

심한전단변형한 알루미늄의 집합조직

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Texture of severe shear deformation rolled aluminum alloy sheet

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Abstract

Drawability and other mechanical properties of sheet metals are strongly dependent on their textures.

In this paper the textures of the Al alloy sheets was investigated after severe shear deformation rolling and subsequent heat treatment. In most cases, after severe shear deformation rolling specimens showed the {110}<112>, γ -fiber texture component were observed. The anisotropy of formability is often described by the plastic strain ratios (r-value) as a function of the angle to the rolling direction in sheet metal. For a good formability, a high r-value is required in sheet metals. In the severe shear deformed rolling and subsequent heat treated Al alloy sheet, the variation of the plastic strain ratios have been investigated in this study. The plastic strain ratios of the severe shear deformed rolling and subsequent heat treated Al alloy sheets were higher than those of the original Al sheets. These could be related to the formation of {110}<112>, γ -fiber texture components through severe shear deformation rolling in Al sheet.

Key Words : Aluminum Alloy Sheet, Severe Shear Deformation Rolling, Texture, r-value, {110}<112>, γ -Fiber Texture

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