

Influence of Specimen Temperature on Wear Characteristics of AA6063 Aluminium Alloy

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Abstract

Dry sliding wear performance of aluminium alloy (AA 6063) was studied by varying applied normal load, sliding velocity and varying specimen temperatures from 50 to 150 °C. The results signify that the wear increases as the load increases from 10 to 20 N, while it decreases when the sliding velocity of the specimen increases from 1 to 2 m/s at room temperature. As the temperature of the specimen increases, the wear rate increases marginally at initial stage and then increases rapidly for a constant load and velocity. The specific wear was found to be decreased when load and sliding velocity were increased. However, in the case of varying specimen temperature condition, particularly at elevated temperature of the specimen, the specific wear showed an increasing trend. Coefficient of friction (COF) was nearly stable to both load and velocity, but it is marginally vary when temperature of the specimen increases from 50 to 100 °C and it decreases rapidly from 100 to 150 °C.

Keywords: AA 6063 Alloy, Coefficient of Friction, Pin-on-Disc, Specific Wear Rate, Wear Rate, Wear Resistance