

FP1407

ModWoodLife

# CHARACTERISATION OF INTERACTIONS BETWEEN

## THERMALLY MODIFIED WOOD AND WATER

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## MATERIAL AND METHODS

### Specimens

Norway Spruce (*Picea abies*)

Two dimensions

**EN 252**

(25 × 50 × 500 mm)

**EN 113**

(15 × 25 × 50 mm)



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## MATERIAL AND METHODS

### Modification process

Silvapro®

Initial vacuum

Six temperatures:

control

160 °C

180 °C

190 °C

200 °C

210 °C

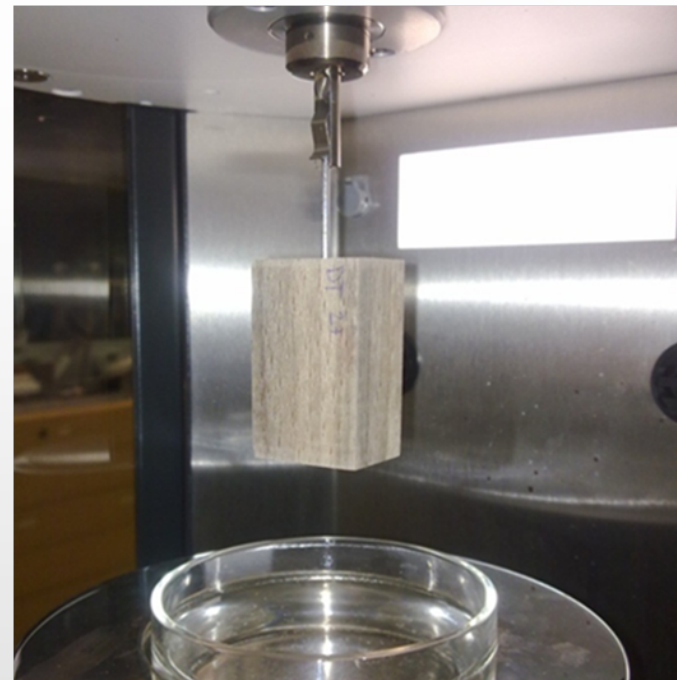
230 °C

Modification time – 3 h



# VARIOUS WATER UPTAKE TECHNIQUES

- Short term water uptake - Tensiometer
- Medium term water uptake
- Long term water uptake and drying
- MC monitoring during weathering



Modification temperature	Ranking				
	Short term water uptake	Medium term immersion (1 h)	Medium term immersion (47 h)	Long term tensiometer	Outdoor monitoring
160 °C	5	5	4	3	7
180 °C	6	6	5	4	5
180 °C	3	4	3	5	6
190 °C	1	3	2		3
200 °C					2
210 °C	2	2	1	1	1
230 °C	4	1	1	2	4

### Short term water uptake

During short term water uptake there is evidence that thermally modified wood uptake less water than untreated control specimens.

### Long term water uptake

Long term wetting results indicate that heat treated specimens retained considerably less water than control specimens.

Long term water uptake method is more predictable than the short term method.

### Outdoor monitoring

Similar results in the short term water uptake and outdoor monitoring confirm that short term uptake is an indicative method.