

Quality Control of Robotics Made Timber Plates

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SUMMARY

Wood is one of the oldest construction materials which human beings use. Nowadays it is getting more popular because wood is renewable. On the other hand there are new developments in fabrication and design. However, an industrial robot can be used in timber construction. Researchers from University of Stuttgart started a project to develop a wooden prototype building prefabricated by robotics. There is a low level of experience about how accurate wood can be processed. For that reason one part of the project is the quality control of the prefabricated plates. 24 of 243 wooden plates are measured by a laser tracker. A fabrication accuracy of 0.4 mm in 2D is achieved. Statistical tests show that there are up to 4% of the measurements differ significantly from the CAD model. To make a statement about the behavior of the plate during storage, four plates are measured two additional times, once before the transport to the building site and once after one night at the building side. In this paper an example for one plate is given. This plate shows no deformations between production and after one night at the building side.