Development of Asymmetric Multipass Spinning Method for Oblique Cylindrical Shape

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In previous studies, an asymmetric product is formed by shear spinning. The wall of the product couldn't be perpendicular to the bottom since the thickness of the wall would reduce to zero in shear spinning. In order to break through the limitation and form an oblique cylindrical shape, an asymmetric multipass spinning method combing conventional spinning with asymmetric spinning was developed in this research. The roller trajectory of asymmetric multipass spinning is deduced. The thickness variation is discussed by analyzing the movement of the roller. The thickness distribution and the surface quality with different experiment parameters are discussed. It indicates that a smaller roller feed rate *f* and a smaller incremental angle $\Delta\alpha$ can improve the surface quality.

Keywords: Metal spinning, Preforming, Asymmetric Spinning, Roller Pass Design

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