

PROPERTIES OF SELECTED WOOD COATINGS APPLIED ON THM - DENSIFIED NORWAY SPRUCE (*PICEA ABIES K.*)

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ABSTRACT

*The aim of this study was to investigate the performance of diverse wood coating systems on THM-densified spruce wood. For this purpose, Norway spruce [*Picea abies K.*] was thermo-hydro-mechanically densified in a closed system, under pressure and steam. Five different types of solvent- and water-based coating systems were applied. To assess the interaction of the coatings and the densified wood, following tests were carried out: exposure to UV light, water permeability and climatic variation. The color of densified wood is more stable to UV light than non-treated wood and the coating system has insignificant influence on color change. When specimens are exposed to a short-term change of climatic variation, the total volume change is less than 5% on uncoated densified wood, neglectable if coated. In case of long-term variation, (specimens exposed until constant weight), the protection effect of the coatings is less significant. The total volume change is appr. 8%. Therefore, if coatings are partially preventing moisture and water uptake of densified wood at short term exposure, they confer limited protection at long term exposure. Moreover, there is not significant performance difference within the different kinds of coating systems.*

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