Influence of the homogenization annealing on microstructure and mechanical properties of AlZn5,5Mg2,5Cu1,5 alloy

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In the course of homogenizing annealing of aluminium alloys being cast continually or semi-continually it appears that chemical in homogeneity takes off within separate dendritic cells (crystal segregation). It is about a diffusional process that takes place at the temperature which approaches the liquid temperature of the material. In that process the transition of soluble intermetallic compounds and eutectic to solid solution occurs and it suppresses crystal segregation significantly. Temperature, homogenization time, the size of dendritic cells and diffusion length influence homogenizing process. The article explores the optimization of homogenizing process in terms of its time and homogenizing annealing temperature which influence mechanical properties of AlZn5,5Mg2,5Cu1,5 alloy.

Keywords: homogenizing annealing, AlZn5,5Mg2,5Cu1,5 alloy, crystal segregation, EDX - analysis

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