ABSTRACT

The car when production using the aluminium–silicon alloy (A356.0), the chehe machining is under the JIS H 5202 standard. In order to increase the mechanical ability, they should through a artificial aging T5 process at A356.0 alloy with adding variation Mg.

Single the temperature variations 155°C, 170°C, 185°C, 200°C, 215°C, 230°C, 245°C, at A356.0 alloy with Mg mixing 0.30%, 0.35, 0.40%, 0.45 giving the best result to the mechanic properties compare to the other artificial aging, so these kid of heat treatment is chosened.

From the research is knew then higher variation Mg 0.30 then should thought a artificial aging 245°C in creance the mechanical properties, lowest adding variation Mg they are : UTS = 19,94Kg/mm², Elongation = 8,80 %, Hardness 18,66 HRB, Impact = 0,061 J/mm². And at highest adding variation Mg 0.45 then should thought a artificial aging 215°C, they are : UTS = 30,82 Kg/mm², Elongation = 4,20 %, Hardness = 56,33 HRB, Impact = 0,030 J/mm². Statistic analysis using ANAVA given artificial aging T5 and variation Mg have influence to mechanical properties increase where temperature aging is more dominant that Mg mixing.