

Development of Processing Parameters in Ambient and Cryogenic Rolling Conditions

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The laboratory rolling of steel in cryogenic and ambient conditions is discussed. The both ways of material processing from point of view geometrical characteristics of rolling gap as rolls flattening, length of contact arc. The geometrical characteristics of rolling gap are described by calculation of non deformed and deformed contact arc length according to the Hertz's and Hitchcock's formula. On the base of measurement data was derived equation for recalculation of deformed contact arc length for ambient and cryogenic temperatures from Hitchcock's data to Hertz's data, equation for calculation deformed contact arc length on the relative thickness reduction for ambient and cryogenic temperatures.

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