterization

Particleboard dust with sand results in a sturdy, solid material with a uniform, light-colored surface. The wood content gives it a natural look and a pleasant feel, while the sand content significantly increases its mechanical strength and durability.

### Applicable as



Furniture board



Surfaces & Drywalls

### Mean value of flexural strength

7 Days %	0,8
AFS 28 Days	6,4 N/mm <sup>2</sup>

### Mean value of compressive strength

7 Days %	0,7
ACS 28 Days	24,8 N/mm <sup>2</sup>

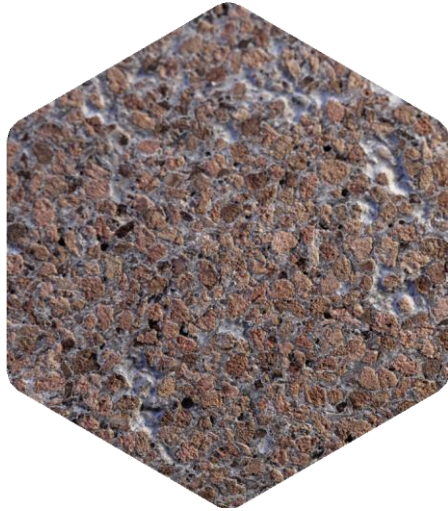


# Cork granulate

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## D-17: Cork granulate

Cork is a renewable raw material obtained from the bark of the cork oak. It is characterized by low density, high elasticity, and excellent thermal insulation properties. In shredded form, cork is particularly suitable for lightweight, sustainable composite materials. Its use contributes to resource conservation and offers potential for insulation materials, lightweight construction elements, and acoustically effective surfaces.

Cork is even used in the Vienna subway to reduce vibrations!



### Characterization

Cork granulate creates a lightweight, dimensionally stable material with a homogeneous, natural surface. Its elastic structure provides a warm and pleasant tactile feel, while the binder ensures sufficient strength for a wide range of applications.

### Applicable as



Surfaces & Drywalls

### Mean value of flexural strength

7 Days %	0,8
AFS 28 Days	4,2 N/mm <sup>2</sup>

### Mean value of compressive strength

7 Days %	1,0
ACS 28 Days	8,1 N/mm <sup>2</sup>



# Biochar heavy

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### D-18: Biochar heavy

Biochar is a carbonized, porous material with a large internal surface area and high chemical stability, produced through the thermal conversion of biomass under oxygen-limited conditions. In formulations with a high biochar content, it serves as a dominant aggregate in bio-based composite materials, enabling particularly high carbon sequestration and significantly improving the overall environmental performance. Typical applications include solid building components, robust panels, and character-rich surfaces.

Biochar is applied to the soil and stores CO<sub>2</sub> for centuries - one of the few true negative-emission technologies.



### Characterization

A high biochar content results in a dense, dimensionally stable material with a homogeneous, deep-dark surface. The high proportion of biochar defines the material's aesthetics and haptics, while the binder ensures the required strength and structural integrity.

