

Deformation and Energy Absorption of Corrugated Tubes

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Abstract : Deformation and energy absorption studies with corrugated tubes where corrugation is perpendicular to the line of action which coincides exactly with the unstrained axis of the tubes. In the present study, several specimens with various geometric parameters are prepared and compressed quasi-statically in ANSYS Workbench. It is observed that tubes with perpendicular corrugation alters the deformation condition considerably and culminates in a substantial escalation in energy absorption scope in juxtaposed with the tubes having a circular cross-section. This study will help automotive, aerospace and various other industries to design superior components with perpendicular corrugated tubes and will reduce the experimental trials by conducting the numerical simulations.

Keywords : ANSYS Workbench, deformation and energy absorption, corrugated tubes, quasi-static compression

Conference Title : ICAMAME 2017 : International Conference on Aerospace, Mechanical, Automotive and Materials Engineering

Conference Location : Kyoto, Japan

Conference Dates : April 27-28, 2017