

Demonstration 02 – Coffee table

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This demonstration is a coffee table printed with transparent material. Tabletop material is glass to highlight the internal structure and material properties.

Part was printed in horizontal orientation. Geometry was optimized for large format AM.

Brightplus Loimu C73 transparent is a rigid bioplastic with 99.5% biobased content. More information can be found from <https://brightplus.com/bioplastics/>.

Material flows quite well and has a melting temperature of 178 °C. Heat dissipation of the material is somewhat slow. It is typically not a problem with single wall structures, but with thicker print geometries significant external cooling may be required to avoid excessive melting and layer collapse. Material is also susceptible to warping when cooling down during the printing process in typical industrial hall conditions without chamber. When printing large structures, it is important to ensure good adhesion to print bed, preferably with mechanical fastening.

Possible warping issues were avoided by design and adjusting the printing speed to keep the process in stable layer time regardless of the path length.

Link to video: [<click to open link>](#)

Print info

Material: Brightplus Loimu C73

Dimensions: ? x ? x 500

Weight: 12 kg

Print time: 4 h 35 min

3D-modeling: Rhinoceros

Slicing: Sprutcam Robot X

Extruder: CEAD robotextruder

Robot: KUKA KR-120 R2700

Nozzle size: 6 mm

Layer height: 2 mm

Wall thickness: 6 mm

Print speed: 40 mm / sec

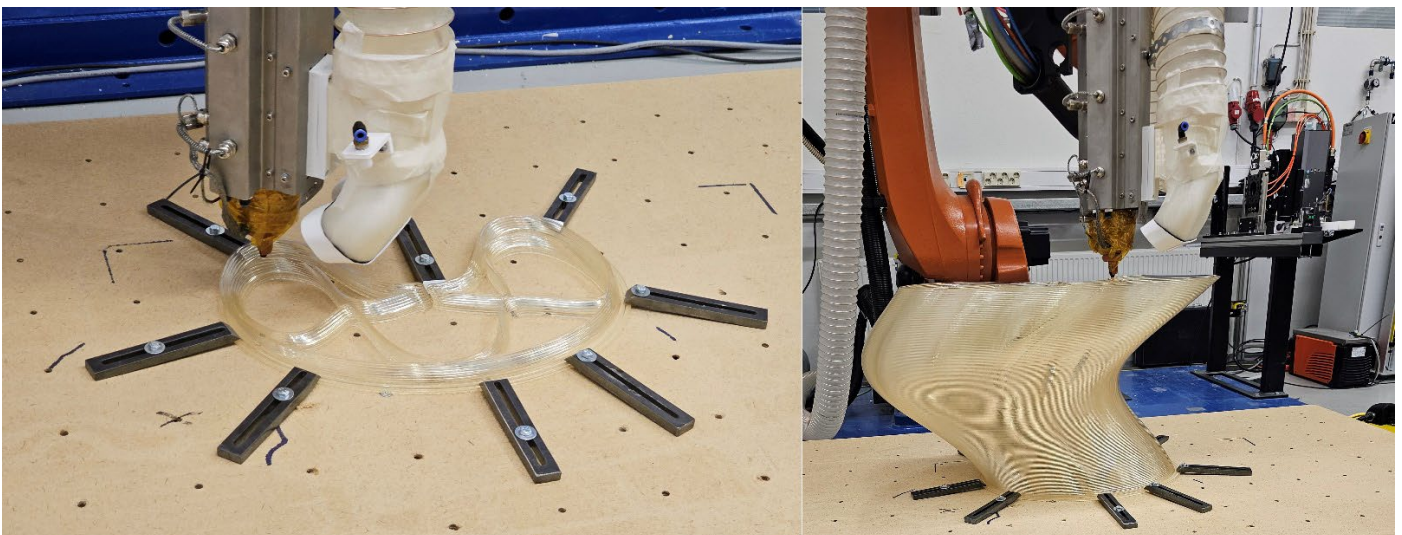


Figure 1. Part was attached to the print bed with mechanical fasteners.



Figure 2. Table frame was designed to be printable with one continuous loop