

**ANALYSIS OF IMPACT TOUGHNESS AND CORROSION RATES OF
REOTO ELECTRIC MOTORCYCLE FENDERS
MADE FROM ESER PLATE**

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ABSTRACT

This research aims to analyze the impact toughness and corrosion rate of eser plate material as a material for making Reoto electric motorbike fenders. The research method was carried out by making specimens with varying heating times of 5 seconds, 10 seconds and 15 seconds. Tests carried out include the Charpy method impact test according to ASTM E23 standards and the corrosion rate test using the 5% NaCl solution immersion method according to ASTM G31. The research results showed that the highest impact toughness value was obtained at 5 seconds of heating at 0.9219 J/mm², then decreased at 10 seconds at 0.8830 J/mm² and at 15 seconds at 0.8515 J/mm². The lowest corrosion rate occurred at 5 seconds of heating at 0.5535 mm/year, increased at 10 seconds at 1.8451 mm/year, and the highest at 15 seconds at 9.7791 mm/year. These results indicate that the longer the heating time, the toughness of the material decreases and the corrosion rate increases. Based on these results, the eser plate is suitable for use as a fender material with optimal heating process control, namely 5 seconds.

Key words: *Charpy method, ASTM E23, ASTM G31, 5% NaCl solution, heating time, heat treatment.*