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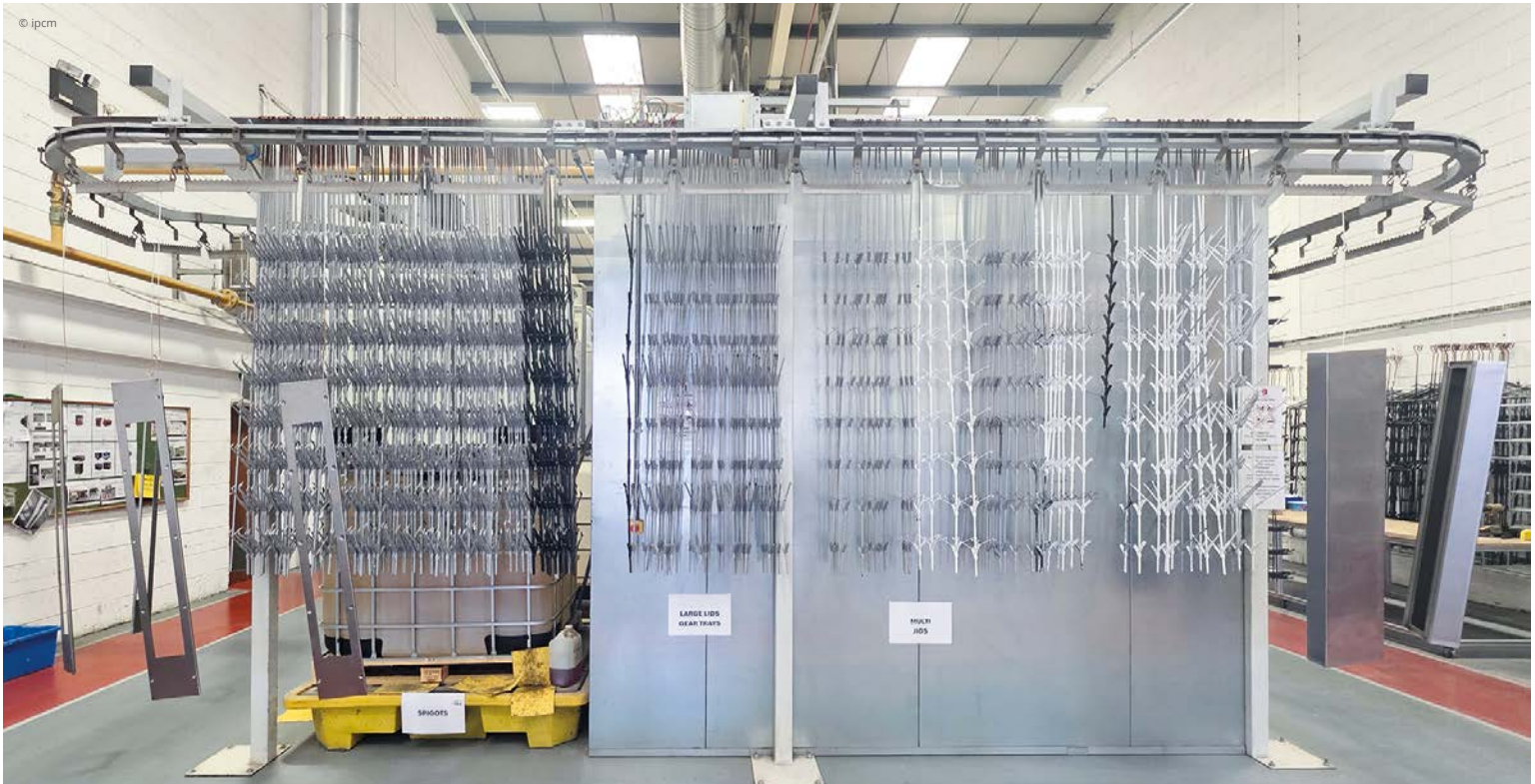
FOCUS ON TECHNOLOGY

ASD Lighting: innovation and sustainability in the UK lighting market

Martina Stucchi, **ipcm**[®]

The British company has installed a powder coating plant for the treatment of components used in the production of indoor and outdoor lighting systems. The solution incorporates the innovative TORAN 3[®] pre-treatment technology developed by Chemtec, designed to ensure effective and environmentally friendly preparation of metal surfaces.

