

# Effect of Mg, Si and Cu content on the microstructure of dilute 6000 series aluminium alloys

## Abstract

The effect of Mg, Si and Cu content on the microstructural development during ageing treatment of dilute 6000 series alloys have been investigated using transmission electron microscopy (TEM). Four dilute alloys were used in this study. These alloys were subjected to quenching and artificial ageing at 100 °C, 185 °C and 300 °C. The microstructural developments of the precipitates formed were monitored by TEM. The ageing temperature of 100 °C was found to be too low to form precipitates. It was found that needle or rod-shaped precipitates were formed in the alloys after ageing at 185 and 300 °C. Prolong ageing up to 1000 h at 300 °C resulted in the formation of Mg<sub>2</sub>Si precipitate that coexists with the type of AlFeSi and Si precipitates. The results show a correlation between the Mg<sub>2</sub>Si, Si and Cu content on the microstructure of the four dilute alloys after ageing treatment.