Thermal Treatment Influence on the Change of Alloy EN AW-6082 Mechanical Properties

Pavel Solfronk, Jiri Sobotka, Michaela Kolnerova, David Korecek
Faculty of Mechanical Engineering, Technical University of Liberec. Studentská 1402/2, 461 17 Liberec
Czech Republic. E-mail: pavel.solfronk@tul.cz, jiri.sobotka@tul.cz, michaela.kolnerova@tul.cz, david.korecek@tul.cz

Thermal treatment of the aluminum alloys significantly affects their final mechanical properties. However, the process of such thermal treatment is influenced by many variables and the correct choice of these technological parameters is a prerequisite for achieving their required properties in the manufactured part. This paper evaluates the effect of thermal treatment conditions on the time course of hardness for EN AW-6082 alloy during artificial aging. For the experiment, the solution annealing temperature of 520°C was chosen in combination with three different holding times at this temperature and then also 3 different initial temperature of the material before cooling in water. The effect of the thermal treatment parameters was subsequently monitored by the Brinell hardness time course at 3 selected artificial aging temperatures.

Keywords: Alluminium Alloy EN AW-6082, Thermal Treatment, Brinell Hardness, Hot Forging, Solution Annealing

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