The lighting industry in the United Kingdom represents today a highly competitive and continuously evolving market, driven by technological innovation, sustainability, and a growing focus on product quality and performance. One of the pioneering companies in this field is ASD Lighting, a British company with over forty years of experience, which has evolved from a manufacturer of automatic solutions for domestic lighting into an established player in the office, healthcare, rail, and street lighting sectors.



The powder coating plant installed in 2019 was designed and built by Metavate and TD Finishing.

Based in Rotherham, South Yorkshire, the company has progressively expanded its production capabilities by investing in in-house processes and advanced surface finishing technologies. Among these, particular importance is given to the development, in recent years, of a fully customized powder coating line designed to optimize quality, flexibility, and production sustainability, thanks to the adoption of the innovative TORAN 3® pre-treatment system, a single-stage cold process developed by Chemtec, an Italian company based in Corbetta (MI) and supplied in the UK exclusively by Metavate Ltd. This choice confirms ASD Lighting's commitment to industrial innovation and operational efficiency.

A bright story

ASD Lighting's history began in November 1982 from an idea by Tony Stewart, who at the time ran an electrical contracting company with 25 electricians and two shops. One day, he became aware of PIRs (Passive Infrared Sensors), devices used in the burglar alarm industry and equipped with LEDs that lit up whenever someone passed by.

This system became a source of inspiration for Stewart, prompting him to develop a technological innovation: an incandescent lamp capable of switching on automatically through an infrared sensor. It was no longer an application intended for the security sector, but rather a utility designed for everyday use: a welcome light, an automatic light.

From this intuition, ASD Lighting was born and gradually developed into a company that, over more than 40 years of activity, has undergone numerous changes, expanding its production and introducing new and diversified product ranges. Today, the company operates in markets ranging from office and commercial lighting to more recent sectors such as rail and street lighting.

"In recent years, we have also been expanding into sectors such as healthcare and education, which are now particularly strategic," says Ian Skirrow, Head of Operations at ASD Lighting. "There is currently growing attention towards product quality: customers are beginning to realize that the cheapest solution is not always the most suitable one. This allows us to strengthen our position in the market thanks to our wide range of products and consistently high quality."

The production process

The first step in the lighting creation process is design. "We have an in-house product design team that identifies gaps in the market, areas that are not yet covered by our range, and evaluates whether a new product is needed. If so, they proceed through all stages of research and development. They design the product and select the appropriate materials," continues Ian Skirrow.



From left to right: The components undergo Chemtec's innovative TORAN 3[®] pre-treatment through a spray application process; The TORAN 3[®] pre-treatment is an anhydrous single-stage cold process; Components are coated with industrial polyester powders inside a Gema booth equipped with automatic spray guns.

"We rely on external suppliers for certain processes such as metal casting and extrusion, while many other processes are carried out in-house. These include injection moulding, for example for polycarbonate components. We also manufacture our own LED boards, operate our SMT line, produce our own gaskets, and even make our own cardboard packaging. In addition, we coat our own wires. As a result, a large proportion of the components used in the production of a lighting product are made internally. The majority of our sales are in the UK, but we are also quite active in the street lighting sector in Ireland, and we supply products to the Middle East as well. In addition, we have a major customer in the Netherlands, so these are currently our key markets. We would definitely like to expand our export business further, although the lighting industry can be quite challenging internationally". The Rotherham facility also handles the assembly and dispatch of the finished products, with a current lead time of 10 days.

In 2015, during the massive global transition from fluorescent to LED lighting, ASD Lighting entered the street lighting sector. At the same time,

the company identified a growing need to bring the powder coating process in-house, with the aim of reducing lead times, facilitating colour changes, and making the process more flexible and capable of delivering higher quality. It was this need that led to the partnership with Metavate Ltd, with whom ASD Lighting began the research and design process for the powder coating line in 2017.

A tailor-made paint shop

The collaboration with Metavate, Chemtec's sole UK distributor, played a key role in the development of the new plant. "We worked with ASD Lighting for around 18 months, carrying out tests and preliminary trials. We also involved TD Finishing, which designed the plant together with us," says Rachel Stevens, Director of Metavate.

"I believe ASD Lighting chose Metavate not only for the economic and environmental advantages offered by our solution, but also because of the limited available space. A traditional multi-stage phosphodegreasing system would not have been feasible under these conditions.

