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# Steel maker improves roller table reliability with AC drives

A steel maker is improving the reliability of its roller table by retrofitting four ABB variable-speed drives (VSDs).

The roller table has 80 rollers to transport finished steel billets at Celsa Manufacturing's plant in Cardiff. Each drive controls four banks of 20 roller motors.

Celsa's existing roller table drives were obsolete as the company's electrical engineer, Nicholas Drane, explains: "The existing drives could not be interrogated to discover what they are doing or what condition they are in. It was also getting difficult to source spares for them.

"We had tried using another manufacturer's drives to replace them but these needed extra components such as RC filters and braking resistors and we never managed to make them work in the way we wanted. This led to a lot of lost production which, as a 24/7 operation, we cannot afford." Celsa had previously worked with ABB authorised value provider, APDS, and already uses ABB's DC drives on site.

As a trial, APDS installed an ABB general purpose drive, ACS550. "We were keen to know that the solution worked before we made major changes to the cabling," says Drane. "APDS installed a drive as a temporary measure. Once we were satisfied, APDS installed the permanent drive over the shutdown period so there was no disruption."

"Although the main objective of the project was not energy saving, we estimate that Celsa will be saving in the region of 30 percent on its energy costs for this drive," says Doug Pitt of APDS.

"All the motors are connected to the drive using scalar control," says Pitt. "Some drives do not like the inductance imbalance that goes with trying to control so many motors, but with the ABB drive, we simply size it for 20 motors and there is no need for a filter."

The 125 A ABB drive used on the application incorporates a swinging choke to reduce the effects of harmonics. It also employs ABB flux optimisation feature, making it more efficient than the previous drive. "Having tried another drive with little success, the customer had doubts about the solution," says Pitt. "We were happy to prove the drive at our cost and it worked first time."

"The ABB drive does the same job but in a more compact package, with fewer components," says Drane. "We have also bought a spare drive so if we do need to replace it we can do so quickly without delay. It is far more user friendly.

"We can also interrogate the drive via DriveWindow Light – if anything goes wrong, we can download the data files to the drive to get it back to the original parameter settings. Although we have not performed any data logging yet, we know the drive can do this and we are very keen to use this feature to monitor our energy use."

The ABB drive is the first of a total of four planned for the roller bed, with every shutdown seeing another added.

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**Caption:** Celsa Manufacturing improves roller table reliability with ABB variable-speed drives.

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**For more information please contact:**  
**Layla Hewitt**  
**Marketing Communications**  
Phone: 01925 741517  
Email: [layla.hewitt@gb.abb.com](mailto:layla.hewitt@gb.abb.com)

**ABB Ltd.**  
Daresbury Park  
Daresbury  
Warrington WA4 4BT

**Emma Jenkinson**  
**Armitage Communications**  
Phone 020 8667 2218  
Email: [emma.jenkinson@armitage-comms.co.uk](mailto:emma.jenkinson@armitage-comms.co.uk)