



Corporate Presentation Equipment

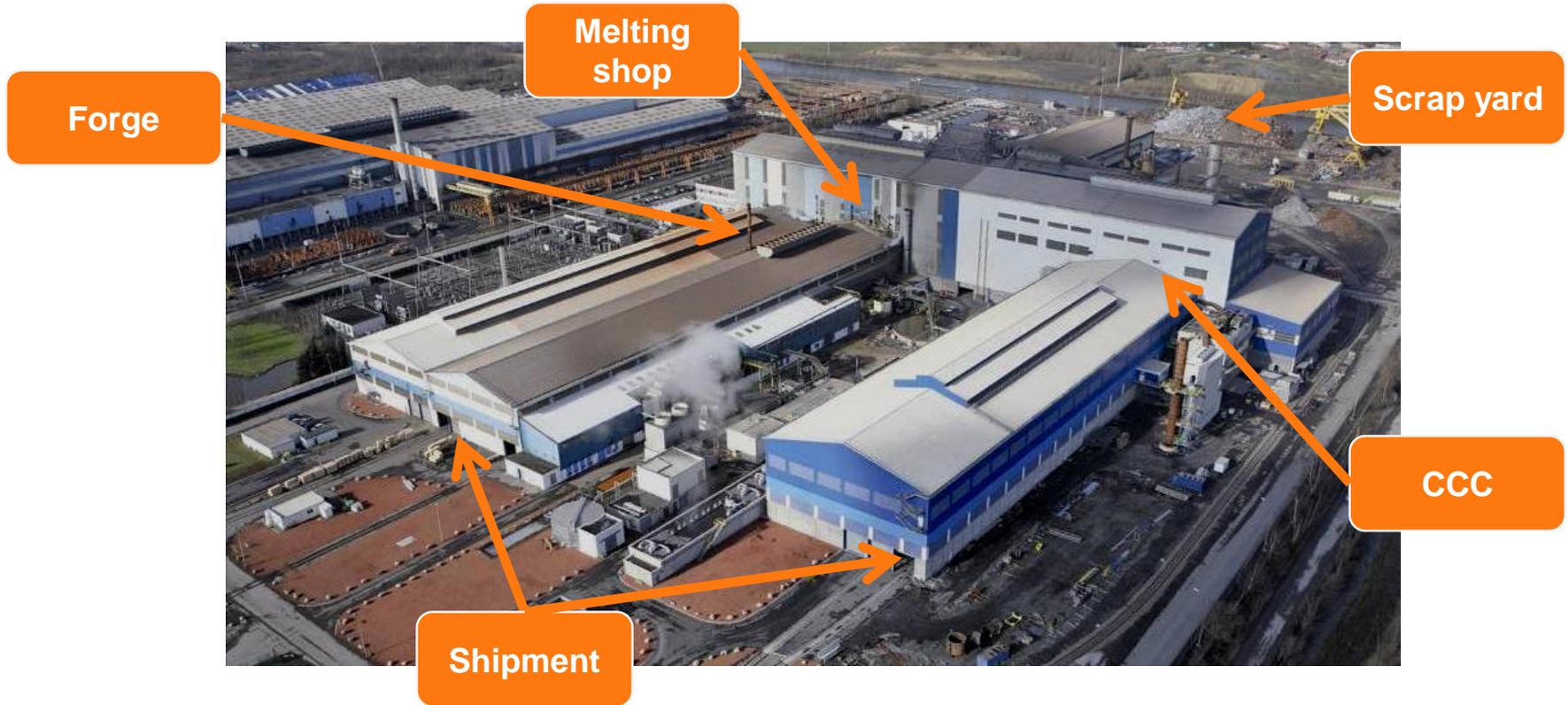
Saint-Saulve, October 2021



State-of-the-art Assets

- The plant consists of :
 - 90 t / 115 MVA SMS Concast Electric Arc Furnace
 - 15 MVA Ladle Furnace
 - Vacuum Oxygen Degassing unit (VOD) – twin tanks
 - 4 strands caster Danieli – bow type ; 12 m radius
 - Forging shop GFM with heat treatment (including variable diameters for axels)
- The plant produces continuous cast rounds rounds blooms (round, square and rectangular profiles) in carbon and alloy steel (up to 13% Cr). It also produces forged products (from Ø110 to Ø250 mm).
- The plant is connected to railway network and Escaut river.
- The plant has all necessary ancillary equipment (from scrap yard to logistics) to be totally autonomous in its operations.
- The equipment is in excellent condition ; 150 m€ have been invested in the last 15 years.
- One of the most modern steel shop equipment in Europe.

