



## FOCUS ON TECHNOLOGY

# In Portugal's Bike Valley, a Winning Partnership with a Powder Coating Manufacturer Raises the Bar on Finishing Quality

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Development of polyester powder coatings and colour matching: these are the growth tools that Portuguese company InCycles, specialising in the assembly and sale of electric and traditional bicycles, has been implementing together with one of its paint suppliers, ST Powder Coatings. Its aim is to change the concept of urban mobility as we know it and raise the market's appreciation of products coated with powders instead of liquid paints.

In February, the European Parliament decisively implemented its Cycling Strategy, instructing the Commission to double the number of kilometres of bike paths in Europe by 2030<sup>1</sup>. According to the main industry associations, this marks an important turning point in the

development of a more conscious approach to this rapidly developing sector at the European level. As stated in the press release of the European Cyclists' Federation (ECF)<sup>2</sup>, 'The call marks a recognition of cycling as a fully-fledged mode of transport and key industrial asset

<sup>1</sup> [https://www.europarl.europa.eu/doceo/document/B-9-2023-0102\\_EN.html](https://www.europarl.europa.eu/doceo/document/B-9-2023-0102_EN.html)

<sup>2</sup> <https://ecf.com/civicism/mailling/view?id=5606&reset=1>

to meet long-term climate and clean manufacturing objectives.” The statement ends with a wish: “Cycling stakeholders also hope that the proposed designation of 2024 as the European Year of Cycling [...] encourages national governments to take additional actions such as reducing VAT rates, multiplying initiatives to promote cycling and replicating the “Portugal Bike Valley” reindustrialisation success story in other regions, with targeted support from European funding programmes.”

The success case cited refers to the Águeda area, south of Porto, where the bicycle (particularly e-bike) manufacturing industry has become so flourishing that Portugal has become the largest producer of bicycles in the EU. This nation of 10 million people, just over 2% of the European Union’s population, produces a quarter of the continent’s bicycles. Such a development was the result of a growing passion for cycling in Europe particularly after the pandemic period and it has been completely changing the concept of urban mobility.

To provide an idea of how much this sector has developed, right in the heart of Portugal’s Bike Valley, we visited a company that has seen its turnover multiply 22-fold in the space of a few years – from 3 million Euros in 2018 to 65 million last year – and the number of its employees grow from 15 to 300. InCycles Bike Group (Águeda) specialises in the assembly, powder coating, and distribution of e-bikes and traditional bicycles both for major international brands and under its own brand, Eleven.

Today, coating operations play an increasingly important role in its production process, whose focus on paint sustainability is in line with

the vision of clean manufacturing as advocated by the European Parliament’s motion. “About three years ago,” explains Pedro Conceição, the General Manager of InCycles, “we started a winning partnership with the Italian powder coatings manufacturer ST Powder Coatings, which in 2018 opened a branch in Maia, in the industrial district of Porto, not far from our headquarters. From the outset, powders have been our main choice of finish for two reasons. Firstly, because they are characterised by greater resistance in harsh environmental conditions, which is a key element especially for our Northern European partners. Secondly, because they are environmentally friendly paints producing no VOC emissions and fully recyclable: an increasing number of customers consider this aspect a discriminating factor when choosing their supplier.”

**The future is electric even for bicycles**

“We are riding the wave of the exponential growth of two-wheel mobility occurring all over Europe,” confirms Conceição. “We have been focussing on electric products and, to date, we can say that it has been the winning choice. This is evidenced, for example, by an important project aimed at making e-bikes available for hire in all major European cities.” To cope with the production peak, this Portuguese company recently invested in a new plant merging 1 coating system, 4 assembly lines (of which 3 are devoted to e-bikes and 1 to traditional bicycles,) and 6 lines for the production of wheels.

Paint shop manager Alberto Cardoso explains the main steps in InCycles Bike Group’s production process: “We receive our components already



**One of the three bicycle assembly lines and the powder coating plant.**



**From left to right: Some shot blasted parts; The primer application booth; Top coat application.**



shot blasted; we only perform manual sanding if necessary. The parts reach directly our coating department, where they are loaded onto the conveyor to be taken to the first station for manual powder application. They then move to the curing oven before the required water-based decals are applied. This is followed by a drying phase, the removal of decal masks, and the application of the final top coat, which can be glossy or matte. The coating cycle ends with the final curing phase in the oven. Afterwards, the parts are ready to be transported to the assembly department, where they are placed on one of the 4 designated lines and subsequently packed and stored for final shipment."

