

## **Strain-Rate Sensitivity of Boron Alloyed Steel**

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### **ABSTRACT**

Boron alloyed steel is an advanced high strength steel that can potentially reduce vehicle body weight. In this study, strain rate sensitivity and energy absorption of boron alloy steel 22MnB5 is compared to mild steel AISI 1018. The specimen used is following ASTM E8 standard and it consist of non-heat treated specimen and heat treated specimen. Three different strain-rates were experimented that is 1mm/min, 2.5mm/min and 4mm/min. Data obtained from the experiment was plotted in load versus extension graph. Based on the result obtained, it shows that the boron alloy steel 22MnB5 with heat treatment give better result of strain rate sensitivity and energy absorption compare to non-heat treatment. Other than that, boron alloy steel promotes better properties than mild steel for both heat treatment and non-heat treatment.

**KEYWORDS:** Strain-rate, lightweight materials, boron steel