

Acciai Speciali Terni: meeting new horizons in stainless steel by innovation and excellence

With over than 130 years of experience, Acciai Speciali Terni, part of thyssenkrupp group, has outstanding expertise in the stainless sector with a completely integrated and highly efficient production cycle. The company's core business is flat rolled stainless steel products. It also produces welded tubes and large forgings through its Tubificio Division and Forging Division, and distributes processed stainless flat and tubes through its subsidiary Terninox, located in Ceriano Laghetto, Milan. All steps of the manufacturing processes are completed at its Terni (Italy) plant, from steel casting to the finished end product which can be customized to meet customers' needs. Today Acciai Speciali Terni is one of the world's leading producers of stainless steel flat products, welded stainless steel tubes and forgings within a single integrated manufacturing site.

By Joanne McIntyre

New values, new vision

After an intense restructuring phase back in 2015, Acciai Speciali Terni (AST) embraced new values of global presence, innovation, customer orientation, reliability and passion. These values have helped it to grow to become one of the world's leading producers of stainless steel flat products and welded stainless steel tubes within a single integrated manufacturing site.

The new company vision "No market is too far away for our knowledge, passion and spirit of innovation" outlines where the company is headed, based on a culture of credibility and integrity. Post-restructuring, staff were encouraged to embrace the new internal philosophy as they pursued "our journey to new excellence" which influences the company culture and expectations, providing a strong new direction and mindset for all employees. Today all

people at AST, irrespective of position and role, have embraced the new vision and values.

Excellence & experience

Acciai Speciali Terni is unique in that it operates from a single integrated manufacturing site. With its core business being stainless steel flat products, the company has many years of experience in producing austenitic, ferritic and martensitic



Over 1.500.000 square meters of AST manufacturing facilities covering the entire production cycle, from melting to final product.

Tube production is an additional excellence of Acciai Speciali Terni. Superior craftsmanship in tube production has, within just a few years, positioned AST-Tubificio di Terni as a market leader in the exhaust system industry. The most important European automotive brands have chosen AST stainless steel tubes for high quality, performance and a wide product range along with tailor-made service solutions. The tubes are welded by an electric arc (TIG, GTAW), by high frequency induction welding (HF) or by laser welding.

AST's forging division which was one of the first systems to be ASME certified, also has a strong focus on excellence. Dedicated, ongoing research work strives to perfect and rationalize its forging technology, for example optimising forging and heat treatment cycles and studying the solidification of heavy ingots by means of mathematical models. The company's Finishing Center offers a wide range of surface finishes to improve the aesthetics and technical features of the finished end product. It represents the final phase of the production process, oriented to the market, as it guarantees customized solutions through just-in-time deliveries and value-added services such as blanking, cut to length, slitting, etc. The company's dedication to excellence is also demonstrated at this post-production stage where high quality surface finishes and polishes may be applied.

Innovative finishes

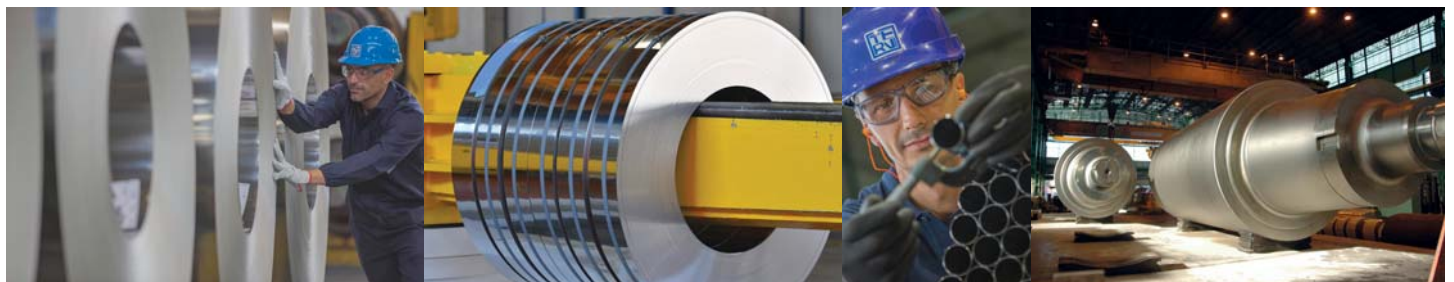
To enhance and customize the typical stainless steel finishes, Acciai Speciali Terni produces Vivinox® range, including Scotch Brite, Silver Ice® and Vernest® finishes. Silver Ice® is a product family with anti-fingerprint coatings designed in response to the market need for beautiful and easy-to-clean steel that reduces the visual impact of stains and fingerprints on stainless steel surfaces. It facilitates dry cleaning and protects the substrate from mechanical attacks (scratches and abrasions) and chemicals (corrosion). Silver Ice® is available in various colors for even greater aesthetic appeal. Today these innovative finishes are essential elements in the design and production of home appliances, kitchens and architectural panels.

