



High quality powder coating for sun protection products

HDLV technology: more flexibility and process control

Giménez Ganga, Spain

Performance by design

 **Nordson**

In-house powder coating line with maximum process control and highest product quality

For more than 60 years the specialist for outdoor shading has been supplying the national and international market from Spain. As a woodworking shop, the family business initially processed wood, but since the 1980s aluminum has been growing. For years, small and complex components were given to an external contract coating company for powder coating. Now a state-of-the-art powder coating system with dense phase technology ensures flexibility, economy, and the highest quality.



The Company

During the hours of daylight, the Spanish know how to protect themselves from too much heat and UV radiation with many outdoor shading structures. It is therefore perhaps no coincidence that one of Europe's most important manufacturers of sun protection systems is located on the east coast of Spain. Giménez Ganga distributes around 60,000 m² of its products in more than 70 countries every year.

"Our customers appreciate the functionality of our products and their impeccable aesthetics, because after all they are a part of their living and working environment," says Juan Pedro Giménez Cascales, Operations Manager of Giménez Ganga, explaining the high standards his production has to meet. He also mentions the great importance to an energy-efficient processes that has low impact on the environment.

The Challenge

Until 2018, the powder coating has been sent to an external job coater. "We used to pack and unpack and then transport to and from the factory – that was very time-consuming, cost-intensive and not very flexible," says Juan Giménez. "So we thought about what a complete coating line of our own would look like." During his years of previous work as the export manager, he had seen many incredibly designed production facilities, which proved to be a great advantage during the planning phase.

"From a technical point of view, the size and shape of the parts had to be considered first," recalls Jose Luis Higuera, Area Sales Manager Industrial Coating Systems at Nordson. "Then the variety of materials; besides aluminum, iron and zinc alloys are also processed. Lastly, all solutions had to be designed to meet the customer's high demands for quality, process reliability and environmental friendliness."

The Solution

After careful examination of the market, the most suitable suppliers were finally commissioned. In January 2019, a wide range of specialists jointly installed the new complete powder coating system. The powder coating system was designed to accommodate the parts, which are up to 7 m long in length. The parts had to first undergo a chemical pre-treatment. One tank is available for each the multi-metallic alkali and the alkaline treatments of aluminum, which comprises of seven stages.

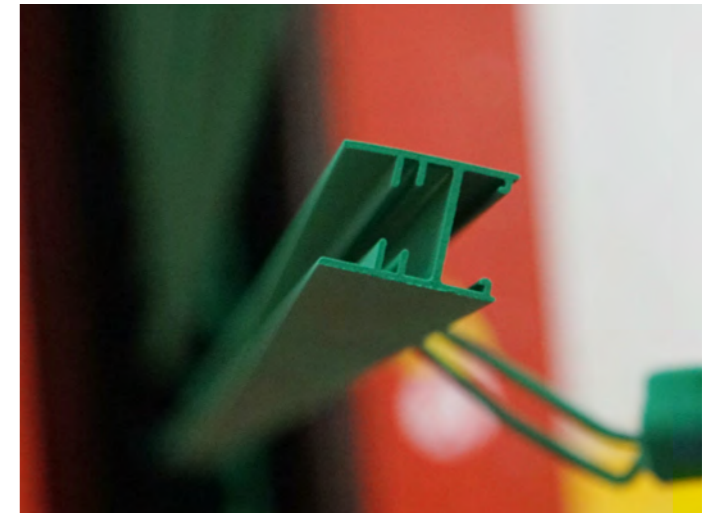
The prepared parts are then fed through a state-of-the-art Nordson powder coating system consisting of a ColorMax³ coating booth, 12 Encore[®] HD automatic powder guns, complemented by the Spectrum[®] HD powder feed center with PowderPilot[™] HD advanced control system, Nordson twin cyclone and after filter.

