

Standard of Limit Drawing Ratio

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11. Scope of Application

This standard applies to the testing method of limit drawing ratio that is drawing forming standard of sheet metal that is machining material of press processing.

2. Purpose

This standard is for pre-deciding of material's forming possibility, deciding of material's forming characteristic and choosing of good material for processing's purpose with appraising forming characteristic of drawing processing that is the most important in press forming processing.

3. Definition of Terminology

Definition of terminology that is used in this standard is like this.

(1) Drawing ratio

It means indicated amount when drawing of rounded sheet metal as a cylinder cup like this.

Drawing ratio = (diameter of material) / (diameter of cylinder cup)

(2) Limit drawing ratio

It means maximum drawing ratio that some material can have. Generally the bigger limit drawing ratio is, the better drawing characteristic is and the smaller it is, the worse drawing character is. This data is the data that can't be expressed simply by basic characteristic of difference factor and work hardening index that sheet steel plate have. Limit drawing ratio of sheet steel plate that is used for car's outer sheet has the data between 2.1 and 2.4.

4. Test Apparatus

Use test apparatus in press that can keep the velocity of punch between 19mm and 21mm per minute and can control blank pressing force. (reference drawing 1) Recommend apparatus of structure that can change friction state easily.