

# SURFACE PROPERTIES OF BIRCH FALSE HEARTWOOD

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Birch is the most common hardwood specie for plywood production in Northern Europe. Over the past years, the plywood industry has gained a lot of new capacity and the overall demand to use raw material more efficiently has led to a situation where it is tendency to use also more and more heartwood in plywood production. The mature birch (*Betula pendula* Roth. and *Betula pubescens* Ehrh.) has a brown coloured area in the centre of the tree, commonly known as ‘false heartwood’. Moreover, RMK (State forest centre) that owns more than a half of the forest resources in Estonia has withdrawn the false heartwood limit of the birch log.

It is noted that veneer from the false heartwood has problems with adhesion [1]. Plywood made of several layers of false heartwood tends to delaminate more often. The aim of this article is to study the mechanical and chemical properties of false heartwood veneer in order to understand the inferior adhesion properties compared to ordinary birch veneer. The research is important for plywood industry that has gained a lot of production capacity in the recent years and has to bond in future veneers with false heartwood.

In this study wood morphology and wetting properties are evaluated by means of SEM and contact angle measurements. Contact angles do not differ remarkably within few seconds after dosing a drop. It can be said that contact angles formed on the surface depend on time. Regular birch absorbs liquids faster than birch with false heartwood. No fungal growths or degradation in false heartwood cell wall or in cell lumens was detected in SEM analysis.

## References

1. B.Sepp, 2015, Master’s thesis: *Improvement of the adhesive joint of the birch veneer peeled from false heartwood*



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