The Encore HD spraying system uses HDLV (High-Density powder, Low-Velocity air) dense-phase technology to pump more powder through the spray gun with a minimum amount of air, and maximum process control. This results in superior efficiency, unmatched coverage and reliable self-clean color change, boosting productivity and reducing operating costs. The extremely robust and durable Encore HD pumps have zero wear parts affecting the powder output. The soft powder cloud, created by the Encore HD pumps, delivers unmatched uniformity and efficient coverage even at high output.



The ColorMax[®] fast color change booth, the Encore HD powder guns and the Spectrum HD powder feed center makes production at Giménez Ganga more flexible and even makes the coating of small batches more economical. The booth is designed for color changes within minutes. The intelligent airflow management, regular compressed air blasts and a central duct extraction system ensure that the overspray is conveyed for cleaning and recycling even during operation.

Particularly in powder coating of aluminum profiles, the high powder penetration ensures excellent coating quality. The high application transfer efficiency is the key to our economical powder coating.



Although the modern powder coating system is complex, operation via Nordson's PowderPilot HD requires little training and can be set up for multiple languages. The touch screen shows the operator the relevant status information of the individual plant modules at any time and, if necessary, requests step-by-step instructions for operation. The entire powder coating system is operated by only one person. When it comes to the color change it only takes a few minutes to clean the full system. For part identification, a communication between the Nordson system and the ERP system occurs to load the programmed settings for the family products. The parts are coated in groups of three. Color changes are indicated by a light that receives its information from the ERP system. The color that will be used next is displayed on the ERP monitor. There can be up to 8 color changes per shift. This is a significant contribution to a flexible and economical production.

The Result: investment has paid off

"This coating line is definitely one of the best coating systems for aluminum profiles in Europe," José Luis Higuera is certain. "To achieve this, those responsible at Giménez Ganga have worked closely together from the very beginning. The company started in single-shift operation at the beginning of 2019, and one year later a second shift was added enabling round-the-clock powder coating



Giménez Ganga develops solutions for enclosure, solar protection and decoration to guarantee well-being in all types of constructions and spaces.

operations. The speed of the line is currently 3.5 m/min, but still has capacity to cope with 5m. The 12 automatic and two manual guns are designed for further growth and even higher speeds.

Film thickness is applied between 80 and 100 μ , where high uniformity of the coatings and the exact repeatability are astonishing – a true result of the HDLV technology.

“For normal applications, one coating pass is sufficient,” explains Juan Pedro Giménez. “But we also offer products that are exposed to the rough sea air in Marine Sea Quality. We coat them twice so that we end up with a particularly corrosion-resistant film thickness of 160 μ .”



Color changes are indicated by a light

To make the already very efficient system even more efficient, a powder weight scale has been integrated. The collected weight data is analyzed, and the exact powder consumption is documented to optimize it for an even better efficiency. This also plays an important role for the materials management.

For Juan Pedro Gimenez, the expectations he had for in-house coating have been more than fulfilled. “Now we have the production process completely in our own hands. This makes it easier to meet the high quality standards of our products, which our customers always expect from us,” explains Juan Pedro Giménez in conclusion and continues: “Particularly in the case of aluminum profiles, the high powder penetration depth ensures excellent coating quality and the very high transfer efficiency which is the key to our economical powder coating. With the Nordson HDLV technology we are highly resource-efficient and very cost-effective.”

Nordson HDLV Dense Phase Technology

Nordson’s patented HDLV® pumps, called Encore HD Pump, use dense-phase technology with high-density powder, low-velocity air to pump more powder to the spray gun with a minimum of air, and maximum process control.

This results in superior efficiency, unmatched coverage, and reliable self-clean color change, boosting productivity and reducing operating costs.

With more than 15 years of field-proven experience, Nordson remains at the cutting edge of dense phase pump technology in the powder coating industry.

- Powder output stability and process control, for precise applied coating thickness and significant powder savings
- Highest application efficiency with soft spray pattern
- Superior coverage of recessed areas through optimised spray velocities
- Unmatched wear life of the internal pump components significantly reduces maintenance downtime for maximum productivity
- Contamination free color change of the entire spray system due to an automated purge clean system

For more information please visit: www.nordson.com/hdlv



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