

Fingerboard from Sonowood Spruce



Stradivarius (1721) with fingerboard and tailpiece from Sonowood Spruce

Chinrest and tailpiece from Sonowood Maple



swiss **wood** solutions

Sonowood

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 properties of tropical woods and even outperforms them in terms of hardness, density and sound quality.

Sales, product advice and technical information:

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spin-off | Empa

Spinoff | ETH zürich



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Sonowood tailpieces

Sonowood®

In response to the ecological, ethical and legal concerns associated with the use of tropical woods in string instruments 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 string instruments deliver highest acoustic performances.

Sonowood advantages for the musician:

- Outstanding acoustic performance thanks to extraordinarily low damping and high sound 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.
- Support of sustainable, domestic forestry by use of an ecologically friendly material.
- No travel restrictions thanks to the avoidance of endangered wood species.

Pictures by Wilhelm Geigenbau.



Violin with fingerboard, tailpiece, chinrest and pegs from Sonowood Maple

Sonowood advantages for the luthier:

- Authentic wood with straightforward workability.
- Sonowood can be milled particularly well and precisely. This makes it ideal for filigree components as well as inlays.
- Although being a very compact material with complete pore closure, Sonowood is easier to plane and shape than ebony.
- 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).
- Reliable availability with constant quality.
- No trade restrictions and conservation of value thanks to the avoidance of endangered wood species.

What we offer for strings

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.

Sonowood offered as square timbers and fittings.

Violins and viola: fingerboard, tailpiece, chinrest, peg and end button

Cello: tailpiece and peg

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 ^{d)} [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 ^{d)} [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