

Thermo- Hydromechanical Behaviour of Poplar from Short Term Plantation under Transversal Compression

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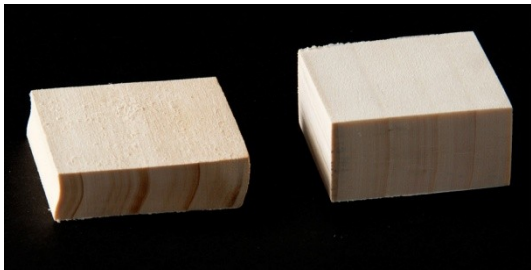
Motivation

Production of *Formholz*

Usage of Poplar from Short Term Plantation

Aim

Material Knowledge and Behavior of
Poplar during Compression in Transversal Direction



Samples

Poplar MAX I
40x40x20mm

radial and tangential

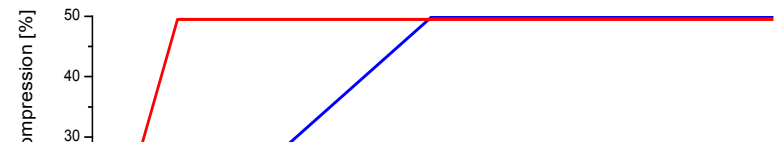
Testing

MC : 7 & 70%

Temp: 20 & 120 C

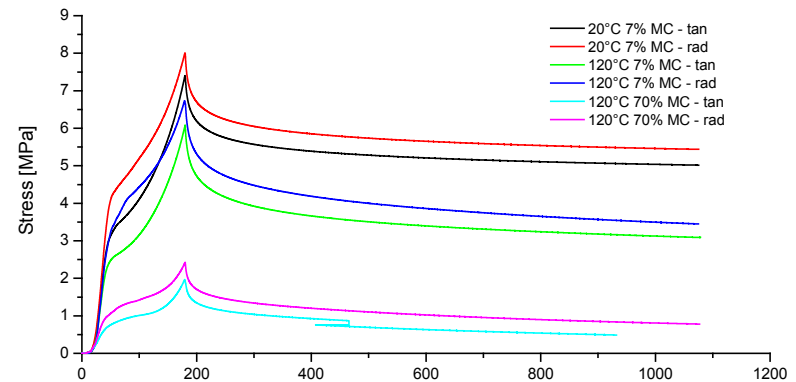
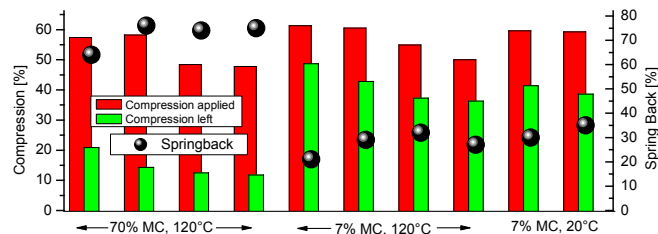
Speed: 1 & 4 mm/min

Densification: 50%



Results

- Stress Strain Relation during Compression
 - Young's Modulus
- Stress Time Relation after Compression
 - Relaxation
- Behaviour after releasing compression force
 - Initial Spring Back



Conclusions

- Only slight difference between radial and tangential direction
- Lower speed leads to lower strain
- Relaxation depending on compression parameters
- Springback depending on compression parameters