

## Mg합금의 열간단조시 초기 조직의 영향

김태옥<sup>1</sup>, 권용남<sup>1</sup>, 김상우<sup>1</sup>, 이정환<sup>1</sup>

### Effect of Initial Structure for Hot forging of Mg alloy

T.-O. Kim, Y.-N. Kwon, S. W. Kim, J. H. Lee

#### ABSTRACT

Mg alloys have the highest specific strength which can be used industrial application. Since formability of Mg alloys is very limited, optimization of forming process is always needed for successful engineering application. In the present study, three different Mg alloys(AZ31, AZ61, Zk60) were used for hot forging processes and several process variables such as temperature and forging speed were investigated to improve overall forgeability of Mg alloys. To understand the effect of process variables in details, 2D-finite element analysis and forging experiment was performed. Three different alloys showed a similar dependency with forming temperature, which higher temperature led to better formability. In the case of forging speed, a higher speed might result in a better forging result. However, three alloys showed different response to forging speed. Twinning behavior in terms of forming conditions among three alloys was found to be different, which might be responsible for the different forgeability among three different alloys.

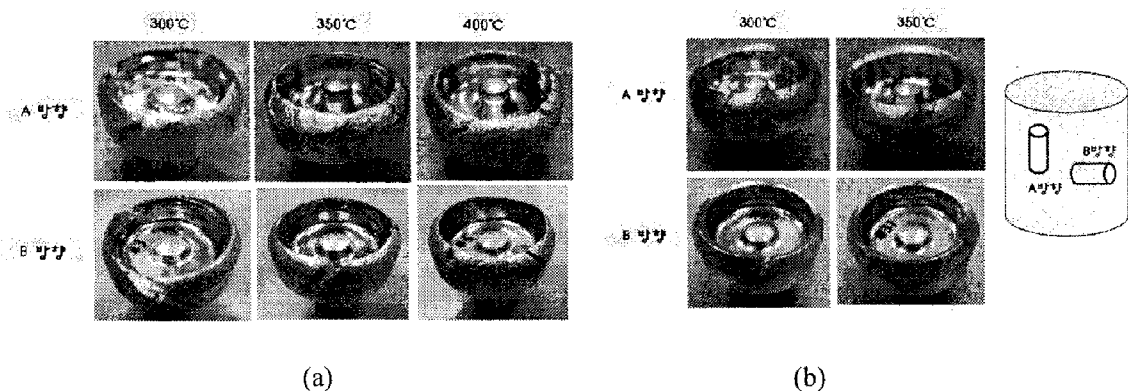


Figure. Hot forging results of Mg alloy (a) AZ31 and (b) ZK60

Keyword: Mg alloy, Forging, Texture

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1. 한국기계연구원 부설 재료연구소 융합공정연구부  
# 교신저자: 재료연구소, E-mail: kyn1740@kims.re.kr