

# APPLICATION OF CARBON DIOXIDE INJECTION TECHNOLOGY IN BAMBOO CEMENT BOARD PRODUCTION

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## Abstract

Bamboo is one of the potential materials that can replace of wood for a variety uses. One of the potential utilization of bamboo is raw material for cement board. However, high starch content of bamboo could potentially become an obstacle to the process of cement hardening. To overcome these disadvantages, bamboo cement board manufacturing technology through carbon dioxide injection was developed. Carbon dioxide injection is expected to speed up the process of cement hardening and improve the quality of the resulting cement board. This research was conducted using parring bamboo (*Gigantochloa atter*) aged 1-2 years. Carbon dioxide injection was applicated in three phases namely; liquid, gas, and supercritical. Injection time for each phase consists of three levels ie 10 minutes, 30 minutes, and 60 minutes. For comparison, cement board using conventional curing for 21 days was also produced. The results showed that cement boards that produced using carbon dioxide injection treatment has similar quality with conventional cement board. This indicates that the applications of carbon dioxide injection technology in the manufacture of bamboo cement boards is very potential because it is able to shorten the curing time from 21 days to a maximum of 60 minutes with a similar quality.

Keywords: bamboo, *gigantochloa atter*, carbon dyoxide, supercritical