

Skano Furniture OÜ and TTÜ began co-operation in order to find suitable manufacturing technology of birch wood sink. The company's main objective was to determine whether and how can birch wood sinks be produced. Producing wooden sinks is no longer a technological breakthrough nowadays.

Different types of processing and programming technologies of birch wood sink was identified. Four different ways of processing the wooden sink was analyzed, but two of them were analyzed more deeply. The initial prototype was made using one of the analyzed processing types. There was used a variety of CAD / CAM programs, such as AutoCad, ArtCAM, ExciCam, ExciTech (BeCam3) in the programming of G-codes for CNC-processing.

Different toolpath generating methods of processing wood in CAD / CAM program called ArtCam were explained. The most suitable method for producing birch wood sink was found. Virtual simulations were performed to analyze the quality of surface and to identify the most suitable solution.

The initial prototype of the sink was prepared by the best solution based on proven technology. The prototype was installed in a bathroom to analyze and collect more data and conclusions afterwards. When manufacturing the prototype birch wood sink a NC-program was created using set of ellipses.

A study was conducted to find similar innovative technological solutions and manufacturers of sinks. Other companies were found that have developed solutions for manufacturing wooden sinks. Disadvantages and characteristics of these technological solutions were described.

Differences between cutting tool minimal length and the depth of the sink were analyzed. The quality of different types of cutting tools and surfaces were studied.

Estimated price and processing time calculations for wooden sink production were made. Approximate cost of the birch wood sink to the company Skano Furniture OÜ were calculated.

Two sink prototypes were made, one of the prototypes was coated with varnish and went for further testing. Twelve test pieces (6pc-birch and 6pc-pine) for another thesis were made, in order to identify the most suitable adhesive bonding and finishing options for birch wood sink.