

Detection of Extrusion Blow Molding Defects by Airflow Analysis

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Abstract : In extrusion blow molding, there is great variability in product quality due to the sensitivity of the machine settings. These variations lead to unnecessary rejects and loss of time. Yet production control is a major challenge for companies in this sector to remain competitive within their market. Current quality control methods only apply to finished products (vision control, leak test...). It has been shown that material melt temperature, blowing pressure, and ambient temperature have a significant impact on the variability of product quality. Since blowing is a key step in the process, we have studied this parameter in this paper. The objective is to determine if airflow analysis allows the identification of quality problems before the full completion of the manufacturing process. We conducted tests to determine if it was possible to identify a leakage defect and an obstructed defect, two common defects on products. The results showed that it was possible to identify a leakage defect by airflow analysis.

Keywords : extrusion blow molding, signal, sensor, defects, detection

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