

# Processing Map for Hot Deformation of Homogenized AZ61 Mg Alloy

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## Abstract

Based on the experimental results from the hot compression tests of homogenized cast AZ61 Mg alloy, processing maps were constructed by superimposition of the instability maps over the power dissipation maps. The domain with the efficiency of power dissipation reaching a local maximum and flow instability region were identified in the processing maps. The processing map obtained at a strain of 0.6 exhibited only one domain with local maximum efficiency of power dissipation. The microstructure observations showed that variation in microstructure was related to the deformation condition, which was associated with the variation in efficiency of power dissipation.

Keyword : AZ61 Mg alloy, Processing map, Efficiency of power dissipation, Instability