

# **Experimental Study of the Effect of Semi-Apical Angle on Initial Peak Load and Plastic Work for Nonmetallic Tubes**

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## **Abstract**

This article investigates the effect of semi-apical angle on the collapse load characteristics of thin truncated circular cones during axial crumpling. The PVC tubes axial crumpling resistance (the relationship between crumpling force and axial deflection) is described with mathematical models, which are derived depending on previous research and experimental present work. The mathematical models for present work gave good agreement with experimental results. The study showed that the values of initial peak load and plastic work decrease with increasing the semi-apical angle degree at constant thickness tubes and constant large diameter of end bottom of tubes and constant length.