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
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The Effect of Moisture Content and Wood Density on the Preservative Uptake of
Caucasian fir (*Abies nordmanniana* (Link.) Spach.) Treated with CCA

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 [Keywords](#)
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Abstract: The effect of moisture content and wood density on the preservative uptake (on the basis of the percentage of void volume filled (VVF%)) of Caucasian fir (*Abies nordmanniana* (Link.) Spach.) was studied in various levels of moisture content (MC). VVF% was measured in 11 MC regimes (7 of which were designed to be below the fibre saturation point (FSP)) consecutively nominated using a conventional kiln. All the samples were treated with CCA-tanalith C via a mild schedule of full-cell impregnation. A significant correspondence between MC and both wood density and VVF% was established and an attempt was thus made to correlate VVF% with porosity (the fractional void volume) at respective moisture contents. The significance of these changes was discussed in relation to the FSP, the activity of which was barely detectable. MC values above the FSP stimulate and decrease the retention of preservative in the wood voids, whereas MC values below the FSP influence the preservative uptake due to the effect of the voids available in wood. It was found that there were significant differences in VVF% between the regimes of MC above the FSP, whereas there was quite a different trend at MC values just below the FSP. In this range, there were no differences in VVF% (figures in parentheses) between the levels of MC at 10% (61.6) and 20% (60.3) but there was a significant difference between 22% (59.4) and 28% (56.7). These observations suggest that MC at 22% (close to 20%) could be highlighted as the exact value for Caucasian fir, and hence it may be best to preferentially kiln dry this species to a target moisture content of 22%.

Key Words: Moisture content, Wood density, Preservative uptake, Full-cell process, CCA, Caucasian fir, *Abies* spp

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