Ascometal, the European market leader for specialty steel long products for the automotive, bearing, spring, oil-and-gas and mechanical applications, placed an order with Danielli Olivetto Ferrè (DFO) in September 2014 for a revamp of the bar heat treatment plant at Les Dunes. The request was to install a new furnace quickly—while maintaining the high performance standards and quality of equipment—in a complex already operating two other furnaces supplied by DFO.

In just seven months, DFO executed the project on a turnkey basis, and industrial operations were ready to restart in April 2015, followed soon by the certification of the excellent performance by the furnace in maintaining the heating temperature well within the contracted tolerances (450 ± 5 °C; min. and max. recorded values were in fact +1.5 and +3.7 °C, respectively.) The new furnace reflects a similar structure installed by DFO in 2007, confirming the company’s ability to offer quality, technology, and optimal solutions in bar tempering, softening, annealing, etc.

**Focal points of the furnace**

The inner furnace chamber is equipped with a direct flame combustion system and high-temperature recirculating fans that are available to perform a wide range of treatment temperatures (ranging from 450 to 760 °C) and also accomplishing challenging temperature uniformity (± 5 °C) for each individual bar layer treated in batch mode.

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**Excellent lead-time:** seven months to execute the project on a turnkey basis from contract signing to startup.
1 Rapid final installation was strategic to fulfilling the customer’s requirements.

2 Delivery of the machinery was carried out in two major and complete sections ready to be connected together directly on site.

3 Pre-assembly of all equipment (including lining, piping, etc.) directly in the workshop.

Characteristics
Furnace inner chamber: Width - 2 m; length- 15.6 m; height - 2 m
Processed bars: Diameters from 80 to 313 mm; Lengths from 4 mm to 14 m;
Maximum weight up to 5.3 tons per bar.
Maximum batch load: 42 tons.

Bars are loaded onto the external roller table to create a single batch layer. Then, this is loaded into the furnace by synchronizing the rollers inside the furnace (16 rolls - dry type - high Ni-Cr). The batch is then treated: oscillation takes place on the dry rolls inside the furnace functioning with “On-Off” burner control, and controlling high waste gas recirculation inside the chamber. This method ensures a high and uniform furnace/batch heat exchange, prevents the formation of hot spots on the bar surface, and makes it possible to achieve a high temperature uniformity in the entire furnace chamber.

Mechanical characteristics are therefore consistent and guaranteed along the entire bar length.

In the first contractual tests performed on April 2, 2015, these targets were immediately achieved.

The second and last test performed on April 8 was very successful as well, to the customer’s full satisfaction.

Tests (carried out by a third party) certified the new DFO furnace ready for industrial operation and confirmed DFO’s reputation for supplying quality products with the highest standards for performance.

Customer satisfaction is an essential part of any company’s business strategy. Our clients’ reports of their experience with our products offer an important view and are a key performance indicator that demonstrates our progress toward effective and quantifiable dynamics for customer retention, or even where there is room for improvement.