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Opening photo: All.co Group, an industrial group founded in Pisa (Italy) in 1973, has established itself among the most successful companies in the sector of aluminium extrusion and processing.



FOCUS ON TECHNOLOGY

SPECIAL ALUMINIUM



All.co Group: A Wide Choice of High-Quality Finishes and Colours from a Well-Established Company

Barbara Pennati **ipcm**[®]

ipcm[®] has already presented several examples of Italian companies that have had (and been able to) innovate in order to overcome the economic crisis that hit the Country in 2008. In the last few years, there has been a slow recovery, but some markets are still struggling to get back on track and numerous company still have to look for the

right strategy to remain operational and relaunch their products. The solutions adopted up to now have involved plant investments, close collaborations with suppliers, widening of the product ranges, and export to foreign markets. Very often, the winning strategy is just a combination of all these practices.

All.co Group is an industrial group established in Pisa (Italy) in 1973 by the Vecoli family (**Fig. 1**). It has managed to consolidate its presence on the Italian and foreign markets, establishing itself among the most successful companies in the sector of aluminium extrusion and processing and achieving a turnover of 162 million Euros in 2017.

The success of this company is due to several factors, including its ability to present itself as a specialised aluminium extrusion centre. Its production cycle starts with the purchase of raw material and it continues with melting, extrusion, coating, and distribution operations – a process involving seven production plants and thirteen distribution centres located in Italy and abroad (ref.

Opening photo).

Besides presenting itself as a single-source supplier, over the years All.co has been able to cope with market fluctuations by adapting its production to the current demand and thus ensuring constant growth and affirming itself on the international markets.

“All.co designs and manufactures aluminium extrusions for the industrial and construction sectors, handling all phases in-house,” says Luigi Vecoli, the coating manager of the All.co Group. “In 1991, we even insourced the coating process to offer an extra service to our customers. We mainly paint material for the construction sector. This has enabled us to meet the needs of the market in terms of finishing, which, especially in recent years, has become increasingly important

for the construction field and therefore for us too. In the past, the most used colours were white and ivory and the most common finish was the glossy one; nowadays, in the world of aluminium and in particular of window and door frames, there is the possibility to experiment with many shades, whose demand varies according to the destination market.

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By making our production more versatile, we have also succeeded in establishing ourselves on foreign markets, which have become our main target, as the Italian aluminium market is still slow,” states Vecoli.

All.co has been actively collaborating for more than ten years with Inver, a manufacturer of industrial coatings belonging to the Sherwin-Williams Group, as well as the main supplier of the Syntha Pulvin® branded polyester powders used by All.co. For even greater production flexibility, also the vertical coating plant designed by Trasmetal (Milan, Italy) underwent a revamping in the 2014, with the installation of a new coating booth equipped with two OFB disks, able to treat profiles up to 6 metres and with an overall capacity of 40 tonnes per day.

Combining production versatility and quality consistency

“Our collaboration with Inver began in 2004. The first few years have been a trial stage for both parties: since we previously had other suppliers, Inver had to analyse our colours and adapt its products to our needs,” explains Luigi Vecoli. “Much of the

material painted in our Pisa plant is sent to our other factories and distribution centres. This allows us to be more competitive on the market and ensure fast delivery times to our customers.” The powders applied on all All.co products are Syntha Pulvin® polyesters specifically designed for the architectural



Figure 1: The Vecoli family, which founded the All.co Group.



Figure 2: Inver is the main supplier of polyester powders of the All.co Group.

sector, which are Qualicoat and GSB-INTERNATIONAL approved (**Fig. 2**). Thanks to the joint efforts of Inver and All.co,

the company is able to offer different finishes and effects while maintaining a high quality standard. These skills have helped establishing the firm on both the building and industrial market as well as expanding the application sectors of its products – which currently include road, naval, and air transport.

"Today's market requires attention to detail and very high quality levels, even in industries where a lot less attention used to be paid to possible defects and imperfections, such as the building one," explains Sherwin-Williams

architectural sales representative Marco Canola (**Fig. 3**). "Now, not only quality must be high, but suppliers must also be able to cope with the most diverse requests in terms of colours and finishes. Matte finishes prevail everywhere, while the colours requested vary depending on the

Country.

