CASE HISTORY
MoldWiz® INT-33LCA for Roto-molding LLDPE

A manufacturer of large, rotationally molded rectangular boxes, used to house underground utilities, evaluated AXEL's process aid additive, MoldWiz® INT-33LCA, and has achieved very positive release results.

The resin used in the process is a 100% recycled LLDPE with a MFI (melt flow index) of 4-6 with 2-3% cross-linker, and is black in color. The extruded resin pellets are ground to a 35 mesh. The roto-molding process uses three resin charges; LLDPE for the internal and external skins and PE with the chemical additive Azo used for the core, foam layer.

The LLDPE boxes that are produced are difficult to release because of minimal shrinkage, close tolerances and the angular geometry of the parts. Four workers were required to tend the 15 molds, applying touch up coats of mold release with every cycle. On the occasions that an error was made and inadequate release was applied, parts required removal with crowbars.

A 0.5% loading of MoldWiz INT-33LCA was incorporated into the LLDPE used in the exterior of the roto-molded box (1st charge in the roto-molding process). The AXEL additive was added to the resin pellets and this mixture was then ground to a uniform 35mesh. INT-33LCA was not used in the core layer or the interior skin layers of the part, as neither of these are in contact with the mold surface.

With the addition of the MoldWiz process aid, the need for external mold release has been virtually eliminated (only the mold flanges are treated with release). Reduced mold maintenance has cut labor requirements in half (two men rather than four now staff the line) and an additional saving has been realized from lower scrap rates resulting from clean, easy release.

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