

Acciaierie e Ferriere del Tanaro

Riva Acciaio
Lesegno



FORNI ELETTRICI



The history

The company was set up in Ceva, in the Cuneo District, on the 20th of April 1960, with a capital investment of 30 million lira for building a steelworks in Lesegno.

In that period of time Italy's economy was booming. Domestic steel production had by then reached 9 million ton, however, the sustained demand required the import of a considerable quantity of steel.

In the early 1960s the process of industrialisation was in full progress. A vast shift of workforce from the farming to the industry occurred, with the ensuing migration from the countryside to the cities.

To prevent the depopulation of mountainous regions, the State granted contributions to enhance the industrial development in the so called "depressed" areas. With an investment

amounting in total to 1,4 billion lira the steelworks of Lesegno located in the Province of Cuneo was built up, as a valid alternative to the emigration.

On the 30th of April 1961 the foundation stone was laid on a plain of about 110.000 square meters. All infrastructure connections like roadways and railway and power supply for the plants had to be provided.

When fully operational the works was to employ 100 people and to produce approximately 70.000 ton per year of structural steel and long rolled products with small and medium cross section.

Despite its outlying position, the works had a good rail and road connectivity with Turin and Savona for the supply of scrap and for the shipment of the finished products.

Production start-up was in 1961, but the company did not survive the steel crisis of 1964. Eager to enter the sector of the rolled products, the Rivas bought it in 1966.

The works has undergone vast renovation interventions since, beginning with the sheds, the continuous caster and two new furnaces, in addition to refurbishing the rolling mill.

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Today the steelworks specialises in the production of rolled billets, merchant bar rounds and reinforcing steel bars, both smooth and with improved adhesion.

85-90% of the semi-finished products (continuous caster billets in carbon steel and low-alloyed steel) are produced on site, the remaining part comes from the steelworks of Genoa-Cornigliano.

The reinforcing steel bars are certified according to the standards of the various markets served (Italy, France and Hong Kong). Round bars and rolled billets are supplied to forgers, mechanical engineering companies and trading companies, while the reinforcing steel bars are sold to building contractors and merchants.

The works has an internal railway connected to the national railway network.

The 80 ton electric arc furnace is equipped with an EBT system (eccentric bottom tap) to retain the slag inside the furnace. It is enclosed in a doghouse and supplemented by a ladle furnace for secondary metallurgy.

The 6-strand continuous caster has a closed-circuit water treatment plant to minimise water consumption.

The steel mill also features a dedusting plant and a pelleting plant for the dust collected.

The rolling mill is equipped with a 55 ton/h pusher type reheating furnace and with rolling stands that can be alternatively used for rounds, billets and reinforcing steel bars. It consists of a 3 high roughing stand with seven passes, an intermediate mill with eleven stands, a finishing mill with four stands and a cooling bed. Furthermore, it is equipped with a controlled water cooling plant for the production of high quality reinforcement steel.

Downstream of the rolling mill a cold shear for cutting to measure and an automatic bundler are installed.

Roller conveyors and bridge cranes handle and stock the finished products in the three stock sheds, from where they are shipped by rail and road.

Furthermore, the works is equipped with test and analysis laboratories with three optical emission spectrometers, devices for determining the carbon, sulphur and gas content in the steel, one portable spectrometer, equipment for tensile, resilience and Jominy tests and for performing metallographic examinations.



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The works specialised further in the production of steels for heat treatment, rolled both as billets and as rounds keeping, however, the certification of the production of reinforcement steel bars with improved adhesion for the building industry. The majority of the clients are, therefore, big stamping companies, suppliers of parts for a variety of sectors, including earthmoving machines, flanges, fittings and general mechanical engineering.

The production capacities of the steel mill and the rolling mill are almost identical. As a result, the works of Lesegno is not supplied by other production sites of the group, except for special situations. In the last years the investments were mainly directed at enhancing the automation, increasing the productivity, reducing energy consumption and improving quality.

A few examples: the capacity of the furnace for the steel production was increased up to 95 ton and a vacuum-degassing plant was installed for further metallurgic treatment. Moreover, the discharge of the scrap buckets inside the EAF-furnace was totally automated.

In the case of the continuous caster the main interventions were related to the increase of the capacity of the tundish, the introduction of electromagnetic stirrers in

the mould, the replacement of the warm shears for the billets with high pressure methane/oxygen cutters, the installation of a billet length optimising system, at the moment set on 8 metres, working on the basis of the weight of the billets, and in the exit area of the cooling bed, a welding robot that welds on each end of the billets a label with all necessary data, printed with thermo printers, for tracking purposes.

Needless to say, the auxiliary facilities were equally adapted, for instance the dedusting system for capturing the fumes during the steel treatment, the plants for return water cooling and conditioning and finally the plants for adding alloys and other additives. Likewise, interventions were carried out in the rolling mill to the same end. In fact, the 55 ton/h furnace was modified, the old burners were replaced by new and more efficient ones, and thanks to the



broadening of the furnace it was possible to roll billets with a length of 5 m. In order to further improve the heating conditions of the billets with a lower specific consumption of methane, thereby increasing the productivity, a new furnace was bought, equipped with regenerative burners, with a capacity of 120 ton/h with billets of 160 mm size per side and 8 m length.

In the meantime, a diameter measuring gauge was installed on the rolling line for the continuous monitoring of the whole production. This system facilitates the adjustment of the rolling mill considerably for the operators, in addition all production data are stored in it.

