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Improving the room-temperature formability of a magnesium alloy sheet by texture control

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Abstract

In this study, a sheet of AZ31 magnesium alloy was compressed by 3%, 5%, and 7% along the in-plane direction while simultaneously applying a compressive load in the normal direction (ND) to avoid buckling during compression. Changes in the microstructure and texture were measured after annealing. Recrystallization and grain growth occurred in grains with higher deformation energy than surrounding grains after annealing at 300 °C. The area fraction of the orientations for which the *c*-axis and transverse direction (TD) are parallel (twinned grains) and the orientations with an angle between the *c*-axis and ND ranged from

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