AST also offers patterned and micro-patterned finishes. The technical performances of the stainless steel base combined with the beautiful finishes are ideal for the architectural sector. Today architects and designers all over the world choose AST stainless steel for its durability, strong aesthetic appeal and sustainability.

Post-production services

Once the production cycle has ended, AST steel can be further processed in its dedicated Finishing Centre to achieve the size specifications and surface appearance required by the customer. Products can be slitted in narrow strips and cut in length on state-of-the-art

stainless steels to meet the needs of customers from every market segment including transportation, household applications, industrial goods and architectural applications. AST produces a wide range of high quality stainless steel to meet requirements for chemical composition, mechanical properties, corrosion resistance, cold formability and weldability. Its flat products are offered as semi-finished products (hot-rolled coils), hot white band and cold-rolled stainless steel in a wide range of thicknesses, widths and lengths.



A core business in stainless steel flat products, a market leader in the stainless welded tubes production especially for exhaust systems and a wide range of forged steel products.

[COVER STORY]

equipment. This is also where its innovative finishes are applied with the strip coating line.

When it's time for an order to be shipped, logistics are expedited by an innovative IT system which simplifies and accelerates delivery of the finished product. Tubes, for example, are delivered up to 8 times a day, and deliveries are monitored via an online platform which allows customers to follow all the phases, from order to delivery.

Automotive expertise

Thanks to an integrated approach with flat and welded tube production, AST has positioned itself as a market reference for the automotive sector. Manufacturers in the automotive industry value solutions that guarantee technical, aesthetic and eco-friendly performances, meeting a new need for environmental sustainability. In this constantly evolving scenario, stainless steel plays a crucial role and is increasingly used to manufacture components in all transportation sectors. AST is experienced in supplying automotive sector, thanks to its tubes business, Tubificio di Terni, and the internal processes driven by experienced managers. This was reinforced by last years' performance improvements in

Ongoing innovation

Innovation is the key that allows Acciai Speciali Terni to continue growing. Constant R&D activity has increased the competitiveness of the company both in the field of processes and products, bringing a wide and differentiated portfolio able to respond promptly to new market needs.

The link to customers is all-round innovation found within the manufacturing, logistics, packaging and other processes in creating innovative products and services.

almost all areas of the organization, as well as the highly skilled technicians and engineers who also benefit from the traditional link to thyssenkrupp.

Tubes production follows an organized workflow under Quality Management Systems certified by third-party entities such as Det Norske Veritas for ISO 9001 since 1995, and subsequently in accordance with QS 9000 and ISO TS 16949.

AST produces high quality stainless steel flat products for the major re-rolling, precision re-rolling and tube-making companies, as well as system and tank manufacturers.

Once processed by customers in the industrial goods sector, AST stainless steel is used in a wide range of industrial applications (mainly in the chemical, petrochemical and food industries). For the consumer goods sector, Acciai Speciali Terni provides increasingly sophisticated and high-performance solutions.

New & innovative grades

Among AST's product range are the new ferritic grades, mainly addressed to the automotive sector, for the entire exhaust system, from the manifold to the external cold end. These grades were created for the increasingly stringent requirements of a continuously developing sector, and are able to respond to high temperature and improved formability performances in increasingly complex applications.

The innovative superferritic stainless steel grade (470LI), thanks to its high chromium content, guarantees a corrosion resistance comparable to that of austenitics but at a more stable and competitive price, being nickel free. For architectural applications and other end uses, where corrosion resistance and durability performance are important, the superferritic grade could be used as an alternative to



High quality stainless steel products for automotive, architecture, industrial and consumer goods sectors.

the traditional austenitics. 470LI is an excellent alternative to austenitic grade 316L, offering a perfect solution for the architectural sector where strength and corrosion resistance are critical.

