Effect of viscoelastic thermal compression (VTC) treatment on density and moisture content of laminas from *Paraserianthes falcataria*

ABSTRACT

Paraserianthes falcataria, a low-density wood species underwent viscoelastic thermal compression (VTC) treatment, which was the combination of pre-steaming and compression by hot-pressing, in order to increase its density and mechanical performance. The aim of this study was to evaluate the impact of VTC treatment on the density and moisture content of *Paraserianthes falcataria* laminas. Several process conditions which consisted of pre-steaming duration (0–30 minutes) and hot-pressing pressure (0–8 MPa) were applied on *Paraserianthes falcataria* laminas. Density and moisture content of *Paraserianthes falcataria* laminas were measured for 7 days. This study found out that process condition of 30 minutes pre-steamed combined with 8 MPa pressing pressure obtained the highest percentage of densification degree (83.71%) based on time period of before the treatment until the next 7 days after VTC process; and the lowest percentage of density improvement was recorded on non-pre-steamed combined with 4 MPa pressing pressure (54.23%). In terms of moisture content, process condition of non-pre-steamed combined with non-hot-pressed recorded the highest equilibrium moisture content (9.5%); while non-pre-steamed combined with 4 MPa pressing pressure had the lowest equilibrium moisture content (6.3%).