

Investigation of Cutting Temperature during AlCu3MgMnPb Aluminium Alloy Turning

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The main aim of this experimental paper is investigation, analyzing and realizing the experimental measurement of cutting temperature when external turning of rotational parts made from AlCu3MgMnPb aluminum alloy. In this experimental study a number of turning tests have been carried out by using a test lathe and a cutting temperature measuring device. This measurement have been successively investigated and experimentally verified with the special samples (in experimental measuring of the temperature during the turning process of samples and measured results designated with special thermal camcorder type FLIR used for special measurement of cutting temperature). The theoretical contribution of the realized experiment is the finding that the change of cutting speed, depth of cut, feed motion and cutting temperature increase with increasing of the chip emerging influence factors change over time. Practical benefit is recognition that the emerging shape of the chips in turning of aluminum alloy is a consequence of the deformation process, which depends on the measured sample from its crystal structure and the conditions under which the deformation process occurs mainly by the deformation, cutting speed and temperature.

Keywords: Aluminum Alloy, Camcorder FLIR, Cutting Temperature, Turning Technology

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