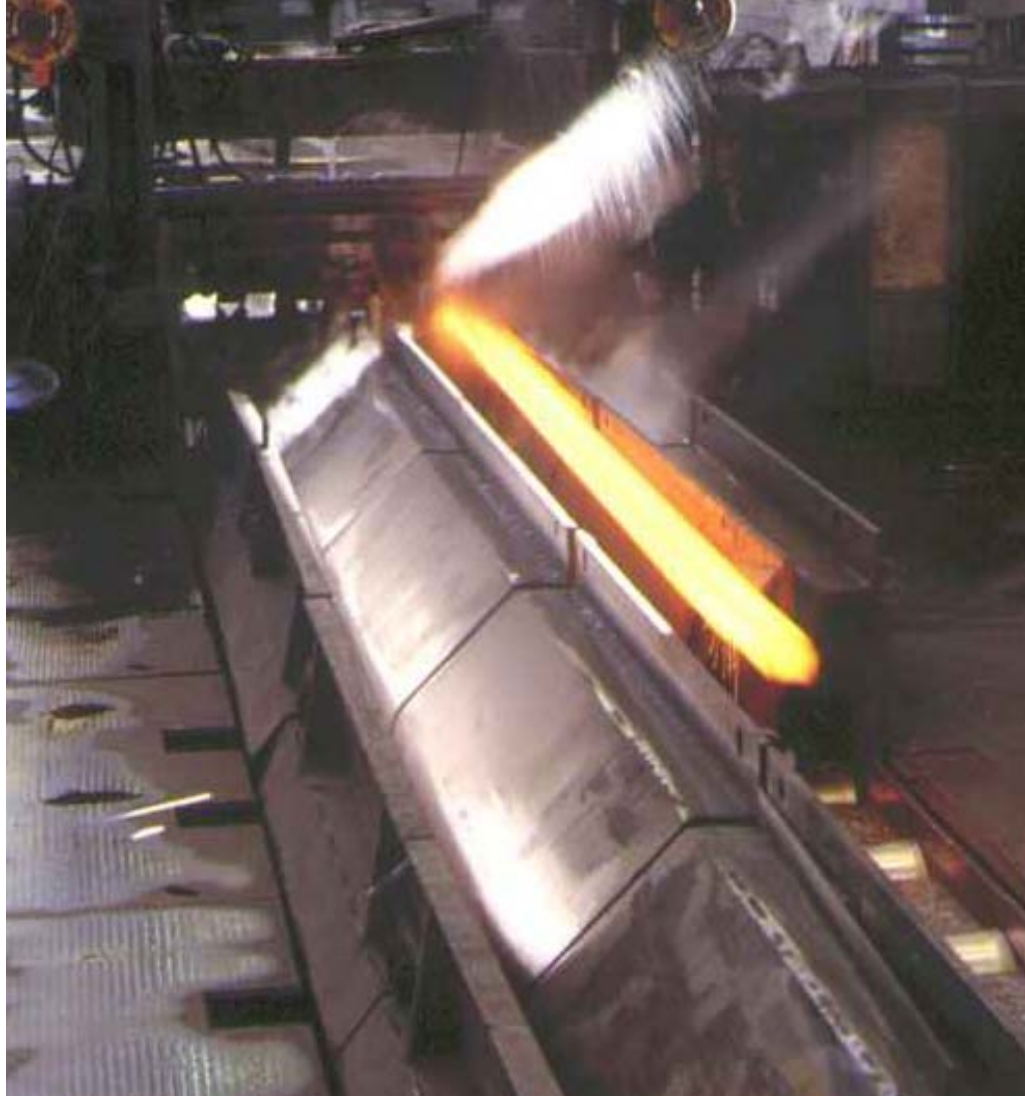
In the course of 2011 the rolling mill was totally modernised and in January 2012 the start-up of the new continuous rolling mill took place, consisting in one sliding type

rougher which keeps a fixed rolling axis and which can have 3 or 5 passes according to the calibration, and in six horizontal/vertical stands (the intermediate rolling mill) which feed the existing continuous finishing mill.

The laboratories for mechanical tests and analysis were equipped with machines in line with the new requirements of the finished products.

The following new tools were added to the existing ones or replaced them: 60 ton tensile test machine, 1 ton tensile test machine, extensometers and transverse strain extensometers, Charpy testing machine, automatic machines for hardness tests, thermic treatment furnaces and for Jominy tests, machines for the preparation of the samples destined to optical microscopes, analysis systems of the oxygen, nitrogen and hydrogen content in the solid steel.





Moreover, a research test laboratory was initiated serving all the works of the group. The essential machine of the research laboratory is the Gleeble 3800. It is a very sophisticated steel process simulation machine for various kinds of testing and analysis methods (thermic, chemical, mechanical, etc.) on a wide range of metals.

Gleeble reproduces on small samples of a few hundred gram the process actually taking place on industrial scale in the big production sites. Furthermore, the research laboratory is equipped with a 15 kg liquid steel induction furnace and with a cold rolling mill capable of preparing the rolled material destined to Gleeble testing.

The equipment of the research laboratory is used also by the professors of the Technical University of Turin and by the University of Pisa for carrying out their testing together with scientists and students.

The works of Lesegno is certified according to following standards:

1. UNI EN ISO 9001:2008 renewed in May 2014,
2. UNI EN ISO 14001:2004 renewed in November 2013,
3. BS OHSAS 18001:2007 renewed in March 2014.

Furthermore, the works of Lesegno has obtained following certificates:

1. Regulation 97/23/EC (PED)- TUV AD 2000- Merkblatt W0/TRD 100 renewed in November 2012,
2. Regulation 89/106/CEE renewed in January 2014,
3. Conformity with the Decree for the product warm rolled reinforcement steel D.M. 14.01.2008 according to Attestato di Qualificazione 059/09-CA of 10.11.2009.

Finally, the works has obtained the Integrated Environmental Authorisation (AIA) issued by the Province of Cuneo in the course of 2007 and renewed in 2013.