

**VARIOUS PLUG ASSIST MATERIALS
AND THEIR EFFECT ON THE
THERMOFORMING CHARACTERISTICS
OF POLYMERIC SHEET**

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ABSTRACT

Plug assist thermoforming is an art which thermoformers have developed through many years of experience. As the industry becomes more competitive and expands into increasingly difficult products, modeling of the process holds the potential to dramatically shorten development time, increase process and materials efficiencies and lead to new market opportunities.

This report presents the results of investigating the load-deformation characteristics of a HDPE polymer sheet when formed with different plug assist materials with the aim towards developing modeling parameters. The variables investigated were plug material, plug temperature, plug speed, plug shape, plug surface roughness and polymer sheet thickness and temperature.