



Carbon: A Magic Material

Because of its quadruple atom binding, carbon is the base element of all organic compounds. The molecules of our genes, sugar, wood and protein are all made from long chains of this element. In its pure form we know it as coal, graphite or diamond, and for several centuries now, as carbon fibre.

In combination with epoxy we call it a carbon composite. Its strength surpasses the strongest steel while being only a fraction of the weight. In addition it is also extremely durable. These factors are the reason why it has become the preferred material for components that need to be light, but at the same time extremely resilient and failsafe. Rotor blades of helicopters and masts of sailing boats are typical examples of its uses.

The superiority of carbon composites compared to pernambuco wood is such that we can make bow sticks with half the weight of a wooden stick but double the stiffness and about 10 times the durability.

One other big advantage for bow making is the unique velocity of sound of carbon fibre. Sound waves travel through an Arcus bow at a record speed of 4,500 miles per second. In direct comparison steel reaches a speed of

3,200 and glass 3,400. Even the best pernambuco or spruce hardly reaches 3,700 miles per second.

A hollow stick (see left picture) also makes a great improvement in the sound. It does not need much explanation to imagine the ways in which the stick, similar to the body of an instrument, vibrates much more freely than a solid body.

A more shallow camber suits the special strength of the Arcus sticks perfectly. In a completely relaxed state the stick still holds a distance of several millimetres to the hair. This design allows the bow to be played with relatively low tension in the hair, providing perfect control and ideal off-string characteristics. At the same time playing chords or a heavy fortissimo will hardly bottom out the stick at the string.

The ultimate strength and hardness of the sticks makes them almost indestructible. Neither playing "collegno" nor a drop off the music stand can do much damage to it. To support this durability our sticks come with a 10 year warranty on material and workmanship.

