

ACCURATE CUTTING OF SLAB BY USING INFRARED BASED LENGTH CONTROL SYSTEM IN STEEL PLANT

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Abstract

The paper describes the development of low cost, infrared based slab length measuring cum control system for reducing the wastage of high quality costly steel in caster of Bhilai steel plant. A single sensor measures the slab length ranging from 5.5 m to 10.5m. Earlier number of length measuring systems such as contact type, shaft encoder, photosensor were tried but could not cut the bloom at desired length because of slippage, decaying of roll diameter and needs continuous calibration, generation of sparkles during cutting and influence due to variation in luminosity of metal . Infra red waves are not harmful to eyes as Laser wave. The error in cutting is reduced from + / -(100) mm to 0 to + 20 mm. The cost of installed system is only Rs 15000/- with a pay back is less than a shift and annually monetary gain is ₹ Rs 5 crores. (US \$ 1m)

Keywords: Infrared sensor, Reliability, Accuracy, Safety, Productivity