











PLASTIC SAMPLES TESTING: RESULTS OVERVIEW

	Product Result										
Problems	Material	HDPE	HDPE	HDPE	HDPE	PS	HDPE	HDPE	PS	PP	PS
Low Temperature		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slow Inject		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small air vent		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Loose Mold		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cold Mold		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Mold Hot		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Less Material		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Air Bubble		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Material Not Suitable		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Material Not Fully Melt		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Several samples have been produced changing different production parameters. The table above records the problems encountered both in the production phase and in the final product (see the two categories in light blue in the below legend).

The check box (if it is checked) shows that the sample had a problem. On the left side of the table, the type of problem is recorded and explained with the support of the below legend.

Problems	Definition
<i>Problems as 'production mistakes' (i.e. manufacturer inputs).</i>	
Low temperature	The temperature is set below the melting point*. * Melting Temperatures (left) vs Low temperature (right) if used lower: HDPE: 200°C (due to a mistake) PS: 235 °C / 154.5 °C PP: 170 °C
Slow injection	Less force is applied in (< 300 newtons)
Small air vent	Testing with only one air vent (current mold is having 3 air vents)
Loose mold	The screws and bolts (clamping system) are loosened by ¼ rotation from the maximal limit
Cold mold	The thermoplastic is injected before the mold reaches the melting temperature of the thermoplastic
Hot mold	The thermoplastic is injected when the mold is set above the melting temperature of the thermoplastic. This resulted in burnt marks.
Less material	Using less material than the required weight
Material is not fully melted	The material is normally injected after it stays in the heating barrel for 5 minutes. In this case, less than 5 minutes have been applied.
<i>Problems encountered in the final product (i.e. manufacturing process outputs)</i>	
Air bubble	The product shows the presence of an air bubble
Material not suitable	The material appears not suitable for manual injection molding of solid thick products.