The use of fractography in the analysis of cracking after formed workpiece blank mechanical machining from the AlCuSnBi alloy

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The aim of the performed works was research on the causes of formed aluminum blanks cracking in the range of the AlCuSnBi alloy rods where cracks appear during mechanical machining (turning, drilling) of this range to the final part. AlCuSnBi alloy was invented as a substitute for aluminum machining alloys Al - Cu type alloyed with lead. For the alloy were performed qualitative and quantitative fractographic analysis of the fracture surface after machining in order to determine possible causes cracking of the material and thus his lack of strength during machining. Part of this paper is to the overall theoretical analysis of the issue. This paper clearly documents that fractographic analysis methods can significantly and to the extent required to provide answers to the causes of insufficient material strength during machining. Also points out the possible causes of cracks in this alloy during machining and ways to eliminate them.

Key words: AlCuSnBi alloy, machining, EDX analysis, fractographic analysis

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