In Germany and France, for example, greys are in high demand, whereas in Italy the palette is much wider, from white and ivory to green and gothic brown (**Fig. 4**)."

"All.co performs 4 to 6 colour change operations per day. With such special and varied requests, for us it was crucial to find the right powder supplier, able to guarantee extreme versatility without compromising quality standards. Inver showed perseverance and expertise in meeting all our needs and it proved to be the perfect technological partner for All.co," says Vecoli. "When we replaced our coating booth in 2014, they were also able to modify their formulations to perfectly adapt them to our new application parameters."



Figure 3: From left to right, Marco Canola from Sherwin-Williams and Luigi Vecoli from All.co.

The coating process

The coating plant was designed by Trasmetal and it integrates into the fully computerised production flow of All.co (Fig. 5). "The plant has two loading areas: one for packaged materials that must be handled by an automatic unwrapping machine, the other devoted to the baskets containing ready-to-be-coated profiles," explains Luigi Vecoli. "Our production system is completely computerised. The operators use barcode reading guns to manage the whole cycle: in this way, not only have we eliminated paper, which is an advantage in terms of both eco-friendliness and cost efficiency, but we have

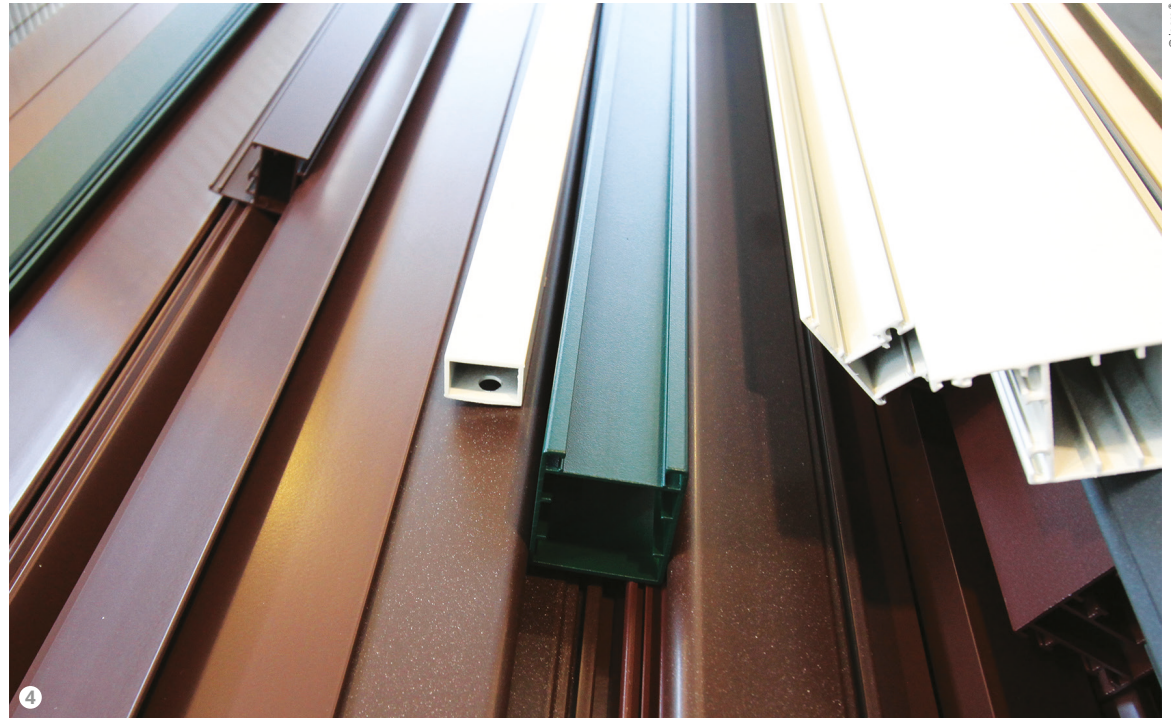


Figure 4: Some colours and finishes produced by All.co.



Figure 5:
The vertical
coating plant.



