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The Importance of Automatic Shot Blasting and Anti-Corrosion Treatments in the Production of Silos for the Cement Industry: Euromecc's Experience

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Euromecc, an Italian company that has been designing and manufacturing machines and plants for the concrete and cement industry for over fifty years, has equipped itself with a new automatic shot blasting system for surface preparation. The new machine's automation now enables it to quickly handle large parts and maintain consistent quality levels.



Since 1969, Euromecc (Misterbianco, Catania, Italy) has been designing and manufacturing large-scale plants for the construction sector, such as silos for storing cement and powdery materials, always adapting their design to its customers' specific requirements. It deals with all types of steel treatment and processing operations, from hacksaw cutting to pantograph cutting, up to machining, carpentry, welding (including with robots), assembly, and electrical wiring. Export manager Daniele Sciuto summarises all these activities in a short sentence: "We usually say that Euromecc is where iron comes in and machines go out: we start with raw materials and we deliver finished products." With a fully vertically integrated production cycle, the company also handles its pre-treatment and anti-corrosion coating phases in-house. In order to automate one of the most important steps in its coating preparation phase, Euromecc has recently installed a new shot blasting machine supplied by OMSG (which is celebrating its 60th anniversary this year), capable of pre-treating even the largest-sized components.



Euromecc's headquarters in Sicily (Italy) and, above, two of the storage terminals built by Euromecc.

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The evolution of Euromecc

Euromecc was established at the end of the 1960s based on the idea of Salvatore Attanasio, who founded OMC (the company's original name) to design and produce concrete mixers with an auxiliary engine and a power take-off. Three years later, it designed and subsequently produced its first concrete batching plant. In 1989, the firm changed its name to Euromecc and its management was entrusted to Salvatore's sons, Daniele and Fabrizio, who decided to expand the range of products offered and, at the same time, specialise in the design and construction of concrete batching and prefabrication systems. In 2004, the company developed its first system for use abroad: a dry plant with four compact storage sections and low transport requirements. Three years later, mass production of two lines of space-saving systems followed, specially designed and engineered for the foreign market. More recently, in 2015, Euromecc was taken over by Alfio Daniele Attanasio, who strengthened and renewed the company's range which today includes concrete production and prefabrication plants, as well as bulk storage and handling plants, port terminals, inertisation plants, and concrete recycling systems.

Euromecc nowadays

Currently, Euromecc consists of three main branches: the long-standing one serving the construction sector (e.g. production of concrete batching plants), the second devoted to the construction-related bulk materials industry (handling, transport, and storage of materials with a grain size of up to 50 mm, cement, gypsum, and ashes), and the third operating in the field of ecology and building material recycling. The firm's headquarters has an area of 220,000 m², of which about 20,000 m² are covered, and employs almost 200 highly specialised people, including engineers, technicians, and programmers.

The purchase of the new shot blasting machine was part of Euromecc's plans to strengthen its production by seeking constant innovation in both its products and processes. Its factory is equipped with systems for both machining and medium-heavy metalworking operations. Its high production capacity and large storage areas enable it to offer different types of customised solutions. In particular, for the manufacture of concrete batching and cement storage and handling equipment for cement plants operating in different environmental conditions, Euromecc needs to identify the right anti-corrosion coating



The shot blasting system designed and installed by OMSG.

system for the specific needs of each customer and, consequently, to pre-treat its parts' surfaces perfectly.

"Surface treatment," notes Sciuto, "has the functional purpose of guaranteeing the high durability of our products within a corrosion class ranging from C2 to C5. Several factors may increase the corrosion risk of the base material, i.e. carbon steel, depending on the characteristics of the installation site. For example, storage terminals often have to be installed in marine environments, so high corrosion resistance is crucial. This is why surface preparation by shot blasting is of strategic importance."

