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ONLINE ISSN : 1880-7577

PRINT ISSN : 0021-4795

Mokuzai Gakkaishi

Vol. 52 (2006) , No. 3 p.173-177



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Dimensional Stabilization of Compressed Wood Using High-Frequency Heating II.

Development of a continuous press system for laminated compressed wood

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(Received May 6, 2005)

(Accepted October 3, 2005)

Abstract: We developed a continuous press machine to manufacture compressed laminated veneer lumber(c-LVL) using a high frequency (HF) heating method. The materials were compressed between metal plates followed by HF heating and were then conveyed to the cooling process via bearing rollers attached to the metal plates. As a result, the separation between the heating and cooling processes improved production efficiency.

The 6-ply c-LVL was manufactured from Sugi (*Criptomeria japonica* D. Don) sapwood, 2000mm (L)x12mm (R)x75mm (T) under 50% compression. Following the heating and cooling, the c-LVL shows little set recovery except for the area at the longitudinal ends. We found that a suitable adhesive for HF heating method was a water-based vinyl polymer-isocyanate resin. The increase in number of pieces of laminated veneer enhanced the dimensional stability of the c-LVL, restrained warping after pressing, and had no effect on the bending strength.

Keywords: high-frequency heating, compressed wood, lamination, dimensional stabilization



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To cite this article:

Masafumi Inoue, Junichi Kodama, Yasuji Yamamoto and Yumi Misawa: Mokuzaigakkaishi
Vol. 52, No. 3, 173-177 (2006) .

doi:10.2488/jwrs.52.173

JOI JST.JSTAGE/jwrs/52.173

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