The Porosity Evaluation with Using Image Analyser Software in Aluminium Cast Alloys

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Aluminium castings have played an integral role in the growth of the aluminium industry since its inception in the late 19th century. The Al-Si-Cu alloys are the most versatile materials, comprising 85 – 90 % of the total aluminium cast parts produced by the automotive industry due to their highest strength to weight ratio, good thermal conductivity, excellent fluidity, hot tear resistance and feeding characteristics which allow casting intricate shapes such as engine blocks, cylinder head sore chassis components and so on. Whereas these parts are made by casting the porosity evolution is important, in order to secure the best mechanical properties of these casts. Therefore this work is focused on evolution the porosity in Al-Si-Cu cast alloys using light metallography microscopy and image analyser software. The evolution shows that the experimental material casted into the metallic mould had about 98.78 % smaller porosity size in comparison to the material casted into the sand mould, therefore it showed better properties.

Keywords: Porosity, Aluminium alloy, Image analyser software, Metallic mould, Sand mould

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