

A choice that stands the test of time: anodizing and painting integrated into a vertical line at ÇUHADAROĞLU

Operating in the highly competitive aluminium processing and surface finishing market, the Istanbul-based company ÇUHADAROĞLU has progressively strengthened its industrial capabilities through continuous investments in advanced surface treatment technologies. Nearly two decades ago, ÇUHADAROĞLU invested in a unique anodizing and powder coating line supplied by CISART (whose know-how has now been acquired by CIE SpA), with the objective of improving production efficiency, ensuring consistent surface quality, and optimizing environmental performance, with a strong focus on wastewater treatment and regulatory compliance.

Pioneers are not afraid. Not of taking risks, making mistakes, failing, or being copied. They simply believe so strongly in the value and legitimacy of their own ideas that they are willing to pursue them at any cost, even at the risk of failure. Yet, when they succeed, pioneers reap the benefits of their choices for decades. And when they set the bar exceptionally high, it may take a very long time before anyone else can reach it.

Twenty years ago, in the aluminium finishing industry, increasing environmental regulatory pressure and the need to reduce energy consumption were already reshaping the design criteria for surface treatment plants. While only a few years earlier parameters such as productivity, aesthetic quality, and outdoor durability had been the primary factors in selecting anodizing and coating technologies, companies were beginning to embrace additional aspects such as resource efficiency, carbon footprint reduction, recovery and recycling



systems, and sustainable wastewater management. Today, the integration of different processes within hybrid plants represents one of the most advanced technological developments in surface treatment, not only for aluminium. This approach makes it possible to increase production flexibility, improve operational efficiency, reduce the overall environmental impact of the process, and optimize the space required for manufacturing activities. A cutting-edge choice today; almost science fiction twenty years ago. And yet, there was one company that, as early as 2008 and well ahead of its time, decided to bet on the operational feasibility of a vertical hybrid plant capable of combining anodizing and powder coating for aluminium profiles. Time and market success have proven that this forward-looking decision was the right one, not only in terms of operational performance and final surface quality, but also for its contribution to reducing carbon emissions and improving overall sustainability.

That company is ÇUHADAROĞLU, a Turkish industrial organization with a vertically integrated structure covering the entire aluminium value chain, from billet casting to finished products, including complete architectural façade systems. Listed on Borsa Istanbul (BIST) and supported by a portfolio of internationally significant projects, the company has incorporated globally recognized quality standards and certifications into its production philosophy. In 2008, in collaboration with CISART – an Italian brand now part of CIE SpA, which designs, manufactures, and supplies systems building on the continuity, proven technology, and expertise developed through nearly 50 years of activity and anodizing plants installed worldwide by CISART - ÇUHADAROĞLU installed the first – and still today the only – vertical hybrid line for anodizing and powder coating aluminium profiles.

Seventy years of innovation across the integrated aluminium value chain

With a corporate history spanning more than seventy years, ÇUHADAROĞLU has established itself as one of Turkey’s most recognized and trusted names in the aluminium industry. In the field of aluminium surface treatment, ÇUHADAROĞLU became the first company in Turkey to obtain both Qualicoat and Qualanod certifications. Based in Istanbul, the company has developed a diversified production portfolio serving demanding applications in which coating quality, process reliability, and environmental compliance are critical factors. “Our company’s journey began under the leadership of our founder, Ahmet ÇUHADAROĞLU, who was trained as an architect,” explains Metin YILMAZ, member of the board at the company. “In the early years, this architectural background naturally guided the company toward façade systems as its primary focus.



From left to right:

Details of the profiles exiting the sealing tank.

Panoramic view of the integrated vertical anodizing and powder coating line designed by CISART for ÇUHADAROĞLU.

The line can process aluminium profiles up to 8 metres in length.

Over time, however, the scope of our operations expanded significantly. Today, we are active across a wide range of industrial sectors, including automotive, defence, aerospace, lighting, cooling systems, electronics, and transportation.

