

## عنوان مقاله:

RESIDUAL STRESS MEASUREMENT OF A 316L STAINLESS STEEL QUENCHED CYLINDER USING CONTOUR METHOD

## محل انتشار:

هجدهمین کنفرانس سالانه مهندسی مکانیک (سال: 1389)

تعداد صفحات اصل مقاله: 5

## نویسندگان:

Amir Hossein Mahmoudi - Associate Professor, Mechanical Engineering Department Of Bu Ali Sina University

Vahid Azarifar - Master Student , Mechanical Engineering Department Of Bu Ali Sina University

## خلاصه مقاله:

Residual stresses (RS) can be defined as those stresses that remain within the engineering components following manufacturing and other load histories in the absence of external forces or thermal gradients. To investigate the structural integrity of the engineering components an exact knowledge of residual stress distributions is essential. There are many different methods for measuring residual stresses available. Each technique has got advantages and disadvantages. For thin section components, measurements of residual stress may be carried out using non-destructive techniques such as Xray or neutron diffraction. However, for components with sections too large for X-rays or neutrons to penetrate, mechanical strain relief techniques must be used. These techniques work by measuring strains or displacements when part of the component is machined away. The underlying assumption is that such strain or displacement changes result from elastic unloading. One of the destructive techniques for measuring residual stresses is the Contour method. The Contour method is a technique allowing the full field residual stress to be measured. However, this technique can only provide the normal to surface component of stress. In this work, cylindrical specimens were made of 316L stainless steel. The cylinders were then quenched. The quenching process induced highly triaxial residual stresses within the cylinders. Finally residual stresses were measured using the Contour method.

## کلمات کلیدی:

Residual stress; Contour method; Finite Element; Quenching

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/96044>