Plant map overview



Main figures - 2019

- 400 existing grades, possibility to design very specific grades to meet customer needs
- ENS (mix of steel grades in sequence) and Flying Tundish (on main diameters) capabilities. Capacity depends on the sequence ratio
- At current mix (seq. ratio @ 3.0) : 275 kt/yr at 3 shifts
- Evolution function of number shifts, progress plan, and sequence ratio (up to 4,5)
 - 400 - 435 kt/yr at 4 shifts
 - 450 - 600 kt/yr at 5 shifts
- Forging capacity at 60 – 80 kt/yr
- 266 employees (31/12/2019)
- 245.000 m2 - 61.000 m2 covered
- Very short leadtime : from 1 to 2 weeks
- Claims : 0,7%

Production route – Scrap Yard

Objectives : Supply the EAF in scrap adapted to the grade to produce

Scrap yards :

- 13.000 m2, 80.000 tons
- Origin = automotive industry, scrap collecting, recycling VALLOUREC and ASCOMETAL, etc...

Supplies :

- 70 % by trucks (50 to 80 / day)
- 25 % by barges (5 / week)
- 5 % by train

Receiving controls

Quality and radioactivity

Loading 50 buckets per day

- Radio connection with the EAF
- Loading scrap metal adapted to each grade



Production route - Electric Arc Furnace (EAF)

Objectives :

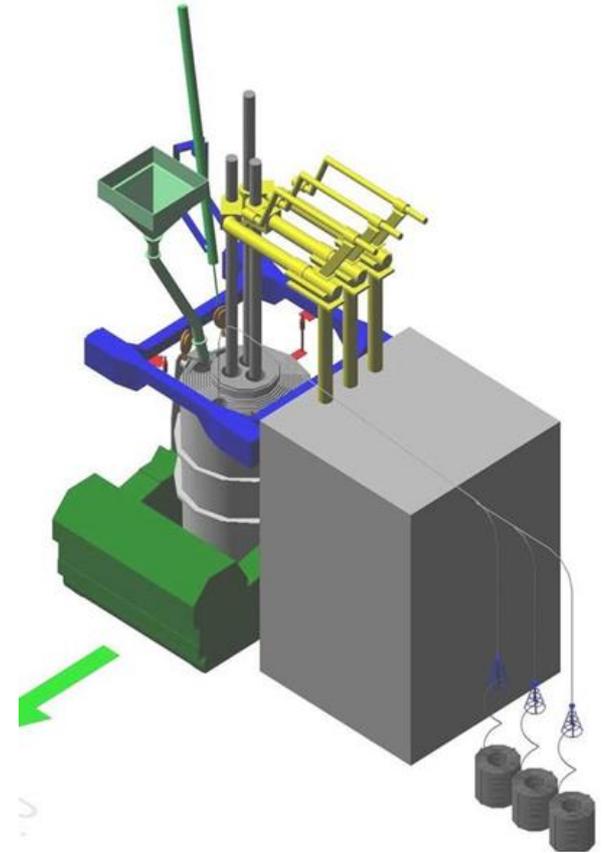
- Mastering fillings to prepare the final metallurgical analysis
- Melt the scrap and bring the temperature to 1,680° C
 - Electrical power : 115 MVA – 930 V – 55 000 A
 - 3 jets for injection of oxygen, gas and coal
 - Shell diameter : 5,90 m
 - 3 electrodes Ø 600 mm (24”)
 - Water cooled walls and roof (1 500 m³ / h)
 - Production capacity : 23 casts per day (2 000 tons / day)



Production route - Ladle furnace

Objectives :

- Adjust steel analysis to meet customer's needs
- Adjust delivery temperature for continuous casting
 - Mineral and metal additions, in bulk by hoppers or by injection of cored wire
 - Argon & Nitrogen bubbling
 - Power 15 MVA
 - 3 electrodes Ø 350 mm (14 '')



Production route - Vacuum Oxygen Degazing (VOD)

Objectives :

- Vacuum decarburizing for high alloy steels
- Degassing under vacuum for specific steels (low nitrogen and low hydrogen)
- Cleanliness
 - Tapping
 - Deep vacuum (1mbar in 6 min) on 2 tanks
 - Steam generator (12 bars) + 2 vacuum pumps
 - Gas analysis by spectrography
 - Cored wire injection

