

In the present work the deformation behaviour of magnesium-based alloy AZ31 which was produced by horizontal continual casting is investigated. Samples with two different orientations are deformed in tension and compression at strain rate of  $10^{-3} \text{ s}^{-1}$  in temperature range of 20 °C to 300 °C. Simultaneously, the acoustic emission is recorded and studied with focused on mechanical twinning. The mechanisms of plastic deformation of material and anisotropy between tension and compression are discussed. Dependence of deformation behaviour on temperature is analyzed. The microstructure of original and deformed material is also studied by means of optical microscopy.