

Strain survey on a small plate with a circular hole in the center

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Abstract

This is a study of the effect of stress concentration on a small plate with circular hole at the center. The strain at edge of the plate and at the edge of hole were determined. Strain gages were used to measure strains at points of interest, for example, on a line passing through the center of the hole and perpendicular to the applied tensile stress. Several plates were tested each with a different size hole, to study the effect of ratio of hole diameter to plate width on the stress concentration at edges of the hole and the stress level at the boundary of the plate.