PPG STEELGUARD® 651

Optimal, environmental fire protection, efficient application and flexible paint delivery

Case study

The Customer
LG Chem electric vehicle battery plant in Poland.
M+M is the applicator.

The Challenge
To provide a cellulosic passive fire protection (PFP) coating solution for a huge factory with unique challenges:
- Environmental: “green” coating system required
- Climatic: application in winter and spring
- Logistics: variable deliveries and quantities of paint needed

The Solution
PPG STEELGUARD 651 cellulosic waterborne PFP coating

The Benefits
Our waterborne PFP product delivered an environmental solution with 120-minute fire protection

The Result
Close consultation and partnership achieved the most effective, environmental fire protection solution. Collaboration with the applicator ensured efficient paint application in challenging climatic conditions. The project progressed smoothly with guaranteed, organized paint delivery to meet the flexible schedule as required.

The Customer

LG Chem is headquartered in Seoul, South Korea and is one of the world’s leading chemical groups with a business portfolio that includes petrochemicals, energy solutions, advanced materials, and life sciences.

The battery plant was established to produce lithium-ion batteries for electric vehicles. It is the first and, currently, the only fully integrated plant in Europe to produce all battery components, ranging from electrodes to cells, modules and final packs.

The Challenge

A project of this size attracted a large number of bids. As PPG has a wide range of coating systems, we were able to propose a solvent-borne and also a waterborne PFP solution. In fact, the owner of the plant had previously specified a competitor’s solvent-borne product.

However, the overall aim of the LG Chem plant was to provide a “green” solution for the automotive industry and using a solvent-borne system in such quantities may have caused an Environment, Health and Safety (EHS) issue for the facility.

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The Solution

After extensive consultation with all parties involved in the project, we recommended the PPG STEELGUARD 651 cellulosic passive fire protection (PFP) product.

The right environmental product for the customer

We always work with a customer on what is the right solution for their specific project. When considering the construction process as a whole, EHS and protecting people are always paramount considerations for any project. As LG Chem considered environmental impact and looked for a “green” option, our team convinced the customer to switch to our waterborne offer despite the problem of difficult application conditions on-site during winter. In fact, it would have been unimaginable to apply coatings on a project of this scope and size on-site in Poland during winter just a few years ago.

Coating efficiency through close collaboration

Working closely with applicators is integral in ensuring that we give customers an optimal solution for their requirements. M+M, the application company, had won the bid for the LG Chem project. Thanks to our long-term relationship, we helped M+M by providing the essential technical and application advice of how to correctly prepare the painting site during winter for waterborne product application.

The Benefits

The PPG STEELGUARD 651 product is our first waterborne PFP coating that can provide up to 120 minutes of protection from cellulosic fire. It offers competitive thicknesses across the full spectrum of fire ratings from 15 up to 120 minutes.

PPG STEELGUARD 651 – Key Features and Benefits

- Low VOC contributes to a greener environment
- Up to 120 minutes’ fire protection
- Covers a wide range of temperatures from 350°C (660°F) to 750°C (1380°F)
- High-volume solids
- Outperforms other market solutions on hollow sections
- Easy to apply on-site – one component product
- Dry to touch within 2 hours at 20°C (68°F)
- Can be applied up to 700 µm (28 mils) DFT in a single coat
- Fully tested for all conventional profiles
- Meets the latest standards (incl. EN 13381-8:2013 and BS476 Parts 20/21)
- Meets ISO 12944-2 C1* and C2 internal corrosivity categories and EAD 350402-00-1106 Z_2*, Z_1 and Y environmental conditions
- CE-marked product
- Access to our global engineering support network

* no topcoat required

The Result

Our intensive consultation and partnership with all parties enabled us to propose and deliver the most effective fire-retardant solution for this huge facility. The PPG STEELGUARD 651 PFP product provides 120 minutes’ fire protection while meeting the customer’s environmental criteria. In addition, close cooperation with the applicator generated efficient paint application in a range of challenging climatic conditions.

Our scale, capability and responsiveness meant that we delivered 150k liters over 5 months in various quantities, often at short notice, on schedule and with no delays.

From the outset, our proactive approach benefited both the customer and the applicator and ensured that the LG Chem electric vehicle battery plant project progressed as smoothly as possible. As a result, the application went perfectly with the support of our sales and technical teams.

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