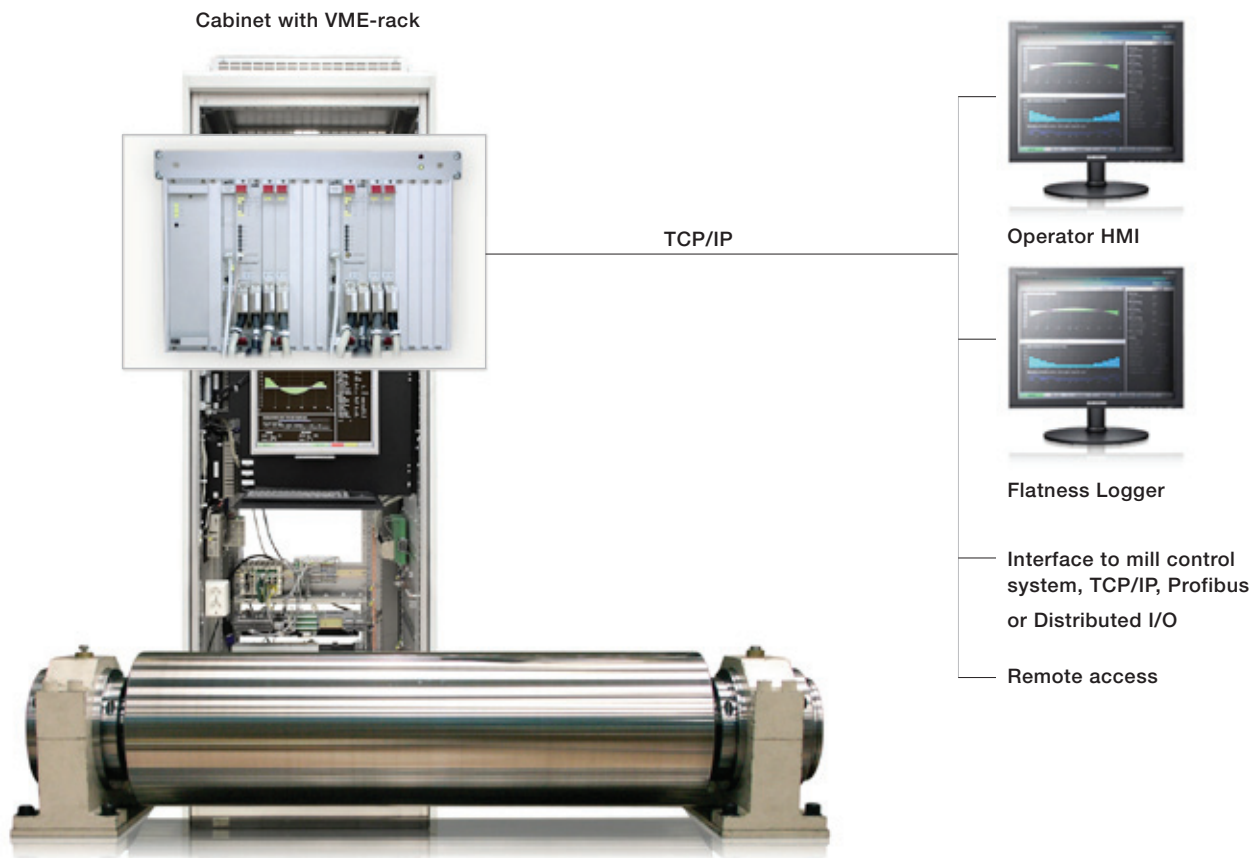


Upgrade of temper mill brings better flatness performance and elongation control at Tata Steel UK, Port Talbot



In December, 2009, Tata Steel Strip Products UK, Port Talbot Works submitted an enquiry to ABB for upgrading the existing flatness measurement and control automation system on a CAPL four high temper mill. This was required by Tata due to existing hardware obsolescence issues and improvements required in flatness performance to satisfy their customers' needs.



