

TATA Steel UK

launches new grade of steel for wheels

Understanding customers' needs has led to TATA Steel developing and launching a new grade of steel designed to improve the manufacture of tractor wheels and other large off-road vehicles. Using lessons learned from the development of safety-critical steel for the rail and oil industries, TATA Steel was able to apply a similar solution to the steel needed for wheel rim manufacturers.

The new steel grade, called DD13WR, allows manufacturers to form, flash weld and cold roll the steel with less chance of splitting and rim failure.

Mr. Phil Clements, Sales Director of the Lifting and Excavating sector for TATA Steel said that "By working closely with customers we have been able to establish how we can help improve their products and reduce their manufacturing costs. This new steel grade is another example of how these relationships enable us to develop products which our customers need."

Typically, the wheel rim manufacturing process includes a number of steps which puts high stresses on the steel during production. The failure of welds and splitting result in an increased need for manual inspection and either significant reworking to remove the defect or scrapping of the whole wheel.

Scientists at TATA Steel realized defects seen during tractor wheel manufacture were similar to those seen by the company in both rail flash-butt welds and tube HFI (High Frequency Induction) fusion welding. TATA Steel was able to use its experience and expertise in these other product areas and apply what it had learnt.

Samples of weld failures were received from numerous tractor wheel manufacturing sites across Europe and analysed at TATA Steel's R&D centre in the UK. The solution was to create a new grade which features a cleaner, more tightly controlled chemistry. The focus of the product development was on improving welding performance through optimising the chemistry, including reducing the sulphur levels to improve the formability after welding, significantly reducing splitting failures and rejections.

The new grade will be made at TATA Steel's Port Talbot plant in South Wales and supplied in either coil form or processed plate via TATA Steel's distribution facilities in the UK and mainland Europe.

CDI facility at Rourkela Steel Plant



Coal Dust Injection (CDI) system was operationalized in Blast Furnace-4 of Rourkela Steel Plant recently. This latest operational facility will result in improvement of techno economic parameters and enhance productivity of hot metal in the Blast Furnace.

CDI of Blast Furnace -4 has a design capacity of injection up to 100 Kg/Ton of hot metal, which will result in financial saving of approximately Rs 30 Crore per annum. Through CDI, the pulverized coal injection (PCI) facilitates consumption of cheaper coal in the system replacing the expensive coke thereby cutting down on cost. The facility will augment the efficiency and raw material optimization by facilitating direct consumption of coal and reducing coke rate. CDI facility in BF-4 is a capital scheme which has been integrated with the ongoing expansion programme of the Steel Plant as a part of the massive modernization and expansion drive undertaken by SAIL.

Chairman, SAIL Mr. CS Verma said, this energy efficient facility will enhance the productivity of blast furnace along with reducing the coke rate resulting in profit for the Plant.

Earlier in April 2014, CDI facility was operationalized at BF - 5 of the steel Plant. It is a major energy conservation initiative undertaken by the Steel Plant. Almost all the new facilities under the expansion schemes at RSP have been completed and made operational. The benefits out of these have started accruing.

Pulverized coal injection is an essential tool for the improving Blast Furnace process parameters and Furnace profitability. PCI is a process that involves blowing large volumes of fine coal granules into the Blast Furnace. This provides a supplemental carbon source to speed up the production of metallic iron, reducing the need for coke production. As a result energy use and emissions can be reduced. This helps in substantial reduction of coke consumption in the Blast Furnace. Coal being a costly and vital industrial input for steel making, an alternative and energy efficient technology like CDI is proving beneficial for the industry.