

Case Study

3A Composites, PPG team up for award-winning project



Project Name

Dayton Children's Hospital
Dayton, Ohio, U.S.

Segment

Coil

Coil Coater

3A Composites USA

Fabricators

Royalton Architectural Fabrication
and Celina Glass Company

PPG Coatings

PPG CORAFLON® MXL VARI-Cool in Dayton Blue (BN3L122B)
PPG DURANAR® MXL Dayton Blue Basecoat
PPG DURANAR® SUNSTORM® in Sterling Silver (BN7A147B)



In the summer of 2024, Metal Construction News honored 3A Composites USA and their ALUCOBOND® aluminum composite panels with the Metal Composite Material (MCM) award for their work on Dayton Children's Hospital in southwestern Ohio. The project was celebrated for its innovative use of metal in the exterior design, featuring polychromatic color-shifting panels. This dynamic effect was made possible by advanced pigment and coating technologies developed by PPG. This project is one of many successful collaborations between the two companies.

In fact, PPG color experts worked with 3A to develop the ALUCOBOND Spectra color collection, a proprietary catalog of iridescent hues inspired by nature and natural alloys that create shimmer, dimension and polychromatic color. The collection was introduced in 2010 and today is widely used by architects and designers looking to add luster, movement and striking visual effects to commercial exteriors.

The MCM award marked the culmination of a nine-year building project that began in 2014, including a complete system rebranding and the completion of a new \$78 million, five-story outpatient Specialty Care Center adjacent to the hospital, finished in early 2023.

ALUCOBOND panels specified for building exteriors

For Dayton Children's Hospital properties, Champlin Architecture was hired to incorporate ALUCOBOND® PLUS 4mm aluminum composite panels into the design. These panels are favored by architects for their weather resistance, formability, ease of installation and flame-retardant core. They are manufactured at 3A's plant in Benton, Kentucky, and finished in-house on 3A's coil coating lines.

As part of the rebranding efforts, the goal was to make all Dayton facilities more welcoming, vibrant and modern, conveying a sense of hope and healing through color. To achieve this,





3A collaborated with David C. Story, color styling manager for PPG's Industrial Coatings business, to develop a series of custom hues for consideration.

"We took this assignment quite seriously and developed a series of new polychromatic colors that we felt matched the aesthetics they wanted for their new brand," said Story. "After internal discussions and input from pediatric patients, a multi-dimensional blue-green shade emerged as the leading contender."

To confirm their choice, leadership took an unconventional approach by ordering a full-sized mock-up of an *ALUCOBOND PLUS* panel with the polychromatic coating. They evaluated it from multiple viewpoints while driving along Route 4. The eye-catching color, reminiscent of a mood ring, was officially selected and named Dayton Blue, a custom *ALUCOBOND PLUS* finish.

What are color-shifting pigments?

Nearly 20 years ago, PPG developed *DURANAR® VARI-COOL®* coatings, the

first color-shifting coil coating that sparkles and changes color in direct sunlight, thanks to pearlescent mica and aluminum flakes in the formulation.

Initially offered as a two-coat system, it consisted of a primer followed by a 70% polyvinylidene fluoride (PVDF) topcoat, providing durability, weatherability, chemical resistance, colorfastness and gloss retention – with a color-changing twist.

As *VARI-COOL* coatings grew in popularity, architects increasingly requested custom colors for their high-profile projects. In response, PPG went to work developing the more economical three-layer *Coraflon MXL* system. This system includes a primer, a PVDF basecoat and a fluoroethylene vinyl ether (FEVE) clearcoat infused with special effect pigments adapted from PPG's best-in-class automotive coatings.

"One advantage is that it doesn't require as many color-changing micas to create dimensional, color-shifting effects, especially when contrasting colors are used in the

“This project holds a special place in my heart because children who were patients at the hospital selected the final color.”

David C. Story
PPG Color Styling Manager

basecoat and clearcoat," explained Story. "This system allows us to create effects ranging from a subtle, three-dimensional sparkle to a dramatic color shift throughout the day."

Another benefit of the three-step system is its expanded gloss range, from 8 to over 80 gloss units. The system meets FGIA/AAMA 2605 performance specifications for exterior use and can be applied to various surfaces, including:

- Architectural facades
- Curtain walls/sunshades
- Window surrounds ceilings
- Slab edge covers
- Spandrels
- Soffits/canopies
- Column covers



PPG's high-performance metal coatings lineup

PPG has engineered architectural metal coatings with high-performance fluoropolymer resins in both fluoroethylene vinyl ether (FEVE) and 70% polyvinylidene fluoride (PVDF) formulations.

Meeting rigorous FGIA/AAMA 2605 performance specifications, they are widely specified around the world for monumental and high-profile commercial applications due to their notable performance properties, including:

- Long-term durability with outstanding corrosion, chemical attack and UV resistance
- Excellent resistance to chalk and color fade, preserving building aesthetics
- Minimal maintenance: can be cleaned with mild detergents and solvents
- Minor scratches can be repaired in the field
- Good flexibility to help with rigorous post-forming operations
- Multitude of design options for architects and designers
- Exceptional color stability and gloss retention

Starting in 1967 with the first application with the revolutionary PPG DURANAR® coatings and continuing to this day with the development of infrared-reflective pigments that cool with less energy and color-shifting pigments, PPG continues to push the limits of what's possible in architectural metal coatings.

To learn more about PPG coatings for architectural metal, visit ppgmetalcoatings.com or call 1-800-258-6398.

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