

In short

bCores can be machined using standard woodworking equipment. However, to get optimal results without experimenting with several parameters we want to provide you a starting point in this document.

The secret why bCores are simultaneously durable and light weight lies in the different fiber orientations of the balsa and the flax fiber reinforcements. The transition from one layer to the next can be tricky to machine.

Recommended tools

In order to simultaneously reduce machining time and improve the surface finish of the machined core we recommend the P-system tools from [Leuco](#). These peeling tools are tested and proven highly effective. Standard woodworking milling tools can be used as well.

Vacuum table

In order to produce in an efficient manner and get nicely machined cores it is crucial to have a good setup to hold the cores in place, avoiding vibrations during milling.

As the balsa wood is slightly porous but the cutting forces are low, a high flow vacuum pump works best to hold the cores in place. This means that a simple shop-vac might work better than a sophisticated vacuum chuck for hard woods.

If you're facing problems with insufficient clamping force, a simple solution consists in sticking a layer of parcel tape on the bottom side of the core to make it air tight.

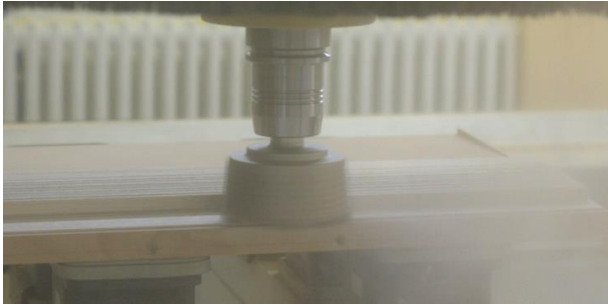
Machining parameters

In the following paragraphs, a few points are given to describe how to adjust the milling parameters:

- Climb milling works best
- Better results can be achieved in the same time when milled in one go to the final depth at a slower feed rate rather than a rough- and a finishing-cut at high feed rates
- Use a big diameter tool, high revolution speeds (= very high cutting speed) and adjust the feed rate accordingly by increasing it until the surface quality deteriorates or chipping occurs
- The thinner the core, the slower the feed rate
- When contour milling the outline of the ski, position the core precisely so the core gets cut out of the center part of the plank. This way you can avoid milling into the reinforcing flax fibers when cutting the outline.

Profiling by End Milling

During tests, the following parameters showed great results:



Tool		prisms rebate cutter Leuco P-System D = Ø86 mm, Z = 3
rev speed	N	15'000 rpm
Cross feed		20 mm
Feed rate	V _f	20 m/min

Profiling by Circumference Milling

During tests, the following parameters showed great results:

Tool		shank cutter Leuco P-System D = Ø86 mm, Z = 4
rev speed	N	13'000 rpm
Feed rate	V _f	30 m/min

Contour milling

During tests, the following parameters showed great results:

Tool		jointing cutter Leuco P-System D = Ø25 mm, Z = 1
rev speed	N	22'000 rpm
Feed rate	V _f	8 m/min



Still troubles with machining? Contact us at:

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