



CASE STUDY

How a Multi-Plant Window OEM Maintained Consistent Color Performance Across Complex Lineal Profiles

Customer

Regional Window & Door OEM with Multiple U.S. Manufacturing Facilities

End Use

PVC Window Lineal Capstock (Exterior Profiles)

Customer Challenge

A multi-plant window and door OEM needed to maintain consistent exterior color performance across a growing portfolio of window and patio door lineals. As production expanded across multiple facilities, profiles, and extrusion lines, maintaining tight, repeatable color uniformity across plants became increasingly complex.

The application placed tight constraints on material performance. The capstock needed to meet a locked color specification while delivering consistent visual appearance across varying geometries, operators, and processing conditions. Even small variations in color, gloss, or surface appearance created additional inspection requirements and risked inconsistencies across finished products. In addition to color, gloss consistency and resistance to fade under exterior exposure were critical to maintaining a uniform appearance across finished window systems.

At the same time, the customer required a supplier capable of responding to adjustment requests, supporting trials across sites, and collaborating closely with manufacturing teams to align material performance with existing processes. They were looking for more than a color match — they needed predictability, scalability, and technical partnership across their operations.

Americhem Solution

Americhem partnered with the customer to deliver a custom ePVC capstock solution designed to support consistent exterior color performance across multiple manufacturing locations. Rather than offering a one-size-fits-all formulation, the approach focused on aligning material performance with the customer's existing processes while enabling scalability across sites and profiles.

Key elements of the solution included:

- **Site-Aligned Custom Formulation**
Americhem developed tailored ePVC capstock formulations to support consistent color appearance across different extrusion lines, equipment configurations, and operators, while maintaining alignment with a locked color specification.
- **Lot-to-Lot Color Control**
Leveraging centralized color development and quality control processes, Americhem delivered reliable lot-to-lot color consistency to support predictable production and reduce variation across plants and SKUs.
- **Hands-On Technical Support**
Americhem's technical services team supported material evaluations during trials and transitions across multiple profiles and provided on-site guidance to align performance expectations.
- **Validated Weathering Performance**
Capstock formulations were evaluated using accelerated and outdoor weathering methods, including QUV and Xenon Arc testing, to ensure readiness for FGIA/AAMA requirements and long-term exterior exposure.
- **Scalable Platform Development**
Following successful implementation, Americhem supported expansion across additional facilities, establishing a unified capstock platform to simplify quality control, coordination, and future growth.



Value Proposition

In this multi-plant window lineal program, the core challenge was managing variability without sacrificing consistency. The customer needed to hold a tight exterior color specification across different profiles, extrusion lines, and manufacturing environments. Americhem's value was its ability to engineer ePVC capstock formulations that could account for these differences while still delivering predictable, repeatable color performance in production.

This controlled approach to customization allowed the customer to qualify material behavior with confidence and move toward standardization across facilities. By addressing variability at the material system level rather than through reactive adjustments, Americhem reduced program risk and enabled a scalable path forward for complex window and door applications.

Customer Success Story

The customer successfully transitioned the ePVC capstock formulation across multiple manufacturing facilities, supporting a broad range of window and patio door lineals. The material met exterior appearance expectations while maintaining consistent color performance across profiles and production environments.

The final formulation was developed and evaluated to support FGIA/AAMA weathering performance targets for exterior applications, enabling the customer to standardize the capstock platform across SKUs and facilities.

Fast Facts

End Application

Window & Door Lineal
Capstock (Exterior Profiles)

Customer Type

Regional Window & Door
Lineal Capstock (Exterior
Profiles)

Materials used

Custom Americhem ePVC Capstock Compound

Key Requirements

Exterior color stability, Gloss consistency
Weathering durability, Lot-to-lot consistency

Color Standards

Custom color-matched to meet brand specifications

Sites Served

Multi-plant U.S. manufacturing operation

Regulatory Context

FGIA/AAMA weathering requirements

Outcome

Successfully implemented across facilities using a unified capstock platform



With a reliable material system in place, teams were able to move forward with confidence, knowing exterior performance would remain consistent in both production and field use.

