

Influence of cut-out hole on multi-layer Kevlar-29/epoxy composite laminated plates

ABSTRACT

This paper presented the effect of cutout hole on multi layer of Kevlar-29/epoxy composite laminated plates this effect occurred and fiber orientation angle. An experimental procedure was developed to study the performance of these effects under quasi-static compressive and tensile load using a servo-hydraulic testing machine. The work involved investigation on the variety of orientation angles of Kevlar-29 fiber. The ultimate load of failure for each Kevlar-29/epoxy laminated plates had been determined and specified the optimum angle orientation and the load reduction due to the effect of fiber orientation angle ($+45^{\circ}/-45^{\circ}$) was low in the case for compared ($0^{\circ}/90^{\circ}$) orientation angle of fiber. To simulate this problem the researcher used Explicit Mesh for AUTODYN under ANSYS-12.1 software, where the researcher found that the results obtained via this simulation agreed reasonably well with the experimental results and the maximum difference between the experimental conditions and the simulation was 5.8%.

Keyword: Cut-out; Kevlar-29/epoxy composite; Multi-layer