“One of the key strengths of our group companies lies in our deep-rooted expertise in the aluminium industry, combined with a strong scientific and technical foundation. This combination enables us to successfully manage complex projects and develop solutions tailored to the specific needs of end users. As a result, we have established ourselves as pioneers in several areas within our domestic market. Rather than positioning ourselves solely as a supplier of products or services, we aim to be a reliable and capable partner in every collaboration.

“As aluminium continues to gain importance across industries due to its lightweight structure, durability, and virtually infinite recyclability, we remain committed to further expanding our sectoral reach. In parallel with this growth, we continuously invest in strengthening our aluminium production capabilities and advancing our surface treatment technologies, ensuring higher quality standards and stronger operational performance.”

ÇUHADAROĞLU operates the only facility in Europe where anodizing and powder coating processes are integrated within the same hybrid surface treatment plant. The plant was designed by CISART, now a brand of CIE SpA, a single-source supplier of technologies and chemical products for aluminium finishing that continues its technological legacy and plant engineering expertise.

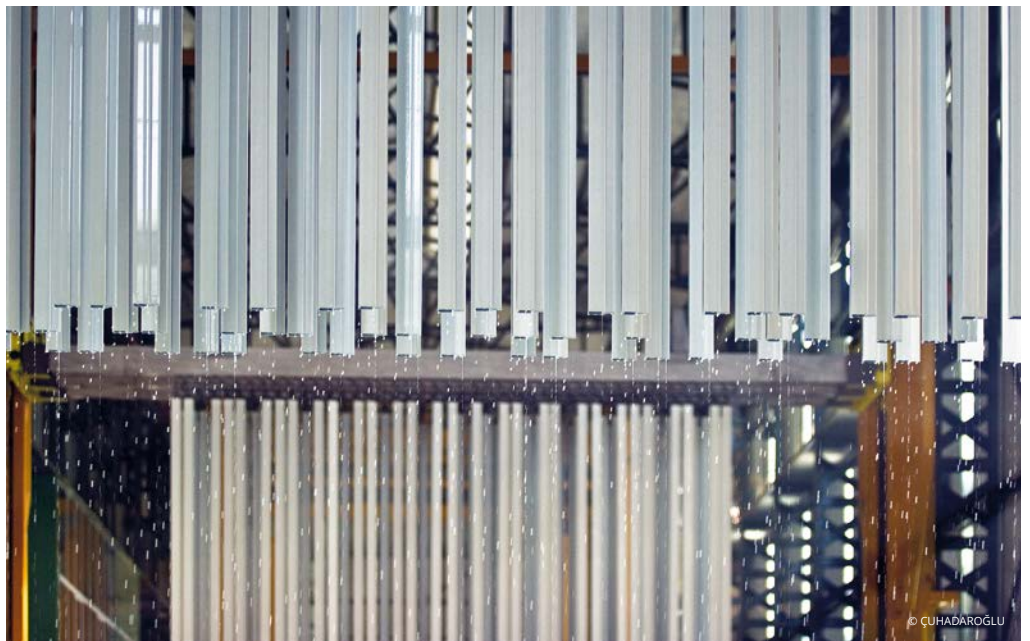
The integration of these technologies reflects a strategic approach to technology selection focused on process control, operational flexibility, and long-term sustainability.

Technical configuration and key features of the anodizing line

The surface treatment system is based on a vertical processing configuration capable of handling aluminium profiles up to approximately eight metres in length. Profiles are loaded and unloaded at the same stations, while most pre-treatment operations, including degreasing and etching, are carried out in shared tanks. The system was designed with extensive automation at every operational stage, ensuring efficient and environmentally responsible production. This high level of automation provides significant advantages in terms of sustainability, process consistency, and the implementation of customized surface technologies. The line also incorporates proprietary solutions that differ from conventional practices, particularly in the areas of racking systems, electro-colouring processes, and heating and cooling mechanisms. These innovations deliver measurable savings in labour, energy, water consumption, and processing time, while maintaining superior surface quality.

