

Mg study on the process variables affected on formability of Mg alloy sheet

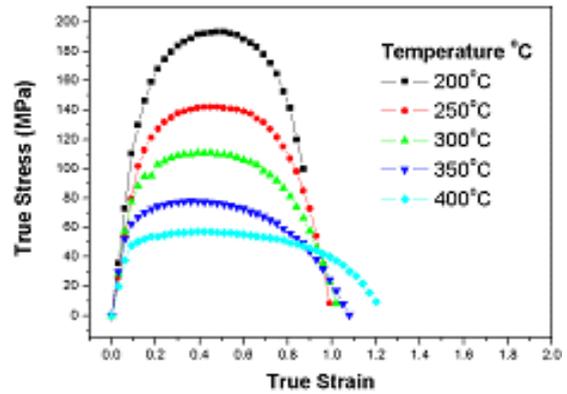
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Key words : Mg, Sheet, Formability, Process Variables, FLD, Square Cup Deep Drawing, Friction, Forming Speed

1.

250°C 300°C

0.01/s



a strain rate .1 sec

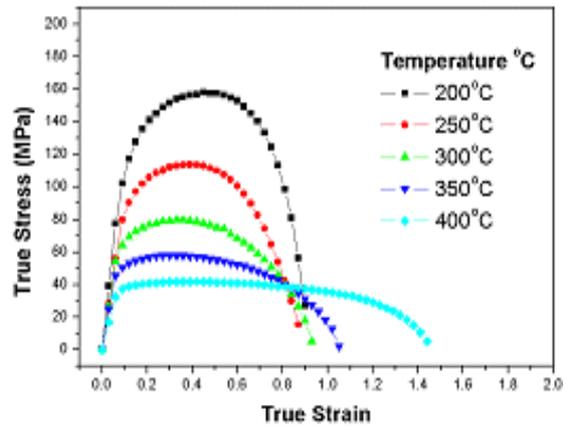
2.

Mg

200, 250, 300, 350, 400
0.1/s, 0.01/s, 0.001/s

1

Fig.1



train rate . 1 sec

가

10 m

0.001/s

250°C

7 m

0.01/s

5.6 m, 0.1/s

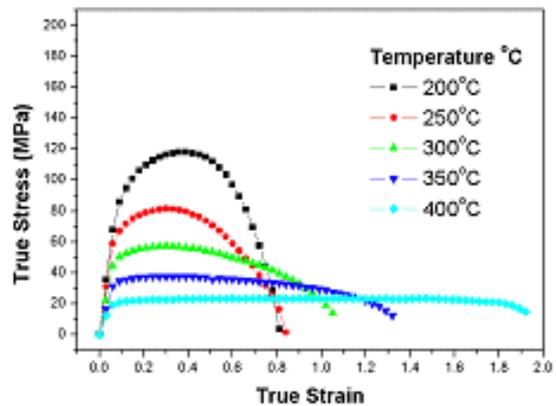
300°C

7.54 m,

0.001/s

7.35 m

0.001/s



c train rate . 1 sec

Fig. 1 Flow stress curve at variable temperature

3.

Fig. 2
 100mm/sec, 400°C
 200°C 300°C
 100mm/sec, 10mm/sec
 10mm/sec 250°C, 10mm/sec
 Fig. 3 400°C,
 Fig. 3.(a)

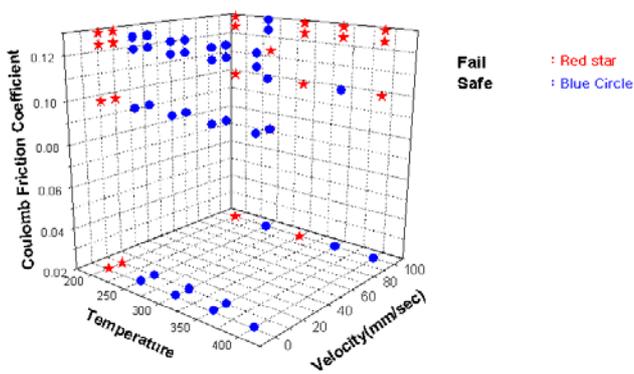
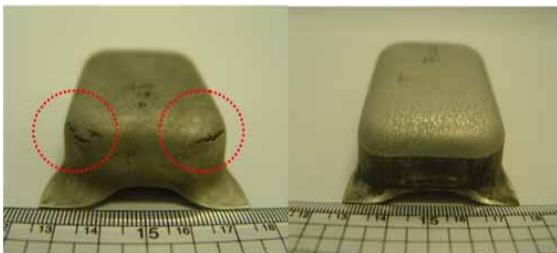


Fig. 2 Failures according to the friction, temperature and forming velocity in square cup drawing



(a) 400°C, 10mm/sec (b) 250°C, 10mm/sec
 Fig. 3 Square cups drawn at various conditions

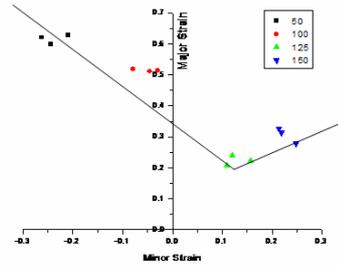
4. F D

Mg

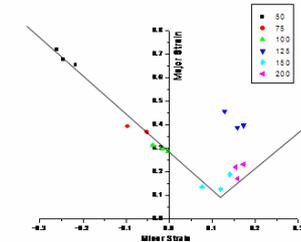
250

Fig. 4

[strain rate : 0.01/sec.]



[strain rate : 0.1/sec.]



[strain rate : 1/sec.]

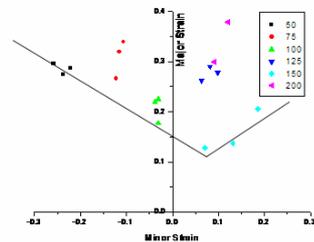


Fig. 4 FLD according to the strain rate at 250°C forming temperature.

Mg

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