

This work is focused on the study of the relationship between microstructure, texture and deformation mechanisms in aluminum-free magnesium (Mg) alloys. Extruded alloys containing zirconium, zinc, manganese and neodymium (ZK10, MN11, ZN11) in a form of rectangular profiles were deformed at room temperature. Uniaxial tensile and compression tests were performed in the extrusion (ED), transversal (TD) and normal direction (ND). The concurrent acoustic emission (AE) measurement was used in order to study the collective dislocation dynamic and the nucleation of twins. The deformation texture was studied by X-ray diffraction on samples deformed in compression up to different stress levels.

Keywords: Mg alloys, deformation tests, acoustic emission, texture