EXPERIMENTAL STUDY ON EFFECT OF AGING TEMPERATURE ON MECHANICAL PROPERTIES OF ALUMINUM ALLOY HARDENING PRECIPITATION TYPE 2024

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ABSTRACT

Aluminum is the material is widely used in human activities. in operating condition or use, aluminum is expected to have certain mechanical properties such as hardness and mechanical properties can be improved by doing some treatment process that is mechanical treatment or heat treatment.

This research will study the process of age hardening on aging temperatures vary with permanent detention. Type 2024 aluminum alloy was carried out the process of treatment solution to a temperature of $500^\circ$C, and then detained for about 30 minutes, then carried through the medium of quenching oil cooler. after the aluminium alloy was carried out artificial aging process with aging temperature is determined by the barrier remains to change the mechanical properties.

From this study, the hardness, strength, and impact the greatest strength at aging temperature $190^\circ$C. In specimens having over $260^\circ$C aging temperature aging, so the mechanical properties and particle CuAl$_2$ looked down on the microstructure.

Keywords: precipitation hardening, artificial aging, over aging