



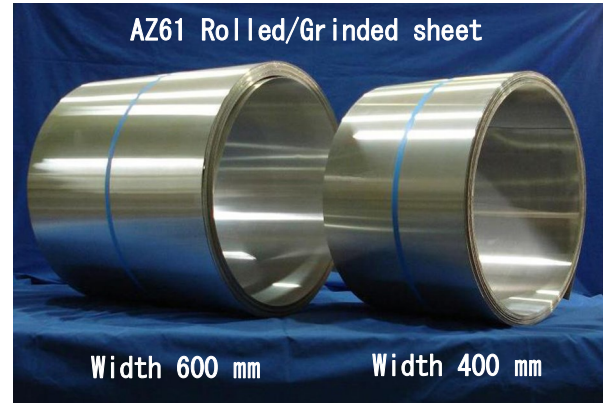
Gonda Metal Industry Co., Ltd.

Press Formability of Magnesium Alloy Sheet AZ61

“As for the magnesium sheet, it is AZ31.” It has been generally recognized in the magnesium industry up to now. However, Gonda Metal has succeeded in the development of magnesium alloy sheet AZ61 which is superior to AZ31 sheet in the weight-to-strength ratio, corrosion resistance and surface treatment by combining each process of casting by GTRC (Gonda Twin-Roll Casting system; originally developed by our own technology), subsequently rolling and grinding processes.

Moreover, Gonda Metal has just proved that the press formability of AZ61 sheet is excellent by purchasing a warm servo press machine under the supply of subsidy for supporting product development by MONODZUKURI (Manufacturing) Small and Medium Enterprises in 2009.

Gonda Metal can supply the rolling and grinding sheet in 0.5-3.0 mm thickness and up to 600 mm in width.



Excellent Press Performance of AZ61 Sheet

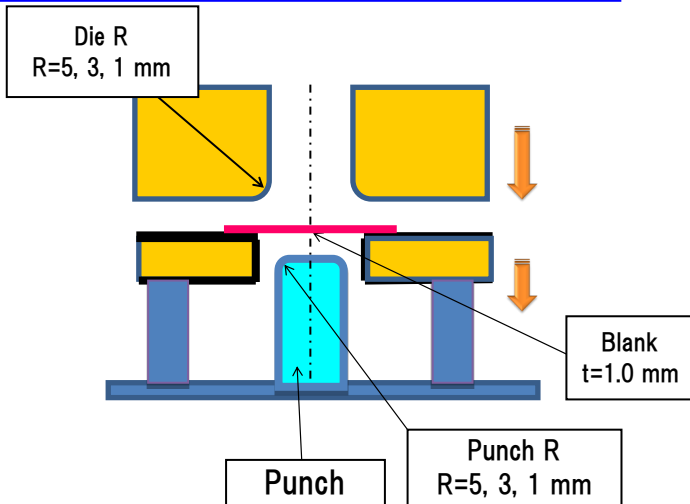
It is possible to perform a warm forming to AZ61 sheet as well as AZ31 sheet. And it is also possible to perform plating and welding to AZ61 sheet.

In the deep-drawing test with cup drawing punch stated in the below, it is possible to obtain over 2.0 of LDR (Limiting Drawing Ratio) under the condition of temperature over 300°C even if the punch R is 1 mm (=inner R is 1 mm).

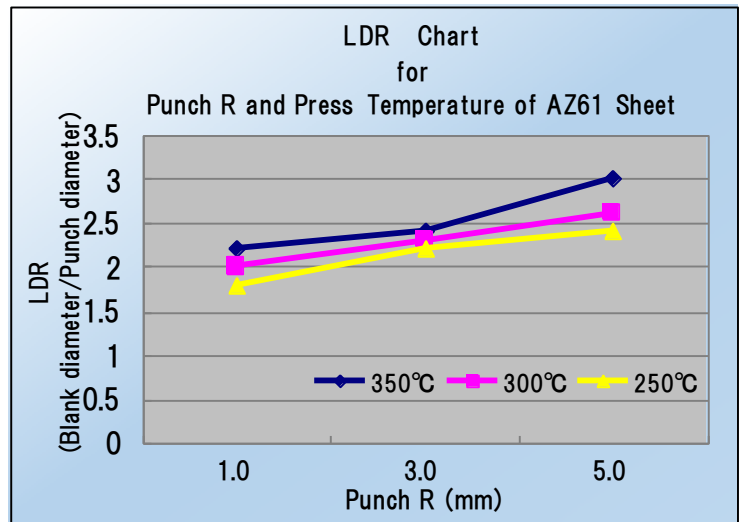
Additionally, it is also possible to obtain the same result at 250°C if the suitable conditions for producing the sheet and for pressing are given.

In the severe test with square drawing punch, more severe than the test with cup, it is also possible to obtain over 2.0 of LDR under the condition of temperature over 300°C even if the punch R is 1 mm.

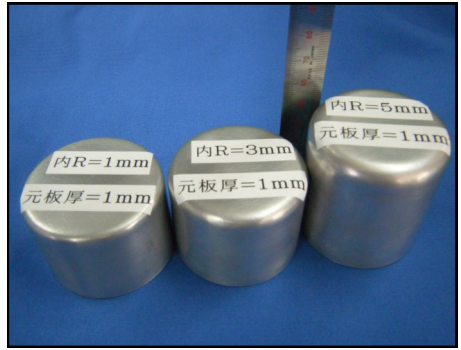
Deep-Drawing Test



Schema for Die and Punch of Deep-Drawing Test



Test pieces of Deep-Drawing Test



▲Cups (t=1.0 mm sheet is used)
Punch R 1 mm, R 3 mm, R 5 mm from left side



▲Square Cups (t=1.0 mm sheet is used)
Punch R 1 mm, R 3 mm, R 5 mm from left side

Press Works



▲Mobile phone cover (t=0.6 mm sheet is used)
48 mm x 82 mm Inner R of outline 2 mm



▲Note PC cover for A4 size (0.6 mm sheet is used)
330 mm x 280 mm Inner R of outline 3 mm

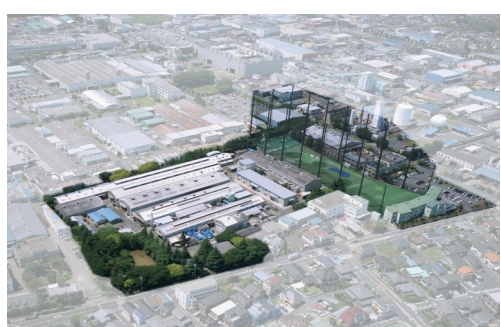
Surface Treatment



▲Nickel-Chromium Plating



▲Anodization/Electrodeposition (Black/Yellow/Green)



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