Analysis properties of kenaf yarn for composite fabrication

ABSTRACT

The properties of plant fibre reinforced composites have been addressed in extensive researches, studies and trials. The use of plant fibre as a reinforcement agent in composite materials is getting interest in many sector especially wood based industry, building, automotive and composite industries due to its environmental friendly nature and comparable mechanical properties. Kenaf is one of a good source of high quality natural fibre that can be process into yarn and provide an alternative material for composite production. In this study, the effect of yarn linear density and twist factor on tensile properties of kenaf yarn has been studied. The tensile (tensile strength, tenacity, elongation and Young Modulus) and physical properties of kenaf yarn were carried out. A kenaf yarn with four different linear densities of 500tex, 1000tex, 1500tex and 2000tex were studied. It was found that tensile properties except Young modulus increases for higher linear density of kenaf yarn. The kenaf yarn with 2000tex has the highest tensile strength among the other samples. The study also showed that the kenaf yarn moisture sorption were lowest with higher linear density.

Keyword: Kenaf; Yarn; Linear mass density; Twist angle; Twist amount