

Since 2001, the year when a tornado severely struck the Arcore mill, Tenaris has invested an overall sum of 35 million Euros for the reconstruction and for improving the production and logistics processes, of which 15 million addressed to work for increasing production flexibility and plant reliability, increasing automation and controls, improving safety and reducing our environmental impact.

Moreover, thanks to our investments, over recent years Arcore has perfected an extremely versatile leading offer which rapidly responds to market requests, not only for innovative customised technical solutions, but also through logistics organised to the customer's specific needs.

This all places the Arcore mill among the leaders in Europe in the production of pipes for precision mechanical, automotive applications, manufacturing feasibility matrix designed specifically for the customer, and other high alloy steels (P91, 550) which are used by the latest generation of power plants and as accessories in oil&gas drilling.





 **Tenaris** Dalmine

10 Reasons
for choosing
Arcore

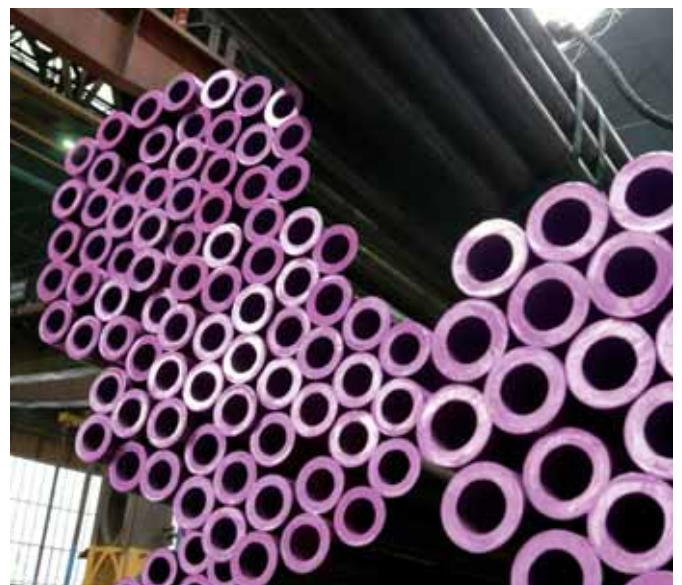


There are numerous different factors which place Arcore products in the highest bracket for their quality and safety:

- 1 Non standard diameters and wide size range of wall thickness:** it produces diameters from 48 to 219 mm and wall thickness from 8 to 50 mm.
- 2 High-level production efficiency and flexibility:** the Arcore man-ton production coefficient is very low, and hard to find in other rolling mills with similar features, along with excellent flexibility to produce small lots in diameter and thickness.
- 3 Integration with the Dalmine steelworks:** means the working load on the rolling mill can be optimised and, therefore, the lengths of the pipes.

4 Ability to produce various steel grades or studied to the customer's specific needs: to respond to the needs for fatigue resistance applications and for customers who use the pipes in machine tool working. Over recent years special steels have been developed and perfected, boron and sulphur steel, TAM – pipes for mechanics – and TAM Plus – for working with machine tools (for more information about the technical features of TAM Plus, you can find the catalogue in our website: <http://www.tenaris.com/Italy/it/news/catalogues.aspx>). Boron steel, an excellent product from the Milan factory, is widely used in mechanical applications (bushings) when quenching and tempering are required.

5 Quality certified to ISO TS 16949 standards for the automotive sector: the hot rolling mill has been working for 6 years with automotive certification, boasting extensive sound experience to guarantee total safety for our customers.



6 Fast production times: the production line is integrated from the rolling mill to the finishing line, meaning that just 3 hours are needed from the rolling mill furnace to the finished pipe warehouse, against a week in other mills without integrated lines.

