

Bamboo, a grass as a hardwood supplier

Bamboo as a raw material source for a material with hardwood properties is a trend-setting material innovation. The giant grass enables the production of natural floor coverings, furniture, interior products, piano hammer heads, piano cases and even products of such great variety that it seems impossible to compile a complete list. Bamboo is therefore conceivable in all applications for which wood-based materials can be used.



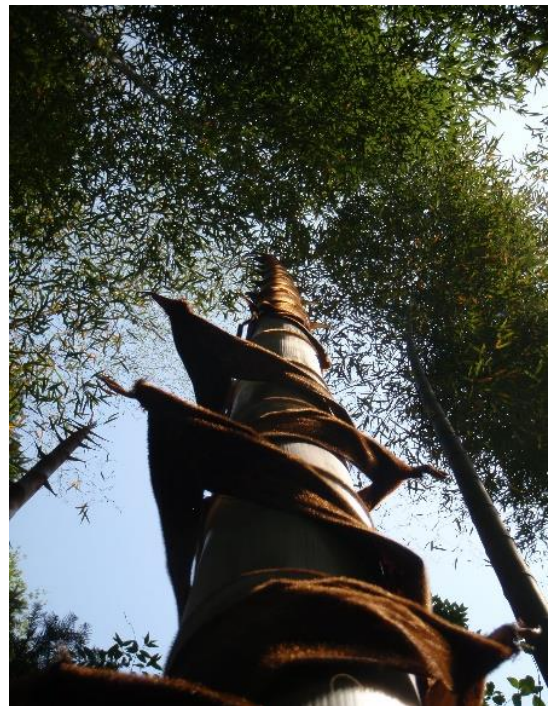
Bamboo forest

With big steps further promising applications for the use of bamboo are opened up. In an impressive way, bamboo not only convinces as an efficient and ecologically sensible alternative to conventional hardwoods, but is also possibly one of the most promising renewable raw materials.

Even after cutting, processing and transport, bamboo has a CO₂ balance that is at least balanced.

Although botanically classified as graminces (grasses), the trunk lignifies within a few years, i.e. it lignifies and forms with the main components cellulose, hemicellulose and lignin a material composition as we know it from conventional wood-based materials. Already after about five years "our" bamboo trunk has become so woody that it has reached its optimum processing quality with regard to the hardness of the wood and other mechanical technological properties.

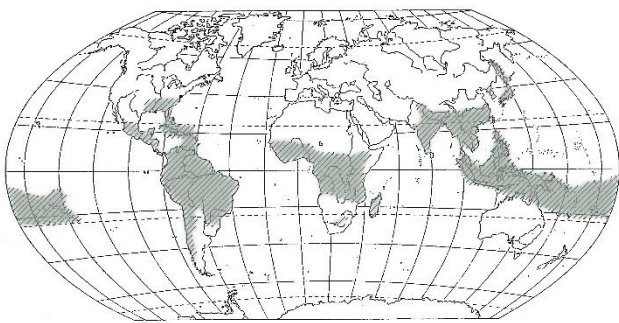
One fifth of the logs per year can therefore be taken from the bamboo forest without disturbing the substance of the stock. On the contrary, selective management ensures that new logs can grow back quickly in the following year to replace the logs harvested in the previous year.



Bamboo plant

Bamboo - a material with tradition

The Earth is surrounded by a bamboo belt and is home to natural bamboo deposits on almost all continents south and north of the 40th latitude, except Europe and Antarctica. Botanists distinguish between 1,500 varieties, from ground cover to 30 m high giant bamboo. However, the largest deposits currently used can be found in Asia. This is also where the world's largest continuous bamboo reservoir is located.



The "Phyllostachys Pubescens" variety used by **ABEL HAMMER COMPANY®** has its home in this subtropical habitat. Phyllostachys Pubescens is for commercial use also mechanically technologically outstanding bamboo species, which is accompanied by a very homogeneous structure across the stem cross-section

Although bamboo was relatively unknown in European culture, technical milestones of Western development are also linked to bamboo. Following a mental illumination, Thomas Alva Edison (1847 - 1931) wrested his first incandescent lamp from a first flare with charred bamboo fibres. A bamboo fibre served as a pickup and provided the first listening pleasure in the early days of the gramophone. In Asia, bamboo has been a fixed cultural component for thousands of years and has established itself in almost all areas of life. Its excellent material properties, such as its

high resistance to compression, tension and bending and its high hardness, make it a material that is highly recommended. The Far Eastern philosophy appropriated the impressive physical properties of the plant in order to convey parables for strength and toughness. For the Japanese sense of beauty, bamboo is the epitome of gentle melancholy. Bamboo laughs, the Chinese say, it nourishes both the body and the mind and rests the soul.

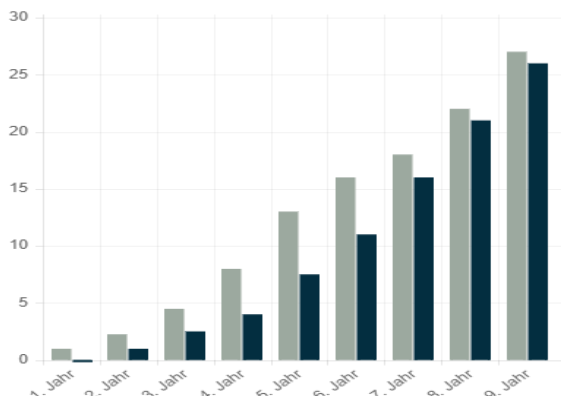
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Impressive CO₂ balance

A look at the ecological dimension of bamboo shows that the plant would be in good hands in a future circular-flow economy. Stocks that are carefully managed by regular felling bind a great deal of CO₂, especially in the first six to seven years, and significantly more than, for example, spruce in the same life span.

Carefully managed bamboo forests, the annual felling of mature bamboo trunks and their use for long-lived goods - for example in the area of building products - could make an efficient contribution to CO₂ capture.

Although the selective removal of the bamboo trunks, management and felling follow the principles of modern and sustainable forestry and would otherwise not make any economic sense. By selectively removing the mature logs, the bamboo forest manager ensures that only those logs are used that are sufficiently lignified for processing, so that in the coming year 20% of the logs will again be ripe for



felling.

Bamboo - a material of the future

The mechanical technological properties, the ecological aspects, the beauty of form and design variety of bamboo send architects, engineers, product designers and material scientists on a voyage of discovery. With new approaches and even disruptive technologies, new product ideas and applications emerge that are based on sustainability and that fit optimally into a future **"green economy"**.



ABEL HAMMER with bamboo moulding



ABEL HAMMERS with bamboo moulding

Reconditioning the bamboo trunk

The bamboo trunk has the shape of a cylinder, it is hollow inside and the lamellas must be worked out from the raw wall. To do this, the log is sawn in or - and this is the rule today - split lengthwise with special tools.



Cutted Bamboo trunk

The blanks obtained in this way are further hemmed in four-sided milling machines and uniformly shaped lamellae are produced which are then available for further processing.

FSC® is the abbreviation for "Forest Stewardship Council"

Founded in California in 1990, this global, independent non-profit organization certifies and monitors the responsible use of forests and their resources, taking into account environmental factors and social standards. It provides a system to monitor supply chains from felling, through processing, to placing the finished product on the market.

All FSC-certified members must commit themselves to the Council's core values and are audited annually. We therefore welcome the fact that more and more tenders, e.g. for public building projects, require goods with FSC certification.

As we are committed to both the FSC and the sustainable use of the raw material bamboo, we also offer products certified according to FSC requirements if required.

Saving nature – Bamboo can do!