

Research Article:

**THE EFFECT OF THE HEAT TREATMENT OF SESSILE OAK WOOD
(*Quercus petrea* L.) FROM YOUNG TREES ON THE PROPERTIES OF PANELS WITH
TRANSVERSAL GRAIN**

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Abstract:

Sessile oak from young trees represents a secondary resource with potential for superior applications in furniture panels providing their dimensional stability to variations of relative air humidity is reduced. A possibility to improve this property was examined in this paper, by thermal treatment of the raw material before manufacturing decorative furniture panels with transversal grain. Panels with crosscut grain were manufactured from both heat treated and untreated wood and their properties were compared: dimensional change with climate, the moisture content at equilibrium, the absolute density, colour and their MOE and MOR.

The results have shown that the thermal treatment at 130°C for 2h of sessile oak from young trees has improved the dimensional stability and the equilibrium moisture content of the panels and did not impair their mechanical strength. The colour got slightly darker and density had an almost negligible decrease by the heat treatment. Attractive by design, because of their grain orientation, but in this way subjected to axial stresses perpendicular to the grain, the panels could be used in furniture applications where the bending stresses are not critical.

Key words: *sessile oak from young trees; solid wood panels; heat treatment; dimensional stability; MOE; MOR.*

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