### Applicable as



Block material



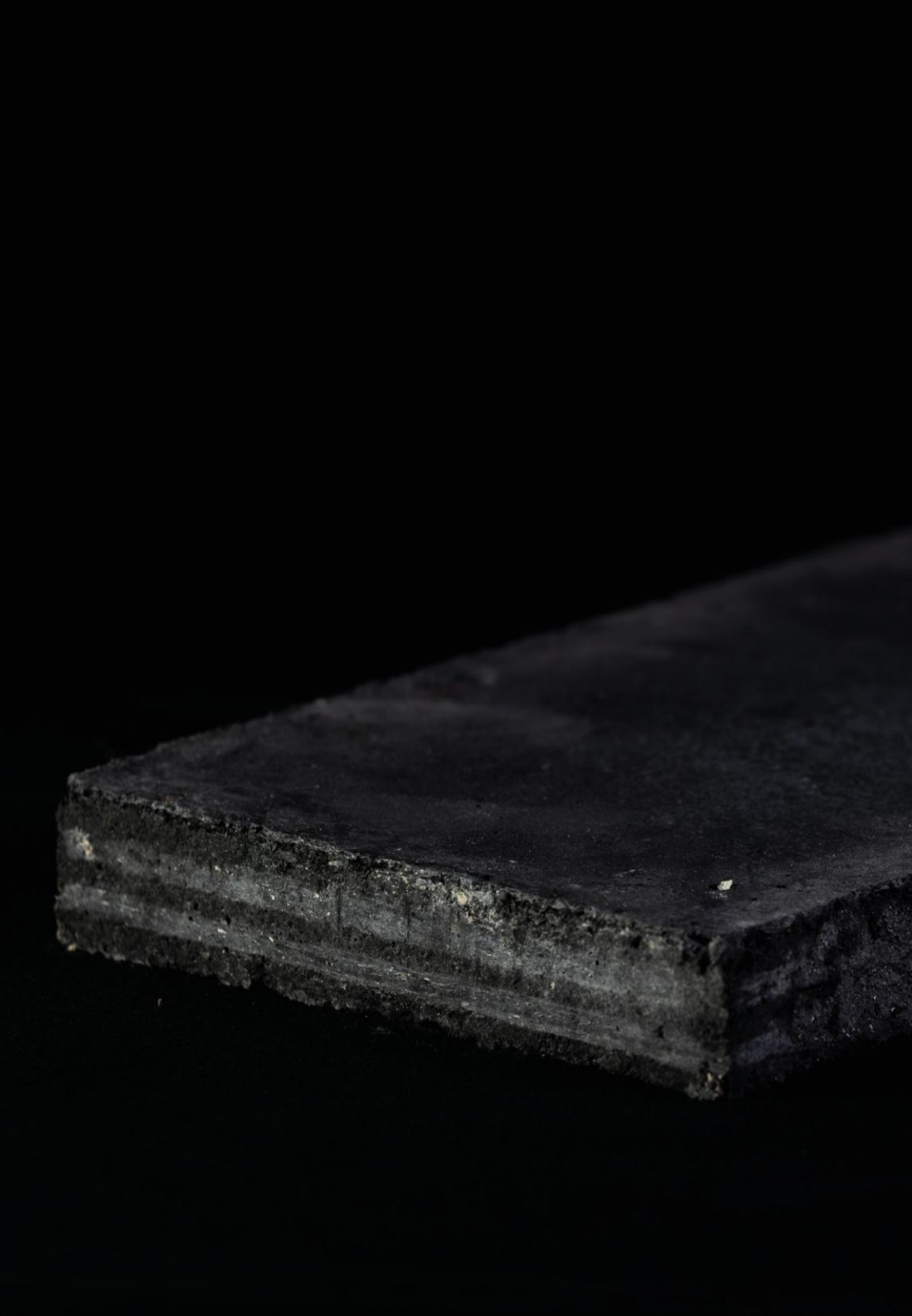
Castable compounds

### Mean value of flexural strength

7 Days %	0,8
AFS 28 Days	3,7 N/mm <sup>2</sup>

### Mean value of compressive strength

7 Days %	0,8
ACS 28 Days	28,0 N/mm <sup>2</sup>



# Biochar medium

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D Special variants

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### D-19: Biochar medium

Biochar is a porous, chemically stable material made from carbonized biomass. In composite materials with a moderate biochar content, it serves as a functional additive, combining sustainability, low weight, and technical properties. Applications include building components, panels, and functional surfaces.

In Japan, biochar is traditionally used as activated carbon to filter water and absorb odors.



### Characterization

A moderate proportion of biochar results in a dimensionally stable material with a uniform, dark surface. The binder provides mechanical strength, while the biochar significantly influences the material's structure, texture, and sustainable performance.

