



## Effect of Growth Ring Orientation on the Rolling Shear Properties of Wooden Cross Layer Under Two-Plate Shear Test

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### Summary:

The design and application of cross laminated timber (CLT) is strongly influenced by rolling shear properties of cross layers. Hence, predicting the mechanical behaviour of CLT requires accurate information about its rolling shear properties. In this study, black spruce wood laminates with three different growth ring orientations (flat sawn, in-between, quarter sawn) were edge glued to produce wooden cross layer (WCL). Two-plate shear tests were carried out on WCL to investigate the influence of growth ring orientation on the rolling shear properties. The experimental results showed that the growth ring orientation had a significant effect on rolling shear modulus of WCL, however, almost no effect on the rolling shear strength. The WCL of in-between end grain had the maximum rolling shear modulus of 89MPa and rolling shear strength of 2.13 MPa.

Online Access: Free

### Resource Link

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