Research on Aluminium Alloy AlCu4Mg Surface Machined by Abrasive Water Jet

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The paper deals with a machining of the aluminium alloy by means of an unconventional technology, i.e. an abrasive water jet (AWJ). The paper deals with a study of an influence of the abrasive water jet at its impact on a surface of the machined material, i.e. the aluminium alloy AlCu4Mg of a thickness 20 mm. A topography of the machined surface is evaluated within the research by means of roughness parameters. A surface analysis is also evaluated by means of a scanning electron microscopy (SEM) depending on a cutting speed and a mass flow of the abrasivum. The research results proved an increased influence of the cutting speed and the mass flow of the abrasivum. The optimum cutting speed was 50 mm.min^{-1}, the cut was uniform without a significant grooved zone typical for cuts by means of AWJ technology.

Keywords: cutting speed, gap width, mass flow of abrasivum, SEM, surface roughness

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