The transition from manual to automated shot blasting

Whereas galvanising operations are outsourced to external suppliers, the rest of the production is done in-house, including both manual and automatic coating. "Euromecc," indicates Sciuto, "is equipped with advanced machines, capable of treating its products with any protection system required, from single-layer to three-layer systems applied with one-component epoxy paints. We also have our own in-house specifications that we offer for concrete batching plants and standard applications, for which



The inside of the shot blasting plant: the cabinet is equipped with 16 turbines, each with a power of 7.5 kW.

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the most popular blasting grade is SA 2.5. After years of manual shot blasting, we decided to rely on a fully automatic turbine machine, which has enabled us to optimise productivity, increase production, and ensure greater consistency in the quality of our coatings. The shot blasting cabinet we have just acquired was a sort of missing piece in the production process, which is now almost fully automated and ready to meet all the different customisation requests of our customers.

"Previously, our operators were blasting by hand for almost the entire working day. Therefore, we decided to invest and automate this process with an OMSG turbine shot blasting machine, which projects metal grit directly onto the surfaces to be treated, much faster and with a continuous flow. We were thus able to reduce the dwell time of components in our shot blasting cabinet by more than half." The arrangement of its turbines guarantees that the entire surface of the workpieces is reached by the metal grit. "With the manual process, this step was based on the operator's ability to project the flow onto the parts to be treated. Now, however, our workpieces are perfectly cleaned in a homogeneous manner, thus ensuring an adequate degree of substrate preparation."

Technical features of the OMSG shot blaster

"The system installed at Euromecc's headquarters," states Enzo Dell'Orto, the CEO of OMSG, "is a TUNNELBLAST 2530/16 H210 C tunnel shot blaster with a useful cross-sectional area of 2,500 mm in width and 3,000 mm in height and two hoists that can lift up to 10,000 kg each. The plant features 16 turbines, each with a power of 7.5 kW, and as many 7.5 kW-turbine inverters for lower energy consumption, as well as 16 special valves to feed the turbines themselves. The machine is also pre-arranged for use in line with the Industry 4.0



A bird's eye view of the coating system.

parameters: it will be possible to fine-tune the entire shot blasting process by means of a bar code matched with the translation and rotation speed of the turbines (controllable and adjustable through the inverters). Also with a view to process control, the system sensors constantly detect the level of abrasives in the machine and keep it stable, thus ensuring consistent results at every shot blasting cycle. Finally, the plant is equipped with a Protech manual retouching booth (6,000 width x 5,000 height x 17,000 mm length) whose filters, together with those of the shot blasting machine, guarantee atmospheric emissions below 5 mg/Nm³."

A winning choice

The path to choosing OMSG was quite straightforward and, as confirmed by Giacomo Di Pietro, the senior purchasing manager who handled the purchase, it did not disappoint: "Once we had identified the type of machine we needed, we carried out a search for possible suppliers in our area and a technical and economic market research. We therefore compared several offers from different suppliers and, in the end, we chose the solution provided by OMSG. We are now pleased with our machine, which has fulfilled contract commitments from all points of view, in terms of both quality and production. OMSG was able to fully meet our requests and, although this was a major investment, we found the best

balance between quality of service and price."

The successful installation of this new shot blasting machine enabled Euromecc to increase production at its Sicilian plant and thus meet all the different needs of its vast customer base: "Our headquarters in Catania are supported by a network of partners and distributors on all continents, serving a wide range of global customers with different specific needs. We deal with private, family-run companies as well as large players in the sector, such as Heidelberg and Holcim for powdered cement, but also Calcestruzzi-Italcementi Group SpA and Webuild SpA for concrete batching systems: thanks to its partnership with OMSG, Euromecc is now able to meet the requirements of every customer, from the smallest firms to the world-renowned multinational companies," concludes Di Pietro. ◀

In the previous page, from top to bottom:

- Silos after the shot blasting phase.
- The plant is equipped with two hoists that can lift up to 10,000 kg each.
- Parts coming out of the shot blasting machine.