polyfuze®

Case Study

Ensuring Lasting Button Durability:

A Major Appliance Brand's Partnership with Polyfuze®:
Creating a Durable, Long-Lasting Dishwasher Button System with Polymer Fusion Labeling

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Executive Summary:
Focus on a Major Appliance Brand's Labeling Challenge

In this case study, we explore how a major appliance brand, known for its innovative line of high-quality dishwasher drawers that set industry standards for durability and design, overcame a significant challenge. Renowned for producing premium appliances, the brand faced an issue with finding a label that could endure the extreme conditions of the dishwasher environment. Testing various labeling technologies was crucial to ensuring they found a solution that could withstand daily use, water exposure, and high temperatures. Partnering with Polyfuze® Graphics Corporation, the major appliance brand validated a permanent solution that met stringent durability requirements. Had they chosen an inferior labeling method, it would have likely failed, but through careful testing, they ensured that Polyfuze®'s polymer fusion labels would endure the rigors of their products' demanding conditions.

Background:
Renowned for Durability and Quality

This major appliance brand is renowned for its dedication to quality and long-lasting products. Their line of dishwasher drawers, designed to provide years of dependable service, faced a challenge with finding a label for the control button area (made of polypropylene, a very low surface energy material) that could withstand the rigors and use of the dishwasher environment. The buttons, which were pressed and rubbed multiple times a day, were also exposed to dishwasher solutions, moisture, and high temperatures, and the label needed to endure these conditions for the lifespan of the dishwasher. The brand's testing process was conducted to validate a solution that could meet these durability needs, as anything less would result in performance failure.

Problem Statement: Challenges with Polypropylene Button Labeling

The issue the major appliance brand faced was to find a label that could both bond effectively to the polypropylene surface—a low surface energy material—and, more importantly, endure the rigors of the dishwasher environment. The labels needed to withstand daily use, including being pressed and rubbed multiple times a day, while exposed to harsh conditions like water, detergents, moisture, and high temperatures for the entire lifespan of the dishwasher. Their testing aimed to validate a solution that would ensure long-term performance, as the risk of going with an inferior solution would have led to premature failures and damage to their reputation for durability.

Solution: Polymer Fusion Labeling as the Viable Option

Polyfuze® polymer fusion labeling technology emerged as the perfect solution to meet the major appliance brand's needs. Unlike traditional labels, Polyfuze® fuses directly with the polypropylene surface, becoming part of the product itself—permanent, durable, and able to withstand extreme conditions over the long term. This innovation provided a solution that the brand could confidently validate through rigorous testing. Polyfuze® not only solved the immediate problem of label degradation but also represented a value-driven change that prevented ongoing issues with label performance.

Implementation: Seamless Integration of Polymer Fusion Labels

Polyfuze®'s advanced labels were integrated into the manufacturing process for the major appliance brand's units, ensuring that the control button labels matched the durability of the appliance itself. The success of this labeling solution has since scaled across other product lines, extending the reach of Polyfuze® labeling technology. The brand's commitment to testing ensured they implemented a solution validated for long-term durability and performance.

Results:
Major Appliance Brand Implements Polymer Fusion Labeling

The implementation of Polyfuze® labeling technology for the major appliance brand resulted in exceptional performance. During assessments, several labeling and graphic methods were tested, but only Polyfuze® successfully passed the required tests. The labels maintained their durability throughout rigorous daily use, proving that Polyfuze®'s technology was the right choice. An engineer noted: “Observations confirm the viability of Polyfuze®'s own test report documentation. Polyfuze® is indeed an advanced performer for long-term polypropylene graphics longevity."

These results led to the decision to expand Polyfuze® labeling solutions to other product lines, with over 1 million polymer fusion labels now provided across various brands within the portfolio.

Analysis:
Validation Through Rigorous Testing

Polyfuze®'s polymer fusion labeling technology proved superior to traditional methods, exceeding industry standards for durability in challenging conditions. The ability to withstand extreme environments without compromising label integrity has made Polyfuze® the go-to solution for not only this brand but for other high-performing products across their portfolio. The brand’s thorough testing ensured they avoided the potential pitfalls of adopting an inferior solution, securing a label that met their durability needs.

Conclusion:
Long-Term Performance and Environmental Responsibility

The successful introduction of Polyfuze® polymer fusion labeling technology for the major appliance brand’s units represents a breakthrough in both durability and environmental sustainability. These fully recyclable labels are seamlessly integrated with the polypropylene components of the dishwasher drawers, ensuring that the entire unit can be recycled in an eco-friendly process. By conducting comprehensive testing to validate the solution, the brand ensured that Polyfuze® labels would perform for the product’s entire lifecycle. Their process of finding a solution that worked, rather than settling for one that didn’t, highlights the importance of investing in durable and long-term labeling solutions.