DEVELOPMENT OF AN EXPERIMENTAL METHOD TO MEASURE FIBER BUNDLE FRICTION

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Abstract

In order to investigate a coefficient of friction of fiber bundle, an attachment for tensile testing machine is designed and built. This attachment allows us to measure the static and kinetic coefficient of friction of a fiber bundle based on the ASTM D1894 or ISO 8295: 2004 standards. Major items of the attachment include a fixed horizontal rectangular-shaped metallic plate and a pulley. A pulley is positioned at one end of the table that allows the moveable sled to be pulled horizontally along the plate. Moveable sled is attached to the crosshead with a suitable tow-line. A tow-line connects the sled to a low-force load cell with a pulley that guides the tow-line during the test. The attachment is mounted to the base of the tensile tester and the sled is pulled across the fixed table as the load cell moves. Data will be recorded from the load cell during the test and analyzed to determine both static and kinetic friction.