



## Multiple Tenons – Experimental Study on Load-Bearing Capacity and Deformation Characteristics

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### Summary:

Modern joinery machines are able to produce precise and complex wood-to-wood connections on a high prefabrication level. For this work, multiple tenon joints were tested to assess the load-bearing capacity and deformation characteristics. Four different geometries of tenon set-ups have been tested. The evaluation of the results shows significantly higher load capacities of multiple tenon joints compared to traditional mortise and tenon geometries. The deformation characteristics show that relocation of loads takes place if the bending capacity of the tenons is guaranteed. Failure of multiple tenon joints occurs with high deformations within the connection. The investigations show the high potential of multiple tenons compared to wood-to-wood connections used currently. Preliminary calculations of mortise and tenon joints show no satisfying accordance with experimental data.

Online Access: Free

### Resource Link

<http://hdl.handle.net/20.500.12708/172>