7 Totally integrated process controls: there are numerous different automatic control and regulation systems installed throughout the production line:

- Furnace management control system, developed by Tenaris ad hoc for its rolling mills, meaning that the billet temperature can be automatically controlled inside the rotary furnace.
- Automated process control system, developed specifically by Tenaris where the parameters for regulating the rolling process are recorded and available for the operators. In fact, an increasing number of the parameters are proposed automatically to the operators to reduce the process variability as far as possible.
- Thickness measurement during rolling. Two radioisotope thickness measurers are positioned

at the exit from the rolling mill, one on the gauge line and the other on the reduction unit line.

- Automatic steel grade control in line with the production flow. Tenaris is the only European manufacturer with a robotised system, the most reliable currently available on the market, which gives a final anti-mix control before the products are sent to the store, which considerably reduces the risk of mixes.
- Ultrasound controls for the more sophisticated products, according to the customer's specification or to the more common international standards.



We have also developed tailor-made services for our customers, improved delivery standards, reviewed the internal procedures and organisation with customer satisfaction our leading priority.

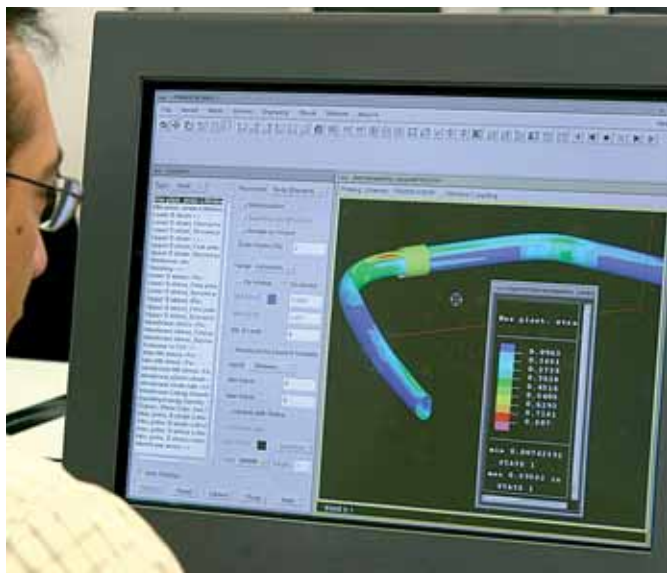
8 Dedicated Services – Customer Service Centre: the factory (which does the standard cutting and peeling operations) is perfectly integrated with the Service Centre for any additional processing, such as cut-to-length, tapering (for making axles) as well as special packaging (such as straps, wooden crates, pallets, metal cases) to the customer's specific requests. Unlike other factories where promised delivery is measured in terms of a fortnight or month end, for our Service Centre it is measured daily with very fast lead times of around 48 hours. The promise level has risen over recent years from an average of around 70/80 % to excellent levels now of 98/99 %, thanks to our investments to replace and upgrade the sawing machines and for training our operating personnel. Moreover since 2009 our Service Centre has been added to the production chain and received ISO TS 16949 automotive certification for component customisation (for axles).

9 Promise performance: the average delivery promise to the customer that deliveries have settled at over the last two years is 95%.

This important result is mainly further to managerial improvements:

- Improved order acceptance process (reviewed planning and more careful definition of the delivery dates for campaigns and product types).
- Improved off-line management (management of both the UT and the off-line by delivery date).
- Periodic promise progress meetings.
- Periodic internal non-conformity analysis meetings.

Furthermore, the improved quality parameters have helped reduce re-rolling requirements and lost positions due to rejects. Any non-conforming materials are handled much faster, reducing resolution times to zero through real time decisions being taken about whether to reprocess or re-roll the material.



10 Flexible and fast deliveries: thanks to our investments in our IT systems, to standardising and harmonising the gauges and to our very efficient planning skills, the delivery times have fallen from more than 8 weeks down to 1 month.

All feasible dimensions for each rolling campaign are guaranteed rolling; this means that monthly deliveries can be guaranteed for all the diameters, unlike in the past when several diameters were rolled in alternating months. It is now standard practice to be able to deliver up to twice a month (mid and end month).

When the customer has specific needs, we can guarantee customised deliveries with ad-hoc lead times.