

Case Study

Protecting windows and doors with PPG powder



Hotel Drover | Fort Worth, TX

Customer

Graham Architectural Products
York, Pennsylvania

Coating Technology

Powder

Segment

General Industrial
(Windows and Doors)

PPG Coating

PPG CORAFロン® Platinum Powder

For one high-end window maker, the benefits of a transfer-efficient PPG powder is clear

Headquartered in York, Pennsylvania, Graham Architectural Products (GAP) manufactures a wide-range of high-end windows, window systems and doors.

The company's architectural-grade fenestration products are used around the world in commercial applications like schools, hospitals and monumental buildings.

"We are designed to manufacture and finish our products to architectural project specifications," said Judy Penn, manager of the production control department and a 30-year veteran of the company.

The majority of the time, those specifications must meet or exceed Fenestration and Glazing Industrial Alliance and American Architectural Manufacturers Association (FGIA/AAMA) 2605 requirements, the industry's highest standard for coating performance.

For many years, the company protected their products exclusively with liquid coatings, but in the early 2000s began to use powder coatings due to a number of factors, including costs associated with wastewater treatment and removal.

At that time they used powder supplied by SPRAYLAT®, which was acquired by PPG in 2012. PPG has remained GAP's exclusive powder provider in the years since.

General benefits of powder coatings

With numerous advantages, it's not surprising that manufacturers like GAP are making the move to powder. In fact, it's the fastest growing coating technology in the world today.

One of the most notable aspects of powder coating is that it generates less waste due to a high material utilization rate.

Unlike liquid paint that is always a spray-to-waste process, powder overspray can be reclaimed





and recycled, depending on the capabilities of the coater, the number of colors utilized, the absence of contaminants and financial considerations related to the quality of the powder.

Because powder coating is an electrostatic process that applies charged particles to a grounded part, more paint ends up on the substrate, even on hard-to-reach areas – a benefit that was of particular interest to GAP.

Powder coatings often deliver better protection in a single coat in terms of coverage, corrosion resistance and weathering than two-coat liquid systems, which reduces the overall amount of product needed.

Powder provides excellent hardness, corrosion and chemical resistance, and broader design options than other technologies, including unique finishes such as hammertones, granites and micro-textures.

Powder is also considered to be a more sustainable coating platform. In addition to the ability to reclaim and recycle, powder coatings are generally formulated without solvents that release VOCs. They also only require

compressed air for cleanup, so no hazardous waste is produced during the entire finishing process.

In fact, according to the Powder Coating Institute, with proper application equipment, powder formulation, efficient recovery methods and one-coat application, powder can achieve a 95–98% utilization efficiency rate. This is compared to the average of 60% material utilization with a comparable liquid system.

Better first-pass build rates and why it matters

Powder has excellent adherence to metal substrates, but newer generations of high transfer efficiency (HTE) powder coatings take that coverage to the next level by improving first-pass application build rates – the percentage of powder that gets deposited on the part.

These specialized coatings are engineered to deposit powder consistently and uniformly across complex parts and are formulated to electrostatically wrap and penetrate deep recesses or hard-to-reach surfaces, achieving first-pass

efficiency rates of up to 85%.

As a direct-to-metal process that eliminates the need to finish edges with mechanical rounding or blasting equipment, these advanced powder formulas can deliver significant savings in materials, labor, utilities and time.

In fact, compared to standard powder coatings, these HTE technologies can reduce powder consumption by 20–25% because less powder is needed to coat the part.

PPG launches revolutionary new HTE architectural powder

In the spring of 2021, PPG launched patent-pending *Coraflon* Platinum fluoroethylene vinyl ether (FEVE) powder coatings, a breakthrough innovation for architectural extrusions and sheet aluminum.

Meeting FGIA/AAMA 2605 specifications, the highest standards for weathering and corrosion resistance in the industry, *Coraflon* Platinum powder delivers a fast film build and produces very little waste, even in difficult-to-reach cavities.

- 20% higher transfer efficiency than standard FEVE powders
- Wide range of colors and textures, including new anodized finishes
- Broader gloss range than standard FEVE powders (5-85 vs. 25-70)
- Specifically formulated without major substances of concern

For these reasons, GAP considered a switch from their standard PPG CORAFロン® powder coating to the newer, high-transfer formulation.

GAP trials PPG *Coraflon* Platinum

In the spring of 2021, GAP conducted trials to evaluate PPG *Coraflon* Platinum powder on their line as well as finish performance and coverage.

The company applied the powder to difficult-to-coat, geometric-shaped

window extrusions using the same automatic powder coating line, line speed, air pressures and voltages as their usual, standard powder process.

What they found was that the high-transfer powder deeply penetrated into the recessed areas without heavy edge buildup. Even after lowering the powder pressure by 20%, a much better first-pass transfer efficiency was achieved, without sacrificing the required film thickness.

By transitioning to a high-transfer formulation, much less powder is going through the reclaim system and overall powder consumption has dropped by 20%.

“*Coraflon* Platinum met our requirements for a one-coat, no-primer process and a 20-year warranty that meets 2605 standards for film integrity, chalk resistance and color change,” said Judy. “When it came to transfer efficiency and pricing, no other competitor product could touch it.”

GAP takes advantage of expanded finish options

While single-coat coverage, fast film build and even protection across every surface of the part were appealing, GAP is increasingly embracing the aesthetics that *Coraflon* Platinum powders offer with great success.

Because of the expanded 5-85 gloss range, PPG *Coraflon* Platinum powder can create special effects finishes never before possible with a powder, including a wide range of eye-catching mineral tones and textures that



mimic stone, cement, terracotta and anodized metal.

“*Coraflon* Platinum gave us the opportunity to move into bonded powders without adding fluidizing beds and new equipment,” explained Judy. “This has widened our finishing capabilities in dramatic ways.”

In fact, GAP recently worked on a large project using a clear anodized finish, a look that is increasingly of interest among architects today. Unlike anodized metals, powders that mimic it offer lasting durability and typically better warranties.

GAP found that PPG *Coraflon* Platinum opened the door to cost and application efficiencies, expanded aesthetics and lasting durability and performance. And that’s a great look for them and their customers.

To learn more about PPG *Coraflon* Platinum powder, visit ppgindustrialcoatings.com or call 1-800-258-6398.