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Non – Destructive Evaluation of Rolls of Hot Strip Mill of Tata Steel

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Abstract

Performance of rolls in an Integrated Steel Plant like Tata Steel affects many plant performance measures i.e. mills down time (which affects plant productivity), rejection of rolled products, roll dressing time, consumption of rolls / ton of steel rolled etc. In order to ensure the supply of the rolls without harmful flaws, NDT techniques, particularly Ultrasonic and Eddy Current, were developed and implemented on the shop floor to improve the plant performance by reducing their failure in the mill. Indefinite Chilled Cast Iron Double Poured Work Rolls of finishing stands, High Chrome Iron as well as Chrome Steel Work Rolls of early finishing and roughing stand were evaluated for their shell / core disbond as well as surface cracks using these techniques. High Speed Steel rolls under trial in the finishing stand F2 were also evaluated for their surface cracks using an eddy current inspection method developed at R&D Division of Tata Steel..