

## عنوان مقاله:

Comparison of the forming limit diagrams obtained from two methods of the two-sample hydraulic bulge test and the hemispherical punch test

## محل انتشار:

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## خلاصه مقاله:

Low carbon steel sheets have always been used in various industries such as automobiles, due to their excellent formability and mechanical properties. Obtaining a forming limit diagram is a common method for evaluating the formability of sheets. In this research, in order to obtain the forming limit diagram of ST14 steel sheet, the two-sample hydraulic bulge test was used. Also, the forming limit diagram was obtained using the hemispherical punch test (ASTM 2218). There is an acceptable agreement between the two curves on the left side of the forming limit diagram. A slight difference between the two curves on the right side of the diagram was observed due to the frictional, clamping, and geometric conditions of the biaxial tension mode specimen. In general, due to a fracture in the polar region of the samples in the hydraulic bulge test, reliable strain limits were obtained. Thus, it is shown the method presented in this paper can be used as an accurate, low-cost, and fast method in obtaining FLDs.

## کلمات کلیدی:

low carbon steel, FLD, hydraulic bulge test, hemispherical punch test

## لینک ثابت مقاله در پایگاه سیویلیکا:

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