Built-up Edge Formation in Machining AlSi7Mg0.3 Alloy

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One of the main problems in machining Al alloys represents built-up edge formation. This paper is focused on the effect of selected modifiers in AlSi7Mg0.3 alloy on built-up edge formation. Four variants of castings modified by strontium, calcium and antimony are used. All these alloys are compared with non-modified alloy. Built-up formation leads to the increasing of surface roughness for both types of built-up edge - unstable or stable. If unstable built-up edge is produced, surface roughness increases enormously. Therefore the research is focused on surface roughness in different cutting conditions. There were moulded castings of non-modified alloy and for each modified variant. Gravity-die castings into a metal mould with a thermal insulation were made.

Keywords: AlSi7Mg0.3 alloy, Modifiers, Machining, Built-up edge

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