### Applicable as



Surfaces & Drywalls

### Mean value of flexural strength

7 Days %	0,8
AFS 28 Days	3,7 N/mm <sup>2</sup>

### Mean value of compressive strength

7 Days %	0,8
ACS 28 Days	28,0 N/mm <sup>2</sup>



# Biochar light

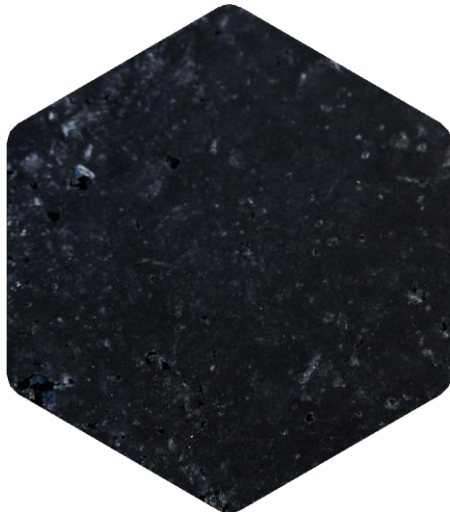
**BIO**MATERIALS 



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D Special variants

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## D-20: Biochar light

Biochar is a carbonized, porous material with a large internal surface area and high chemical stability, produced from biomass under oxygen-deprived conditions. In composites with a low biochar content, it is specifically used as a bio-based additive to improve the environmental footprint and enhance functional properties. Typical applications include lightweight structural components, surface materials, and hybrid composite systems.

Thanks to its porous structure, it has an enormous internal surface area - one gram can have as much surface area as several soccer fields.



### Characterization

A small amount of biochar results in a lightweight, dimensionally stable material with a uniform, dark surface finish. The binder determines the structural strength, while the biochar imparts subtle ecological and tactile qualities to the material.

### Mean value of flexural strength

7 Days %	0,8
AFS 28 Days	3,7 N/mm <sup>2</sup>

### Applicable as



### Mean value of compressive strength

7 Days %	0,8
ACS 28 Days	28,0 N/mm <sup>2</sup>

# BIO MATERIALS

		Flexural strength 28 days	Compr. strength 28 days	Applicable as
A-01	<b>Beech</b>	11,6 N/mm <sup>2</sup>	26,8 N/mm <sup>2</sup>	
A-02	<b>Beech with sand</b>	9,2 N/mm <sup>2</sup>	28,7 N/mm <sup>2</sup>	
A-03	<b>Beech fine-grained and flour</b>	9,9 N/mm <sup>2</sup>	24,6 N/mm <sup>2</sup>	
A-04	<b>Spruce</b>	14,1 N/mm <sup>2</sup>	28,5 N/mm <sup>2</sup>	
A-05	<b>Birch</b>	9,8 N/mm <sup>2</sup>	24,6 N/mm <sup>2</sup>	
A-06	<b>Apple</b>	9,6 N/mm <sup>2</sup>	21,2 N/mm <sup>2</sup>	
B-07	<b>Hemp</b>	8,1 N/mm <sup>2</sup>	18,5 N/mm <sup>2</sup>	
B-08	<b>Hemp with beech</b>	12,2 N/mm <sup>2</sup>	25,9 N/mm <sup>2</sup>	
B-09	<b>Paludi grass</b>	5,6 N/mm <sup>2</sup>	28,0 N/mm <sup>2</sup>	
B-10	<b>Buckwheat husks, fine-grained</b>	5,6 N/mm <sup>2</sup>	19,5 N/mm <sup>2</sup>	
B-11	<b>Buckwheat husks, coarse-grained</b>	6,7 N/mm <sup>2</sup>	16,2 N/mm <sup>2</sup>	
B-12	<b>Rice husks, grained</b>	7,7 N/mm <sup>2</sup>	18,5 N/mm <sup>2</sup>	
B-13	<b>Miscanthus</b>	13,0 N/mm <sup>2</sup>	31,5 N/mm <sup>2</sup>	
C-14	<b>Cellulose</b>	11,3 N/mm <sup>2</sup>	59,9 N/mm <sup>2</sup>	
C-15	<b>Shredded banknotes</b>	7,0 N/mm <sup>2</sup>	15,1 N/mm <sup>2</sup>	
D-16	<b>Particleboard dust with sand</b>	6,4 N/mm <sup>2</sup>	24,8 N/mm <sup>2</sup>	
D-17	<b>Cork granulate</b>	4,2 N/mm <sup>2</sup>	8,1 N/mm <sup>2</sup>	
D-18	<b>Biochar heavy</b>	3,7 N/mm <sup>2</sup>	28,0 N/mm <sup>2</sup>	
D-19	<b>Biochar medium</b>	3,7 N/mm <sup>2</sup>	28,0 N/mm <sup>2</sup>	
D-20	<b>Biochar light</b>	3,7 N/mm <sup>2</sup>	28,0 N/mm <sup>2</sup>	



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## Let's talk opportunities!

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2026



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material catalog



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