Thanks to Chemtec's TORAN 3® technology, the company was able to achieve the required level of protection within a reduced footprint and with a fully customized system. We demonstrated that it would be much more cost-effective for them to bring the function in-house rather than continue outsourcing it at that time, so we worked closely with them on cost analysis and related financial evaluations. Payback on the initial capital investment was determined to be around 18 to 24 months." The plant was installed in February, while production started in mid-April 2019. The powder coating line extends over a length of 93.5 metres and is equipped with an automatic conveyor operating at a speed of one metre per minute. The process is divided into several stages: pre-treatment using TORAN 3® technology, including a solution recovery and extraction section, a drying oven, and a powder coating booth.

Components are coated with industrial polyester powders inside a Gema booth equipped with automatic spray guns; certain specific parts, however, require manual application.

The entire production cycle takes approximately one hour and thirty minutes. The number of coated parts varies depending on the product type: for some street lighting pole models, productivity can reach approximately 280 pieces per hour. In addition, colour changeovers can be completed in just 15 minutes.

"We test the product every hour, or every couple of hours, for adhesion after curing. We have strict quality control procedures in place on the powder coating line," says Steve Donson, Plant manager.

Innovative pre-treatment technology

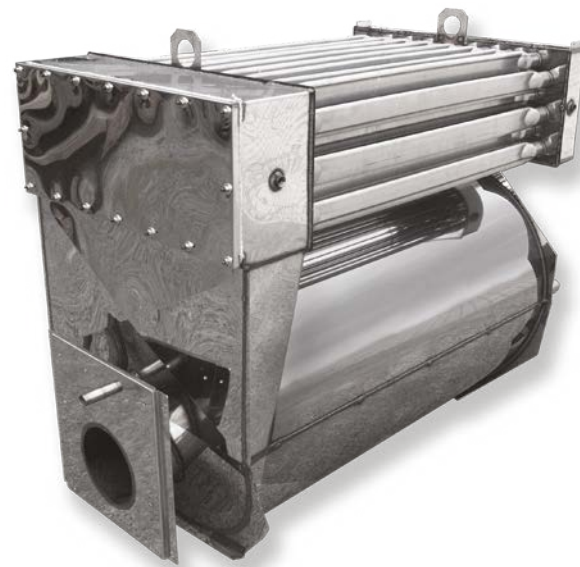
One of the key distinguishing features of this coating line is the single-stage pre-treatment process, carried out through spray application.

"In my previous experience, I worked with a 10-stage pre-treatment system. When this single-stage solution was first proposed to me, I was sceptical, but I had to change my mind because it works effectively," continues Steve Donson. "We achieve over 2,000 hours in a salt spray test chamber. There is no heat involved and very little maintenance is required; we mainly just top up the system and occasionally replace filters. The chemical solution is sent for testing every three months, and any adjustments we make are very rare, as the system performs consistently well."

The technology developed by Chemtec does not require rinsing or pre-degreasing; therefore, no sludge or wastewater is generated for disposal. The anhydrous process uses high-boiling organic fluids for optimal degreasing and immediate protection against oxidation. "Every three months, the quality of the bath can be monitored because, for Chemtec and Metavate, it is essential to maintain strict control over process quality," says Beatrice Turri, Sales & Marketing Manager at Chemtec.

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Gema's powder centre.



From the left: Steve Donson, Plant Manager at ASD Lighting, Rachel Stevens, Director of Metavate, and Beatrice Turri, Sales & Marketing Manager at Chemtec.



The lighting components are manufactured and powder-coated by ASD Lighting.

"In our laboratory, we use highly innovative instruments that allow us to carry out precise checks and provide immediate feedback, so that any potential issues can be quickly identified and addressed. TORAN 3® is a truly innovative product because it eliminates the use of water and energy and, most importantly, produces no sludge. This means the customer does not need to manage or dispose of sludge, resulting in significant savings in both energy consumption and maintenance costs. The system is also very simple to operate, as it does not require titration or pH control, making the chemistry far simpler compared to traditional processes. In addition, it is safer for operators working in the plant. Overall, it is a sustainable, safe, and user-friendly solution."

Conclusion

ASD Lighting's investment in a fully customised powder coating plant demonstrates how technological innovation and process optimisation can support growth in an increasingly demanding lighting market. By bringing key production stages in-house and adopting advanced solutions such as Chemtec's TORAN 3® pre-treatment technology, the

company has improved flexibility, reduced lead times, and strengthened quality control across its manufacturing operations. This project reflects ASD Lighting's broader strategy of combining product diversification, operational efficiency, and sustainable manufacturing practices, reinforcing its position as a competitive player in the UK lighting industry. ▶



Scan the QR code to see the powder coating line of ASD Lighting