1. Stressometer flatness control system topology

ABB's scope of supply

ABB's solution includes the following:

- Automation system level 1 hardware for elongation and flatness control including:
 - AC 800 PEC controller including cubicle
 - I/Os including cubicle for coupling to existing transducers and control elements
 - Communication gateway PC including embedded board communication for communication with reflective memory
 - Laser equipment for speed measurement and thus elongation control
 - Ethernet TCP/IP interface for communication with ABB Stressometer flatness control system
 - Power supply for above items
 - Temponsonic linear position transducers
 - Stressometer upgrade 4.0 to 7.0.
- Automation system engineering and commissioning for elongation and flatness control including:
 - Roll gap control HGC via capsules
 - WR bending pressure control
 - Elongation control on HGC and tension
 - Flatness control via tilting and work roll bending via signals from the Stressometer control system
 - Ethernet TCP/IP interface for communication between AC800 PEC and communication gateway PC
 - Application software in communication gateway PC for communication between PC and reflective memory in existing Alspa system.

ABB solutions

ABB solutions feature the following:

- New modern hardware that prolongs the life of the mill.
- Upgrade of ABB Stressometer from 4.0 to 7.0, which provides optimal flatness performance.
- State-of-the-art control system that gives substantially improved variation during elongation.

Customer benefits

Improvements after the upgrade include:

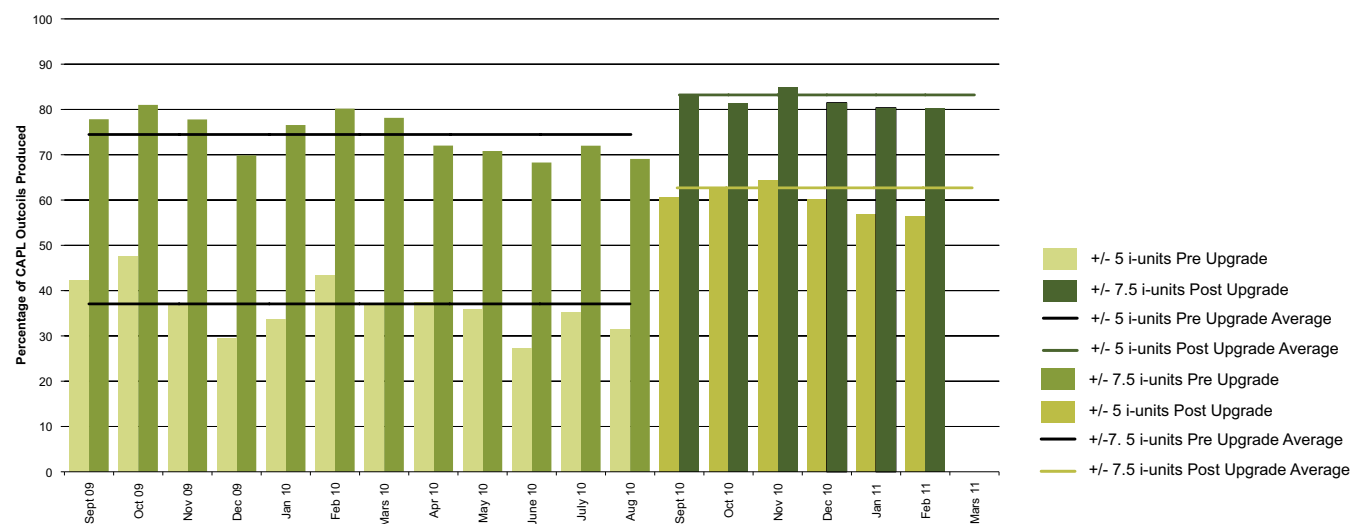
- A step improvement in percentage coils that meets shape criteria. The graph in Fig. 2 shows a step improvement in percentage of coils produced under both +/- 5 l-units and +/- 7 l-units in both pre and post upgrade.
- Improved variation during the elongation. The graphs in Fig. 3 and 4 show an elongation trace before and after the upgrade (same width and gauge).
- Improved life of the mill due to the new hardware that is installed.
- A platform to potentially upgrade the remaining exit section control.

