lesson 05 - flatness & stiffening

Flat

Ribs

Design Considerations

Flatness & Stiffening

Since Rotationally molded products are hollow, it is difficult to ensure flatness on a product. To counteract anticipated warpage, we may add a crown to the model or reinforcing ribs to the product. Process control is imperative.

Reinforcing or stiffening ribs must be designed as a hollow element similar to corrugated sheet. Good proportions for a rib are a height of 4 times the wall thickness, and a width at least five times the wall thickness. The greater the height of the rib the greater the stiffness. A rectangular vs. rounded rib will provide better stiffening. The side walls of the ribs should have draft or be tapered to avoid the part hanging up on the rib.

Kiss-off or two-closely spaced walls that mold together also provide additional strength. The kiss-off area should be 2 times the wall thickness plus .030 as a starting point, although this can vary.

However kiss-off or (wall to wall support) may cause surface deformation, in many applications kiss-off or wall to wall support may not contact each other and still achieve the support needed.