

Discolouration and strength reduction of *Bambusa vulgaris* after the weathering process

ABSTRACT

Bambusa vulgaris Schrad was studied for its colour and strength before and after weathering process. Bamboo splits of 300 mm (length) x 20 mm (width) x original thickness were conditioned in a conditioning room at $20\pm 2^{\circ}\text{C}$ and $65\pm 2\%$ relative humidity before and after weathering for 3, 6, and 9 weeks. A Minolta colour reader and a Munsell soil colour chart were used to assess the colour changes (ΔE) and whitish value (W) of bamboo splits before and after the weathering process. Using Universal Testing Machine, the strength of weathered bamboo splits was tested. Results show the colour of bamboo splits changed dramatically (8% to 21%) over time, whereas the whitish value (W) of the bamboo splits reduced 8% to 31% after 3 to 9 weeks of exposure. Bamboo density was reduced by 3% to 17%. Modulus of Elasticity and Modulus of Rupture, in terms of strength qualities, were greatly reduced (20 MPa to 24 MPa) and (12 MPa to 16 MPa), respectively. After being exposed to the weather for 3, 6, and 9 weeks, the colour of *Bambusa vulgaris* changed substantially, and the density and strength of bamboo decreased.