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**Type and density of dislocations in a plastically deformed long-period stacking ordered  
magnesium alloy**

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**Abstract**

The density and type of dislocations were studied in a plastically deformed long-period stacking ordered (LPSO) phase of a Mg<sub>89</sub>Y<sub>7</sub>Zn<sub>4</sub> (at.%) alloy. The volume fraction of the LPSO phase was as high as ~85%. The plastic deformation was carried out by uniaxial compression up to the strain of ~25% in both as-cast and extruded states. The order of magnitude of the dislocation density was  $\sim 10^{14} \text{ m}^{-2}$  after compression to the strain of ~25% for both as-cast and extruded materials. It was also found that most of the dislocations formed

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