

# Examensarbete vid Byggnadsmekanik



## INFLUENCE OF MATERIAL STIFFNESS AND PACKAGE SHAPE ON GRIP STIFFNESS OF A BEVERAGE PACKAGE

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### Presentation

av examensarbetet är beräknad till våren 2002

### Rapport

kommer att utges som report TVSM-5115

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### Background

The grip stiffness of a beverage package is an important parameter in achieving satisfying package performance. In package design, selecting proper grip stiffness is a challenging task since it must be balanced against difficulties in converting and forming and of cost. To improve this selection process, a better understanding of how the grip stiffness is influenced by package shape and material stiffness is needed.

The final goal of the project is to be able to define how the combination of material and package shape is selected to achieve proper grip stiffness.

### Project description

The main objective in the project is to determine relationships between grip stiffness, package shape and material stiffness. The work in the project may be divided into three subtasks:

- *Experimental study of grip stiffness of packages with various shapes and materials by use of a grip robot.*
- *Experimental study of the mechanical behaviour of the material in bending for simplified material input.*
- *Numerical parametric study of grip stiffness for varying width, height and material stiffness by use of the finite element program ABAQUS.*



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