AST has expanded its wide range of products to martensitic grades for cutting tools and further applications.

Lean manufacturing, continuous improvement

AST is making significant investments to drive ahead digitalization of production systems and customer interface. Its ongoing digital transformation is creating greater internal efficiencies, new smarter

Customer orientation

Today, customer orientation is at the basis of the AST philosophy as customers represent the most valuable asset of every employee. For this reason an innovative cultural change program (named ASTory, cASTomer in our Heart) was designed to bring customer-centricity into the company at all levels, in the heart and minds of all AST staff.

*"This program increases customer awareness through a series of customized and non-conventional activities, communication tools, and events and underlines AST's self-awareness of not limiting the definition of "innovation" "just to products", says **Oliver Thiis (Head of Internal Sales/ Marketing and Lead Project Manager of ASTory).***

ASTory was awarded as "the most innovative communication & change program" by AIDP, Italy's largest Human Resources association. The program was awarded first place above other equally powerful projects from Italian and international leading companies of all sectors.



An integrated approach within flat products and welded tubes makes AST a considerable reference for the automotive sector.

interfaces and new business opportunities. In 2015 the Lean Transformation program was initiated, creating a path that continuously searches for improvement and waste reduction. The program represents a change in terms of corporate culture to focus on the value of simplicity. The method consists in measuring, sharing and improving together, starting from the concept that every result achieved is a beginning and represents the basis to be able to obtain another, greater success. Additionally, 1,700 people have been trained in the techniques of problem solving using 'Kaizen Blitz'.

This was the first time that the philosophy of "Continuous Improvement" (Lean Transformation) had been applied to a steel site of this type and size, making Acciai Speciali Terni a case history to be observed at the international level. This also resulted in the company receiving the Kaizen Award Italy 2017 for the impact and speed of the implementation demonstrated.

Environmental awareness

Safety, health and environmental issues are deep-rooted within AST's corporate philosophy. The company has certified its environmental management system according to ISO 14001, focusing on environmentally-friendly energy management. The re-naturalization of its slag area into a green area open for the city, and an international tender to find a final solution for recycling the slag resulting from stainless steel manufacture, are examples of this philosophy. Another recent environmental project was the complete redesign of the scrapyard with a focus on environment, sustainability, automation and digitalization. New technology and processes were utilized which, combined with a mobile IT system, has made it possible to follow loading operations in real time and trace the



AST successful sales team meets customers at Tube Fair 2018.

finished product to the corresponding scrap. Each of the measures initiated at the redesigned scrapyard has contributed to a significant improvement. In addition to cost effects, the improved sorting and storage facilities have enhanced the site's environmental and safety performance. The results of the team effort are impressive. In terms of sustainability, safety, automation and digitization, the new scrapyard at AST in Terni is one of the most technologically advanced in Europe.

In summary

Acciai Speciali Terni, one of the most important integrated steel companies in the world (with all production processes completed in the same plant in Terni), focuses on stainless steel as flat products, tubes and forgings. The company guarantees its global customers all the experience and expertise of its people together with a strong spirit of innovation. Acciai Speciali Terni believes in the importance of innovation, including continuous research for quality improvement and state-of-the-art

digitalization. It merges passion and customer care, while viewing safety as a cornerstone of all its activities. As an integral part of thyssenkrupp, a highly diversified industrial group with traditional strengths in materials and a growing share of capital goods and business services, Acciai Speciali Terni is able to service even the most distant needs and markets.

Innovative sales organization

"From the very beginning, it was most important to drive our customers and market requirements into our new organization. Therefore, we have very much focused on forming the best and most advanced interface between the market and our production in Terni. The strength of our global sales organization is to ensure dedicated support for each market sector and application. Wherever a customer is located, they can count on the expertise of our very skilled and experienced commercial and technical sales team. We have invested heavily in highly-experience technical experts, who are dedicated to supporting innovative solutions together with our customers. As part of thyssenkrupp's Materials Services business area, AST guarantees a global presence, with about 480 offices, warehouses, and service centers in over 40 countries. The company's collaboration with the most reputed Italian Research Centers ensures products with excellent quality standards worldwide. Additional focus is set on the cooperative development of existing and new products and grades," says Dr. Torsten Schlüter (CSO of Acciai Speciali Terni).



Thanks to the introduction of lean manufacturing AST was rewarded with 2018 Kaizen Blitz Award.