Advances in Aircraft Structures

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Experimental Determination of Critical Buckling Load for a Perforated Plate

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Abstract

The effect of the size and shape of the cutout on the buckling load of a perforated plate is studied experimentally in this chapter. The results are validated and are presented in graphical form. Both the circular and square cutouts are considered.

Keywords: *Buckling, plate, experimental, cutouts, critical load.*

1. Introduction

The buckling of rectangular plates has been the subject of study for more than a century. Exact and approximate solutions for rectangular plates have been derived. There are many exact solutions for linear elastic isotropic thin plates as treated by Megson (1972), Nemeth (1990), and Ko (1998). Their field of work covers both analysis of plate with and without hole. In this chapter we study plates with cutouts by experimental approach.