Cooperation

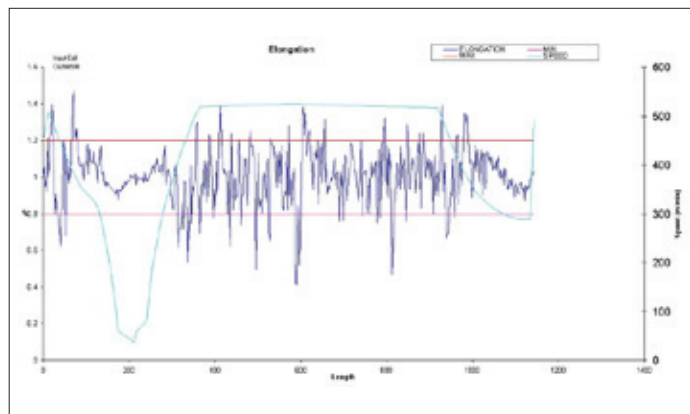
The upgrade project was completed successfully due to the very close cooperation between ABB and Tata Steel Strip Products UK at Port Talbot Works.

"There was good cooperation between the parties, ABB and Tata Steel UK, Port Talbot Works, with each party accommodating each others requirements," says Carl Banfield, Area Electrical Engineer, Tata Steel Strip Products UK, at Port Talbot Works. "The perception from Tata is that ABB enjoyed working with the Tata engineers involved in the project. The Tata engineers certainly enjoyed working alongside ABB."

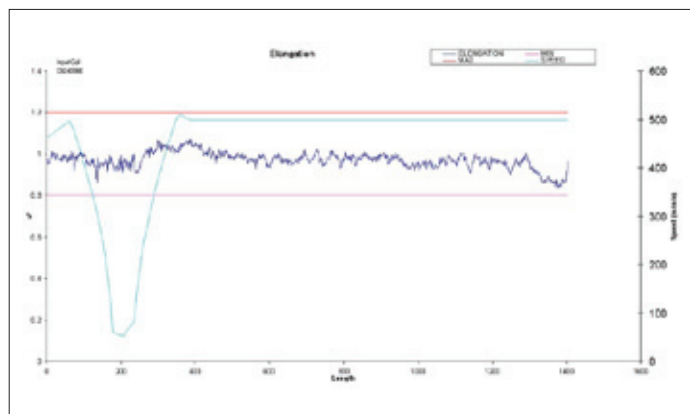
Percentage Coils Meeting Flatness Criteria 100%



2. A step improvement in percentage of coils



3. An elongation trace prior to the upgrade



4. An elongation trace after the upgrade (same width and gauge)

Facts about Tata Steel UK and Port Talbot Works

Corus was acquired by India's Tata Steel for \$12bn (£6bn) in 2007, and today Tata Steel UK is Europe's second largest steel producer. The plant supplies steel for construction, car manufacturing, packaging and mechanical engineering across the globe.

Tata Steel Strip Products UK, Port Talbot Works is an integrated steel production plant in Port Talbot, South Wales, and is capable of producing nearly 5 million metric tons of steel slab per annum. The majority of the slab is rolled on-site at Port Talbot and at the Newport Llanwern site to make a variety of steel strip products. The remainder is processed at other Tata Steel plants or sold in slab form.

Additions to Port Talbot Works include the continuous annealing processing line in 1998, caster 3 in 2005 and heavy-end developments from 2003-2006.

Today, 3600 employees produce some 4.7 million metric tons of steel a year, roll about 3 million of it themselves and send the rest to Llanwern to roll.

"There was good co-operation between the parties, ABB and Tata UK, with each party accommodating each other's requirements," says Carl Banfield, Area Electrical Engineer, Tata Steel Strip Products UK, Port Talbot Works.

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