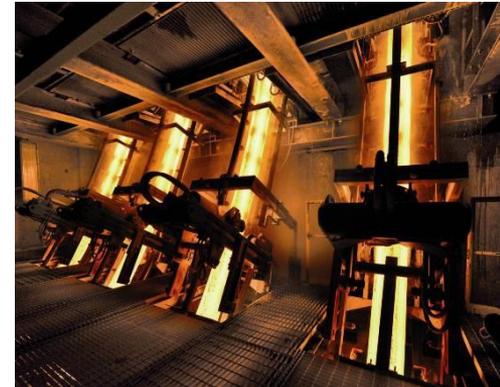


Production route - Continuous Caster

Objectives :

Solidify liquid steel into round bars Turret with 2 positions

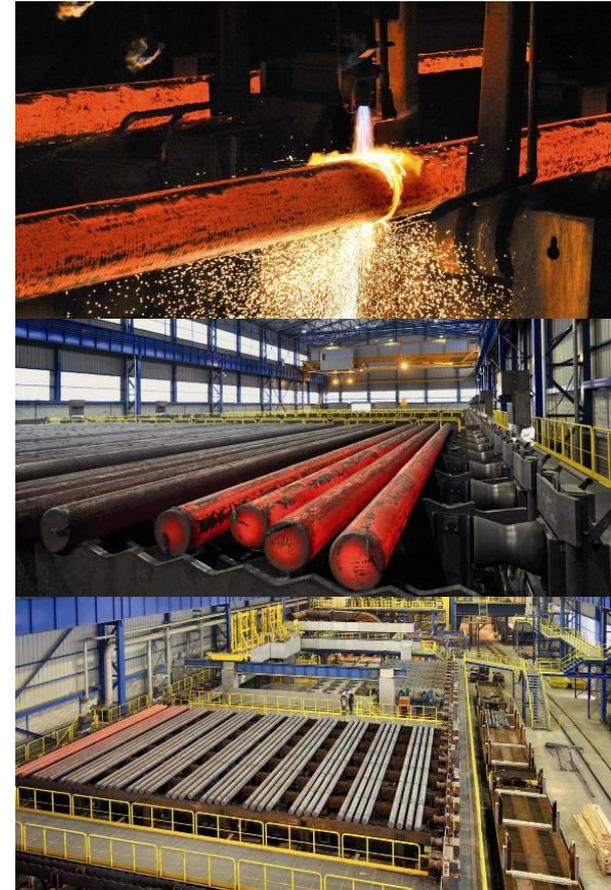
- 4 lines fed via a tundish
- 4 water-cooled copper molds (lg 780 mm)
- The bars are straightened and cut to length by oxy-gaz torches
- Tundish Sequence from 1 to 12 heats
- 6 diameters changes per week
- About 100 grades per month
- \varnothing bars = 180, 220, 250, 260, 270, 280, 310, 325 mm
- Max. length = 12,4 m
- Metallurgical height = 32 m
- Radius of the curve = 12 m
- Extraction speed from 0.65 to 2.6 m/min
- Capacity of 100 to 125 tons/h acc. to the diameter and the grade



Production Route - The Bar Hall

Objectives :

- Cutting bars to customer length
- Marking for traceability
- Natural cooling of bars and straightness
- Visual inspection
- Packaging and shipping
 - 80m cooling bed (900° C to 150° C in 8 hours)
 - Traceability by punching and labeling
 - 1000 tons of outstanding
 - Capacity 15 wagons
 - 2 electromagnet cranes



Production Route - Forge

Objectives :

- Reduce the section of the bar by forging to improve the internal quality of the bars (10% of the booklet)
- Obtain small diameters not produced at CCC
 - Reheating furnace : 1 250° C
 - Forge with 4 hammers, nominal power : 1200 tons
 - 250 rpm
 - Current notebook Reduction
 - $\text{Ø } 270 \text{ mm} \rightarrow 220 \text{ or } 180$
 - $\text{Ø } 250 \text{ mm or } \text{Ø } 220 \text{ mm or } 180 \rightarrow 140$
 - Technical feasibility from $\text{Ø } 110$ to $\text{Ø } 250$ in final diameter
 - Heat treatment if necessary



A large, glowing red metal beam, likely a steel I-beam, is the central focus of the image. It is positioned horizontally and appears to be part of a heavy industrial machine or structure. The beam is surrounded by various mechanical components, including bolts, nuts, and structural supports. The background is bright and hazy, suggesting an industrial environment with a strong light source, possibly the sun or a large lamp, creating a lens flare effect. The overall scene conveys a sense of industrial strength and precision.

Thank You