

عنوان مقاله:

An experimental investigation on energy absorption behavior of thin-walled aluminum semispherical shells with and without foam

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خلاصه مقاله:

Thin-walled structural shell specimens such as cylindrical, conical and semispherical shells are commonly used as energy absorbing elements in crashworthiness applications. The load-deformation characteristics of energy-absorbing devices are a measure of their energy absorbing capacities, and they differ from one component to the other depending upon the mode of deformation and the material used. In this paper some hemispherical thin-walled aluminum shells is made by spinning metal forming process. Then some of them filled by a very light polymeric foam to increase their energy absorption capability. The specimens were tested under compression test between two flat parallel rigid plates under quasi-static loading. Results show that aluminum when filled by polymeric foam, their energy absorption capability is increased particularly.

کلمات کلیدی:

energy absorption, thin-walled structures, aluminum semispherical shells, foam

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