Benefits from an operational, quality, and process perspective

“In terms of line efficiency, throughput, and process stability, the vertical production configuration, combined with proprietary energy and process



Most pre-treatment operations, including degreasing and chemical etching, are carried out in shared tanks.

Right photo: The vertical production line designed by CISART reduces chemical drag-out between the various process tanks, resulting in a significant reduction in water, energy, and chemical consumption.



technologies, offers significant advantages over conventional horizontal anodizing lines. One of the key operational benefits is the ability to process both anodized and powder-coated profiles within the same loading and unloading areas, using common chemical pre-treatment baths. This configuration ensures efficient space utilization and an optimized plant layout,” explains Claudio Cittadini, Technical Sales Manager of the Anodizing Division at CIE SpA.

The flexibility of the line allows a certain degree of capacity exchange between anodizing and powder coating, enabling the processing of a wide variety of aluminium products, ranging from extrusions and sheets to small aluminium accessories. In addition, the facility demonstrates advanced digitalization capabilities compared to comparable installations, providing enhanced traceability, process monitoring, and quality assurance.

Compared with standard anodising horizontal systems, the distinctive operational model of ÇUHADAROĞLU's vertical anodizing facility delivers several measurable quality improvements:

- ◆ More vivid and metallic surface appearance
- ◆ Uniform coating thickness distribution
- ◆ Precise electrolytic colouring capability
- ◆ Homogeneous pore formation
- ◆ Reduced contact marks
- ◆ High coating thickness values compliant with international standards
- ◆ Low mass loss test values
- ◆ Extended salt spray resistance performance (up to 2,000 hours)
- ◆ Capability to achieve anodic coating thicknesses up to 30 µm.

“These high-quality results stem not only from the advanced technologies installed, but also from rigorous quality control procedures and extensive expertise in surface treatment applications,” adds Yilmaz. “Together, these factors ensure superior corrosion resistance, long-lasting surface durability, and outstanding aesthetic performance.”

Environmental performance

“The vertical production line we engineered for ÇUHADAROĞLU's inherently minimizes chemical drag-out between process baths, resulting in substantial reductions in water consumption, energy demand, and chemical usage. In addition, extended bath life and reduced bath renewal frequency further enhance overall resource efficiency,” explains Claudio Cittadini.

“The integration of cascade rinsing, intermittent spray rinsing, and other advanced recovery technologies significantly reduces water consumption. Collectively, these measures have led to a substantial reduction in wastewater generation, lower treatment costs, reduced environmental impact, and shorter overall process cycle times, ultimately enhancing operational efficiency.”

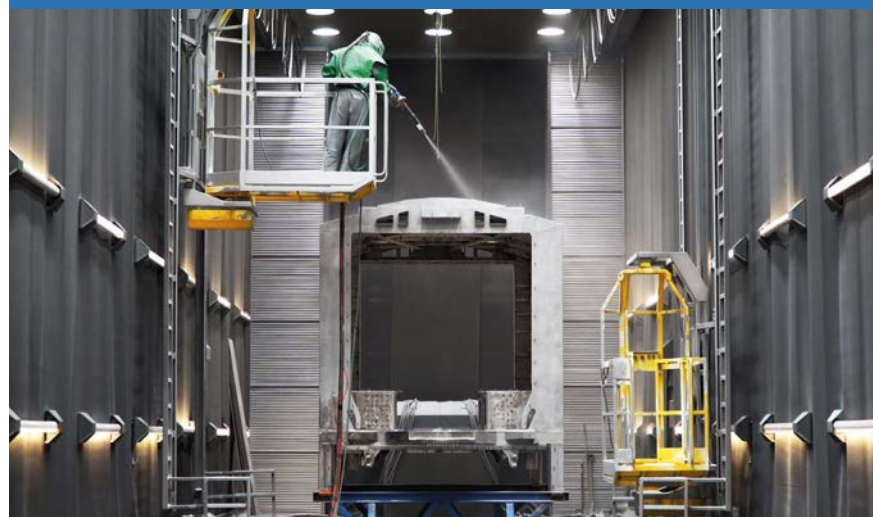


Surface Treatment Machines for the Rail Industry

• Washing • Blasting • Thermal Spraying • Painting

Complete surface treatment solutions tailored to the unique needs of the rail industry - delivered with full process automation, turnkey installations, and VOC abatement systems.

