

Method for measuring the spreading of a locally applied load inside a fiber network

During wet pressing a porous felt is pressed against a wet web in order to press out as much water as possible by means of mechanical compaction. The porous felt has a certain surface roughness and experiments have shown that, especially with thin paper webs, the surface roughness influences the flow inside the fiber network.

This phenomenon is explained by the existence of an unevenly compressed layer inside the wet web next to the felt. Little compressed and therefore highly permeable areas are assumed to exist which offer only little resistance for the water to leave the web. A new method for measuring the spreading of the locally applied load is under development. The aim of this method is to measure the actual extent of the compressed areas.

In the proposed thesis, the method will be further developed using image analysis. The method will then be thoroughly tested and modified if necessary. It will then be used to measure the load spreading as a function of the distance between load application points, the web grammage, the pulp type and the web moisture.

The thesis work will be performed in co-operation with the Division of Paper Technology at KTH.

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