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PAISAN VISITVATTANAKUL : SIMULATION OF EFFECT OF ROLL ECCENTRICITY ON ROLLED MATERIAL THICKNESS THESIS ADVISOR : PRASONK SRICHAROENCHAI, 93 pp. ISBN 974 – 17 – 0109 - 8

Roll eccentricity is a cause of roll gap variation which affects rolled material thickness. Roll eccentricity is observed in a mill stand by recording variations of thickness and roll force. During rolling, exit thickness and roll force changes are affected by changes of raw material thickness as well as by variations of strip tension. However, the main frequency of thickness change depends on the frequency of the rotation of work rolls. Rolled material thickness variation due to roll eccentricity is sinusoidal and its maximum amplitude is less than magnitude of roll eccentricity. Maximum magnitude of thickness change also depends on magnitude of roll eccentricity. Roll eccentricity at stand no.1 of a 5-stand tandem mill has a major effect on periodic variations of exit gauge, whereas effect of roll eccentricity at other stands is insignificant. Roll eccentricity that exists at both stand no. 1 and 2 makes thickness change at each stand is not sinusoidal.

In this paper, method of roll eccentricity compensation is roll gap control. This method involves the detection of roll force change and roll gap adjustment. When roll force is changed due to roll eccentricity, roll gap is adjusted and magnitude of adjusted roll gap depends on magnitude of roll force change. This method can compensate effect of roll eccentricity effectively.