UNIVERSAL
CHEMICALS & COATINGS
OVER 5 DECADES OF EXPERTISE

UNICHEM

Case Study - Custom Coil-Applied Epoxy Coatings for Decorative Metal Components

OVERVIEW

A leading manufacturer of decorative metal components faced significant challenges sourcing custom coil-applied coatings for their specialized applications. The coil coater the manufacturer had been using ceased operations, and they needed to source custom coatings with an alternative coil coater, where they faced large minimum order requirements.

They needed a cost-effective domestic source for coil-coated, decorative metallic coatings that matched existing powder-coated corner hardware and locking mechanisms. The metal would be used as decorative but functional edge trim pieces for the manufacturing of trunks and cases. The manufacturer required a reliable source to deliver customized epoxy-based coatings in smaller, cost-effective batches that ensured both exceptional decorative finishes and durable performance.

CHALLENGES

Limited Supply and High Minimum Volumes

The manufacturer's previous coating provider ceased operations, leaving a gap in the availability of specialized, coil-applied epoxy coatings. Alternative suppliers significantly increased minimum order volumes, imposing financial and logistical constraints. They required a solution that would provide smaller batches with consistent quality.

Custom Color Matching and Decorative Requirements

The client required a precise color match—a specialty metallic gold finish. This decorative coating also had to withstand rigorous roll-forming and mechanical processes without damage.

Demanding Performance Standards

The coating had to match the color and appearance of existing metal hardware finishes and be applied to ETP (Electrolytic Tin Plate) metal, with excellent adhesion, formability, abrasion, chipping, peeling, impact, and humidity resistance. In the final manufacturing steps, the coated metal is roll-formed into 90° angles, then cut to length, stacked, and placed in storage. These steps test all physical attributes of the coating (adhesion, flexibility, abrasion, and flexibility). The metal is then moved to a manufacturing floor, where the final forming is completed, then the various hardware components are fastened using rivets and screws—again, testing the durability of the coating for impact, adhesion, and abrasion.

UNICHEM

Case Study - Custom Coil-Applied Epoxy Coatings for Decorative Metal Components

SOLUTION - UNICHEM's Coil-Applied Epoxy Specialty Coating

UNICHEM developed a custom coil-applied epoxy-based coating specifically formulated for this application with no minimum requirement. This advanced epoxy coating solution featured:

Precise Color Matching - UNICHEM's skilled resin and polymer engineers developed a custom epoxy coating that precisely matched the client's desired metallic gold appearance. Utilizing specialized pigments and effect additives, the coating achieved both decorative elegance and consistent visual quality across production batches.

Advanced Epoxy-Based Formulation - The custom epoxy coating was specifically engineered for coil-applied applications, providing:

- Exceptional adhesion to ETP (Electrolytic Tin Plate) and can be customized for adhesion to other properly cleaned and treated metal substrates.
- Superior resistance to abrasion, scratches, and mechanical stress during roll-forming, riveting, and punching.
- High flexibility, enabling the metal substrates to undergo intensive fabrication processes without compromising coating integrity.

Strategic Manufacturing Partnership - UNICHEM partnered with a reputable coil-coating provider geographically close to both the manufacturer and UNICHEM's production facility. This proximity streamlined logistics, significantly reduced lead times, and enabled efficient, flexible production customized to the manufacturer's specific volume and timing requirements.

RESULTS

UNICHEM's custom coil-applied epoxy coatings delivered significant improvements in logistical efficiency, performance consistency, and product quality. By partnering strategically with a local coil coating facility, the manufacturer streamlined production schedules, reduced lead times, and optimized inventory management.

The custom epoxy formulations met precise color-matching requirements and consistently maintained adhesion and abrasion resistance throughout roll-forming, bending, and handling processes, eliminating previous quality issues.

UNIVERSAL
CHEMICALS & COATINGS

OVER 5 DECADES OF EXPERTISE

UNICHEM

Case Study - Custom Coil-Applied Epoxy Coatings for Decorative Metal Components

BENEFITS

The manufacturer realized multiple benefits by adopting UNICHEM's specialized epoxy coil coating solutions:

- **Cost-Efficient Production:** Smaller, customized batches reduced overall inventory costs and minimized production expenses.
- **Enhanced Product Reliability:** Superior abrasion and mar resistance ensured durable performance, even after handling and roll-forming processes.
- **Expanded Market Opportunities:** The availability of dependable, aesthetically appealing epoxy coatings enabled the manufacturer to maintain production lines, improve customer satisfaction, and explore new market collaborations.

UNICHEM offers a diverse selection of decorative metal finishes available in various product formulations: uniPON®(Epoxy based), Flexlain® (Polyester Based), and uniCRON (Acrylic based). Examples include glitter effects, faux metal finishes, etc., which can be modified for gloss level, transparency, texturing, etc. Customized versions may be made available.

UNICHEM's coil-applied epoxy coatings provide manufacturers with solutions to common logistical and performance challenges, delivering consistently reliable results across diverse applications. These coatings enhance product durability, reduce operational costs, and foster growth opportunities. Contact UNICHEM today to discuss your specific coil-applied epoxy coating requirements.

UNICHEM

Our dedicated team consists of some of the leading industrial coating scientists and engineers in the industry, with deep technical knowledge of market and technology innovation. We offer a wide variety of products developed with cutting edge technology, as well as custom designed paints, coatings, and laminating adhesives to suit your needs.

- **A Tradition of Excellence**
- **Insights & Innovation**
- **Leading Edge Technology**
- **A deep knowledge of Application Methodologies**
- **A focus on Value Creation**

Contact Us