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Cold Rolled Steel Sheets with Ultra High Lankford Value and Excellent Press Formability

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Synopsis :

It is well known at the laboratory scale experiments that lubricated ferrite rolling in hot-rolling is effective in developing {111} texture. In order to apply this metallurgical principle to an industrial scale mill, Kawasaki Steel developed an endless hot-rolling process at Chiba Works, making it possible to employ heavily lubricated hot-rolling over the full length of hot bands with stable operation. With the application of hot band having {111} texture obtained in this manner, an extremely high Lankford value ( r-value) of 3.0 is achieved after cold-rolling and annealing. The newly developed steel sheet shows excellent drawability compared with that of conventional EDDQ steels. The new steel is expected to be applied mainly in automotive parts which are subjected to complex and heavy press deformation.

## Cold Rolled Steel Sheets with Ultra High Lankford Value and Excellent Press Formability



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### 要旨

熱間圧延でのフェライト域潤滑圧延が {111} 集合組織の発達に効果的であることは研究室規模ではよく知られている。この冶金的原理を工業的段階で実現させるために、川崎製鉄は千葉製鉄所でエンドレス熱間圧延技術を初めて確立し、フェライト域でストリップ全長に渡り十分な潤滑を安定して施して熱間圧延することに成功した。この技術により得られる熱間圧延母板から冷間圧延された鋼板は、焼鈍後に極めて高いランクフォード値 ( $r$  値) を示す。今回開発した超高ランク鋼板は、極めて良好なプレス成形性を有する。



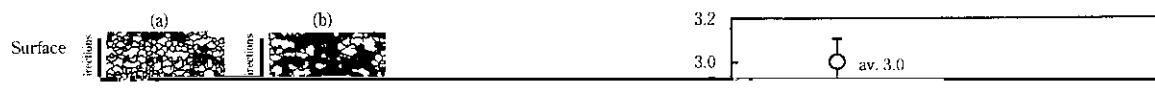




Figure 10. Schematic diagram of a mechanical component.

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