All.co has been actively collaborating for more than ten years with Inver, a manufacturer of industrial coatings belonging to the Sherwin-Williams Group, as well as the main supplier of the Syntha Pulvin® branded polyester powders used by All.co. For even greater production flexibility, also the vertical coating plant underwent a revamping in the 2014, with the installation of a new coating booth equipped with two OFB disks, able to treat profiles up to 6 metres and with an overall capacity of 40 tonnes per day.”

also minimised the possibility of any order management errors. Moreover, all information related to profiles is linked to the coating parameters, so that the operators have a complete overview of production and All.co can analyse the various data to improve its painting process. Monitoring every process phase has also resulted in a substantial reduction in production waste, as we are able to intervene promptly to solve any problems and prevent them from happening again.” Coating starts with a 10-stage pre-treatment

process (Fig. 6). The chemicals are applied through spray nozzles. After drying, the profiles enter the new coating booth (Fig. 7) installed by Trasmetal in 2014 and featuring two OFB disks. “The OFB technology is the most suitable for our type of production flow, which involves processing large quantities of material, and it enables us to perfectly coat all our profiles, as they loop around the disk to obtain uniform application over their entire surface. In the past, only visible parts had to be painted, but now we prefer to coat our

Figure 6:
The profile loading area and the entrance to the 10-stage pre-treatment tunnel.





Figure 7: Trasmetal's coating booth paints the profiles with two OFB disks.

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products on all sides,” says Vecoli. “After coating, the profiles reach an IR gelling oven (Fig. 8), again provided by Trasmetal. It is located before the polymerisation oven to ensure greater control over colour and reduce contamination among different process phases.”

“The profiles then reach the polymerisation oven (Fig. 9), operating at a temperature of 180-190°C. A storage buffer allows for effective cooling before unloading (Figs. 10 and 11). During the revamping process of 2014, we also lengthened the unloading bench (Figs. 12 and 13),” states Vecoli. “In the past, the material was unhooked, gathered, and loaded on forklifts for weighing. This much longer unloading station allows us to manage orders according to our current needs, postponing or anticipating operations without ever stopping production or slowing down the weighing and packaging procedures, which are performed automatically to minimise the possibility of damaging the material.”



Figure 8: The IR gelling oven installed before the polymerisation oven for greater control over colour and contamination.



Figure 9: Profiles entering the polymerisation oven.

A high-performance future

"Although coating is not the core business of All.co, our company is very attentive to the quality of its products and it strives to offer a reliable and complete service to its customers," explains Vecoli. "Our activity is certified according to the international quality standard ISO 9001 and the environmental standard ISO 14001, and our pre-treatment phase is Qualicoat Seaside certified. During production, we take samples of each colour at the beginning, in the middle, and at the end of the coating cycle. We then perform the tests required by the certification – scratch, impact, tear-off, and bending tests – as well as a salt spray test to ensure a 1000-hour resistance value."

"Before working with Inver, we already had our own tints, which Inver has managed to reproduce and adapt to its products," says

“Coating starts with a 10-stage pre-treatment process. The chemicals are applied through spray nozzles. After drying, the profiles enter the new coating booth installed by Trasmetal in 2014 and featuring two OFB disks. The OFB technology is the most suitable for All.Co’s type of production flow, which involves processing large quantities of material, and it enables them to perfectly coat all the profiles, as they loop around the disk to obtain uniform application over their entire surface. In the past, only visible parts had to be painted, but now they prefer to coat the products on all sides. After coating, the profiles reach an IR gelling oven. It is located before the polymerisation oven to ensure greater control over colour and reduce contamination among different process phases.”



Figures 10 and 11: The storage buffer for cooling the profiles and the unloading area.





Vecoli. "This may seem a secondary factor, but finding the right colour is never easy and quality can be affected if the formulation is not correct. For instance, door and window profiles are often coupled and even a minimal shade difference is not tolerated. Inver was able to faithfully reproduce the colour chart developed over the years by All.co and to further enrich it, guaranteeing at the same time the quality level required by the certifications that distinguish our group's production."

"The Italian market still prefers Class 1 powders. However, as increasing attention is paid to quality, the request for Qualicoat Class 2 certified products is raising," states Marco Canola. "In future, we plan to further strengthen our collaboration with All.co and offer to the Italian market an added value for conventional products, that is, better performing powders (as proved by our accelerated tests), already widespread in Germany and England." ○



Figures 12 and 13: The storage buffer for cooling the profiles and the unloading area.