



One Approach to Minimizing Frozen Layer Fraction

Most of our Customers use elevated melt temperatures during the injection molding process. In addition, they use chilled fluids on the mold to set the plastic quickly.

This approach can cause issues with mold filling and molded part stress. When the hot melt enters the mold, the plastic cools from the outside to the interior of the part.

This is commonly referred to as a frozen layer fraction. Using a chiller on the mold creates a larger frozen layer fraction.

This could cause substantial internal molded-in stresses, which can lead to premature part failure.

A better approach to minimize issues is to mold near the lower end of the barrel temperature profile, and heat the mold to about 100 degrees F.

You can balance both mold and melt temperatures, so there is no cycle time penalty. The more controlled cooling of the part will remove most of the molded-in part stresses.

If you any questions regarding PP compounds, part design, and processing, please contact us.

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