



Bridge from Sonowood Maple



Frame and bridge from Sonowood Walnut



Frame and fretboard from Sonowood Maple

Swiss Wood Solutions was founded 2016 as a spin-off of ETH Zurich and Empa. Our interdisciplinary team of scientists and wood technologists have developed novel wood modification technologies to improve domestic woods in their properties, thus meeting contemporary as well as future needs. In the musical instrument world, we offer the innovative product **Sonowood®** made from European and North American wood species from sustainably managed forests. Sonowood matches the favorable acoustic and aesthetic properties of tropical woods while being a completely legal alternative.

Jakob Frank of **Canna Guitars** has been an R&D partner of Sonowood since 2018. A Canna Guitar is an unconventional instrument made to inspire people. Its foundation lies in its body made from Hempstone, consisting solely of hemp fibres and water, manufactured by Norbert Schmid from Drumparam in Austria. The plasticity of the material allows to create a guitar body that fits much closer to the player. The completely redesigned Canna Guitar featuring the innovative and ecologically friendly materials Hempstone and Sonowood guarantees a unique sound and pleasant playing experience. www.cannaguitars.com

Sales, product advice and technical information:

Swiss Wood Solutions AG

c/o Empa
Überlandstrasse 129
CH-8600 Dübendorf, Switzerland

info@swisswoodsolutions.ch
www.swisswoodsolutions.ch

spin-off | Empa

Spinoff | ETH zürich

Sonowood



Tuner from Sonowood Walnut

Sonowood®

In response to the ecological, ethical and legal concerns associated with the use of tropical woods in guitar making, Swiss Wood Solutions has developed the sustainable product Sonowood. For this purpose, sustainable domestic European and North American woods are treated in an innovative compression process.

The outstanding hardness and density of Sonowood ensure that your acoustic and electric guitars deliver highest acoustic performances.

Sonowood advantages for the guitarist:

- Excellent sustain thanks to high stiffness and low sound attenuation.
- Outstanding attack thanks to high sound-propagation velocity.
- Durability and scratch-resistance thanks to complete pore closure. Signs of wear and dirt are greatly reduced.
- Optimum playability thanks to hard and smooth surface and thus lower friction resistance of the strings.
- No travel restrictions thanks to the avoidance of endangered wood species.

Pictures by Jakob Frank, Canna Guitars.

Sonowood advantages for the luthier:

- Sonowood can be milled particularly well and precisely. This makes it ideal for filigree components (bridges, bridge plates and pins) as well as inlays.
- Sonowood can readily be refretted with a low risk of fibre tearing.
- The frets can be hammered in easily and anchor well in the wood.
- No pore fillers are necessary thanks to the complete pore closure.
- Sonowood can be sanded very well. A smooth surface is already achieved by using low grit sandpaper (240).
- Sonowood consists of natural wood (no wood plastic-composite material, no synthetic colours or resins added), which is why its use is associated with the promotion of sustainable, domestic forestry.
- Reliable availability with constant quality.
- No trade restrictions and conservation of value thanks to the avoidance of endangered wood species.

What we offer for guitar

Sonowood is available from **spruce, maple and walnut**. The three species make up for an interesting and wide colour spectrum. Spruce is caramel, while maple features a mocha brown appearance. Walnut is dark-brown.

Fretboard: Blanks for acoustic (520x65x10 mm) and electric (540x65x10 mm) guitars

Fingerboards: Blanks for acoustic and electric guitars (170x50x20 mm each)

Customized dimensions are available. Please contact us. We look forward to hearing from you: info@swisswoodsolutions.ch



Sonowood Maple (*Acer pseudoplatanus*)

Density [kg/m ³]	1'200 – 1'400
Brinell hardness ^{a)} [N/mm ²]	90 – 140
Colour	Mocha
Dimensional stability (Diff. swelling [% per % moisture content change])	Height ~ 0.7 Width ~ 0.3
Sound velocity ^{b)} [m/s]	> 4'400
Damping (Log. decrement)	~ 0.053
Elastic modulus ^{c)} [N/mm ²]	> 23'000

Sonowood Spruce (*Picea abies*)

Density [kg/m ³]	1'300 – 1'400
Brinell hardness ^{a)} [N/mm ²]	100 – 150
Colour	Caramel
Dimensional stability (Diff. swelling [% per % moisture content change])	Height ~ 0.75 Width ~ 0.33
Sound velocity ^{b)} [m/s]	> 5'500
Damping (Log. Decrement)	~ 0.04
Elastic modulus ^{c)} [N/mm ²]	> 39'000

Sonowood Walnut (*Juglans spp.*)

Density [kg/m ³]	1'200 – 1'400
Brinell hardness ^{a)} [N/mm ²]	90 – 140
Colour	Dark-brown
Dimensional stability (Diff. swelling [% per % moisture content change])	Height ~ 0.8 Width ~ 0.25
Sound velocity ^{b)} [m/s]	> 4'400
Damping (Log. Decrement)	~ 0.053
Elastic modulus ^{c)} [N/mm ²]	> 23'000

Comparison values of ebony

Density [kg/m ³]	1'100 – 1'200
Brinell hardness ^{a)} [N/mm ²]	~ 84
Sound velocity ^{b)} [m/s]	~ 4'500

a) perpendicular to grain direction b) in grain direction
c) determined via sound velocity