

# Experimental Investigation of Mechanical Properties on Al7075 with Hybrid Reinforcements

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**Abstract:** *The study's main objective is to investigate the dry sliding wear and other mechanical properties of aluminium with newer dual particle reinforced hybrid composite compositions. The stir casting method was used to create the aluminium hybrid metal matrix composite, which was then tested to determine its hardness, wear and microscopic photographs of worn-out surfaces as a result of the wear test. Three alternative reinforcing ratios Sample 1 (1% B<sub>4</sub>C and 3% SiC), Sample 2 (1% B<sub>4</sub>C and 6% SiC), and Sample 3 (1% B<sub>4</sub>C and 9% SiC) were used to manufacture hybrid composites. In this study, samples made with three different ratios of reinforced composite material were tested for hardness and temperature wear. Results illustrated that sample 2's hardness and wear attributes (1% B<sub>4</sub>C and 6% SiC) are superior to those of the other samples in terms of both hardness and wear rate.*

**Keywords:** Reinforced hybrid composite, Stir casting, dry sliding wear test, Hardness test

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