### Investment in coating

"The internationalisation of our production," notes Conceição, "called for the increase in the number of our assembly lines, but also for a growing investment in the powder coating line we had installed three years ago. The continuing demand for high-quality surface coatings is so strong that we would have already installed a further plant, if the war in Ukraine and the resulting negative global financial outlook had not stopped our project, hopefully only temporarily. The reason why it is important for us to focus on coating at this time is that the quality of the paint applied on the components imported from Asia does not meet the minimum requirements. The European Union is also taking action on this aspect with anti-dumping measures, stemming largely from the realisation that we are excessively dependent on the Asian market in the bicycle sector, too. Currently, 90% of the components we assemble in our factory are

sourced from China." This trend, however, is changing, as evidenced by the already mentioned motion of the European Parliament, and more and more manufactured goods are now being produced in Europe in the cycling sector as well. "At present, therefore, the strategy that we consider successful for establishing ourselves in this complex market is to guarantee the best possible coating performance with two main objectives: finishing quality and production flexibility."

### A perfect partnership for growth

"Our first contact with ST Powder Coatings was decisive in the choice of our supplier," states Cardoso. "Although we also apply liquid paints for special projects, we already knew that powders would be the perfect solution, especially to meet the need of Northern European customers, who are more demanding in terms of finishing quality and resistance in harsher climatic conditions than those in Southern Europe. Until our encounter with this Italian manufacturer, we had been using epoxy paint. Thanks to the tests suggested by its team, however, we realised that polyesters were better suited to give our finishes greater outdoor resistance and durability, especially in conditions of proximity to the sea, low temperatures, and exposure to snow or ice.

"Polyester powder coatings," says José Carlos Manta, the general manager of ST Powder Coatings Portugal, "are available in both industrial and architectural quality. Polyester products are especially ideal for coating metals intended for outdoor use precisely because they ensure excellent resistance to chemical and weathering agents



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and excellent colour retention. Specifically, InCycles uses industrial polyester powders as standard and Qualicoat polyester powders for special requirements. Our laboratory formulates and develops powders according to every customer's needs: for InCycles, we tried to develop the entire colour range they required to find the perfect colour match with the liquid-coated components from the Asian market. Actually, it is not always easy to find the perfect powder hue to match the distinctive, shiny, and sometimes "loud" metallic effect obtained with Chinese liquid paints. Colour matching with the coatings already applied on the components imported by InCycles is one of the most demanding challenges for our team.

"Yet, ST Powder Coatings has managed to find the right balance," notes Conceição. "Despite these issues, it has been able to provide us with colour matching solutions that meet all our customers' requirements. The primers and powder top coats it supplies us with, even those with metallic and special effects, guarantee lowkey finishes that are definitely less showy than the liquid paints with the same effects or colours. This is why we are trying to convince our customers to choose powder coating whenever the hue developed by ST Powder Coatings is very close to that obtainable with a liquid product. The feedback from the market is currently very positive. In addition to such extreme care in searching for the most suitable solutions for our needs, we greatly appreciate other aspects, such as the speed and efficiency of ST Powder Coatings' service and the reliability of its solutions. I guess this is partly due to its experience in

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the field of bicycle manufacturing and coating, in which Italy and Veneto in particular, the home region of ST Powder Coatings, are more than well-established benchmarks.”

### **The bicycle becomes the protagonist of a sustainable mindset change**

“We firmly believe that the daily use and acceptance of the bike as a means of transport,” concludes Conceição, “is an opportunity to implement non-polluting and sustainable mobility solutions that are an excellent alternative to traditional ones, with the ultimate aim

of improving the quality of life and human relations. The goal is to consolidate the change of mentality already initiated, which has become necessary in light of the current world economic situation, in which the restrictions imposed on low-cost products from the Asian market can be a boost to the growth of the European manufacturing sector. InCycles is ready to face this breakthrough with the support of skilled and flexible partners such as ST Powder Coatings, which has contributed decisively to the growth of our company, since powder coating is becoming an increasingly decisive strategic asset in the choices of our customers in terms of both finishing quality and sustainability.”



**From top left clockwise: The curing oven; A finished component; A detail of a powder coated component; The InCycles showroom where e-bikes and traditional bicycles are on display.**