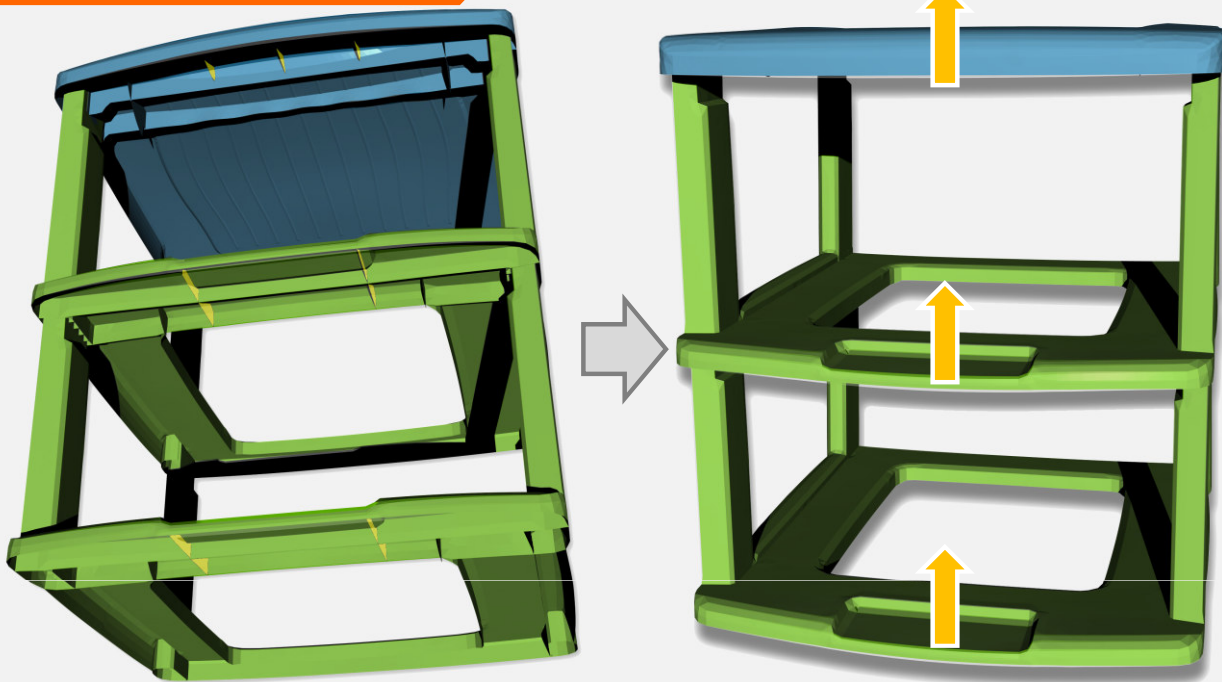


Allibert Home: dresser


The ribs (yellow) correct the downwards deformation of the frame

Small changes reap great rewards

BPO supports Allibert Home in solving production problem

Allibert Home has recently launched a new decorative range of storage boxes called POM POM. During the first production run the plastic dresser of this range showed undesirable warpage. This caused the drawers to open with great difficulty. To solve this problem BPO was called in. By applying ribs on strategic spots the engineers of BPO were able to solve the problem with only minimal adjustments to the existing mould.

"We had a problem that the front's top of the frame bended downwards. This caused the upper drawer to get stuck during opening," explains Bavo de Zutter of Allibert Home. The other drawers also experienced nuisance from a similar deformation of the other horizontal panels. Only by applying long cycle times, the deformation could be reduced somewhat. With the production scheduled to start, Allibert faced a serious and pressing problem.

First moldflow simulations showed that temperature deviations between the core and cavity side of the mould were the main cause of the warpage. As the lower surface has a higher temperature than the upper surface, the part experiences more shrinkage resulting in a downward deformation or warpage.

Naturally, the first solutions that popped up were related to a more balanced cooling, for instance by applying a mould insert with good heat conducting characteristics. Furthermore, geometric adjustments like adding ribs and locally increasing the wall thickness were considered.

Applying thin walled ribs in the front of the horizontal layers proved to be the most effective solution with respect to warpage. "Because the ribs are thin, the time to freeze is short and through that these ribs hardly deform. This mechanism prevents the bending of the front," explains Jan Eek of BPO. Considering costs and necessary production adjustments it was also a very attractive solution. With an increase of 2 gram in weight and simple mould adjustments, Allibert could start production with only a slight time delay.

"After implementing the suggested adjustments, the solution proved to be extremely effective," says De Zutter "moreover, the adjustments could be easily implemented in the existing mould." In the meantime the dresser has been launched in a range of decorative storage boxes. It's a brown coloured range decorated with graphical prints. These prints are added during the injection moulding process. Therefore the prints are scratch free and colourfast.

More information: www.alliberthome.com