From concept to commissioning - SciTeex, your partner in advanced surface treatment for rail industry.



International references:

ALSTOM, AXTONE, BOMBARDIER, CFL, GMEINDER LOKOMOTIVEN, GREENBRIER, LUCCHINI, SBB, SCHWIHAG, SIEMENS, SNCF, STADLER, TRANSPORT FOR LONDON, VTG...

ABOUT US: VISIT US:



22-25 / 09 / 2026
Berlin, Germany
Hall 6.2
Stand No. 365

Partner
Co-exhibitor
VGS VOGEL + SCHEMMANN

www.sciteex.com

...surfaces are not superficial®

“Beyond system design, our sustainability-focused production approach and ongoing commitment to continuous improvement play a fundamental role in achieving these environmental benefits. Looking back, it is clear that the line we invested in already incorporated many features that are now recognized as Best Available Techniques (BAT),” adds Metin Yilmaz. “With more than seventy years of industrial heritage, we fully recognize the critical importance of wastewater treatment systems in sustainable manufacturing. We are fully aware that environmental regulations will become increasingly stringent in the coming years. Accordingly, our production departments consistently implement resource optimization strategies aimed at reducing the consumption of water, chemicals, energy, and raw materials, while further improving operational efficiency and sustainability.

In terms of regulatory requirements, Turkey, as a candidate country for EU accession, aligns closely with European environmental regulations, creating a highly demanding framework for industry. At ÇUHADAROĞLU, we began addressing environmental and sustainability challenges nearly two decades ago, driven by the need to remain both competitive and sustainable in the European market. This has required continuous efforts to reduce resource consumption, particularly in water, energy, and chemicals.”

A two-decades long collaboration

“At the time of our investment in surface treatment technologies, we engaged with several experienced engineering companies from around the world. However, our objective – to establish a vertically integrated hybrid model combining anodizing, coloured anodizing, and powder coating processes – had not yet been implemented anywhere. This level of innovation led many companies to approach the project cautiously,” Yilmaz continues.

“CISART distinguished itself through its openness to innovation, its original engineering perspective, and its flexible, solution-oriented

approach, despite the absence of reference installations for such a system. These qualities proved decisive in our selection process. Since the construction phase, our collaboration with CISART – today part of CIE SpA – has evolved into a partnership spanning nearly two decades, characterized by strong technical cooperation and mutual trust. It is undeniable that ÇUHADAROĞLU’s strong technical expertise and long-standing experience in aluminium surface treatment also played a decisive role in defining the project requirements and assessing the feasibility of such an innovative system”.

The future: Further enhancement of operational excellence, environmental performance, and product competitiveness

ÇUHADAROĞLU operates both as a system designer and as an integrated manufacturer.

The company transfers its extensive expertise in aluminium to industrial clients while incorporating advanced surface treatment quality into the performance of its architectural and industrial solutions.

In an industry characterized by intensifying competition and increasingly demanding quality standards, the company’s strategic priorities include delivering tailored solutions to stakeholders, maintaining high technical performance in both design and manufacturing, driving sectoral innovation and creative differentiation, expanding research and development activities, and last but not least commissioning new aluminium production lines in Kırklareli / Lüleburgaz with capabilities aligned with future market and generational demands” concludes Metin Yilmaz. ◀



The system installed at ÇUHADAROĞLU remains the only plant in the EMEA region where anodizing and powder coating processes are integrated within the same vertical hybrid surface treatment line for aluminium profiles.