Analysis of the Strip Shape and Microstructure with Consideration of Roll Crossing and Shifting

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Abstract : Optimisation of the physical and mechanical properties of cold rolled thin strips is achieved by controlling the rolling parameters. In this paper, the factors affecting the asymmetrical cold rolling of thin low carbon steel strip have been studied at a speed ratio of 1.1 without lubricant applied. The effect of rolling parameters on the resulting microstructure was also investigated. It was found that under dry condition, work roll shifting and work roll cross angle can improve the strip profile, and the result is more significant with an increase of work roll cross angle rather than that of work roll shifting. However, there was no obvious change in microstructure. In addition, effects of rolling parameters on strip profile and microstructure have also been discussed.

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Keywords : rolling speed ratio, microstructure, work roll cross angle, work roll shifting

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