

CASE STUDY **3**

Weight Optimisation

INITIAL SITUATION

For many years, we have been producing a lid for an internationally renowned premium ice cream brand. To ensure continued success in an increasingly competitive environment, we have had to search for potential for rationalisation.

INDUSTRY

Ice cream manufacturers

STRATEGY/REASON

Weight reduction

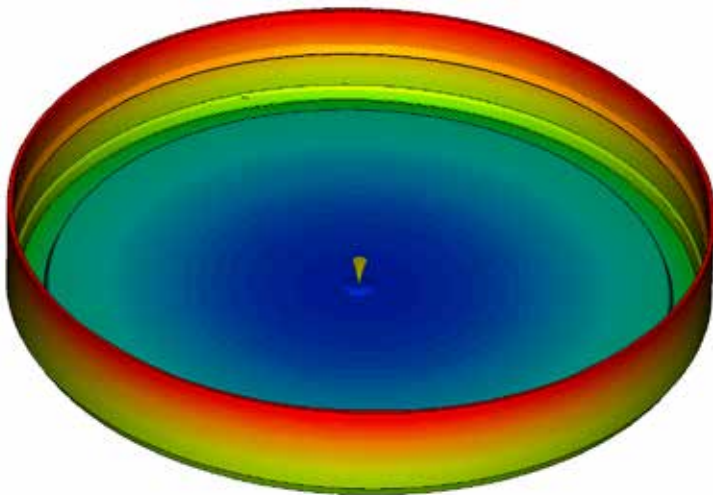


TASK SETTING

Achieve weight reduction by re-designing the lid, whilst maintaining the overall appearance. One requirement was that the new lid should be compatible with the existing filling plants without the need for mechanical changes.

REALISATION

By using our own state-of-the-art CAD (Computer Aided Design) and CAE (Computer Aided Engineering) systems, a range of lid options were designed and analysed. Through computer aided simulations the required process parameters such as filling behaviour, filling pressure levels, cooling and shrinkage behaviour, etc. were determined. The best computer options calculated resulted in the creation of a sample tool. The sampling results corresponded very precisely to the simulation results.



The thinner walls changed the mechanical properties of the lid so that the sealing process within the filling system was no longer flawless. Through extensive material tests a special material mix was obtained and, along with the material-saving design, the required mechanical properties of the lid were achieved.

After successful system tests, this design was then implemented in the series tools.

RESULT



The lid weight was reduced by 20% through the use of computer aided new design. By using a special material mix, the mechanical properties remained virtually unaltered, ensuring a smooth transition to the new lid at the filling plant without any requirement for adaptation.

CUSTOMER BENEFIT

The use of simulation tools significantly reduced development time and effort. Both our customer and the environment benefit from the significant weight reduction and production of the new lid commenced without any need for retrofitting and/or adjustments to the filling system.

RESULT

Improvements in

-  **weight reduction**
-  **development time/effort**