KAWASAKI STEEL TECHNICAL REPORT No. 39 October 1998

History and Recent Development of Non-Oriented Electrical Steel in Kawasaki Steel*

Synopsis:

period when the strip mill at the plate works of try and high Si products for large rotating machinery

Kawasaki Dockyard Co. Ltd. (later renamed Fukiai were developed. The 1960s saw remarkable growth in

punchability, P Coat,[2] which is advantageous for punch-

low iron loss as well as to reduced size, stress relief

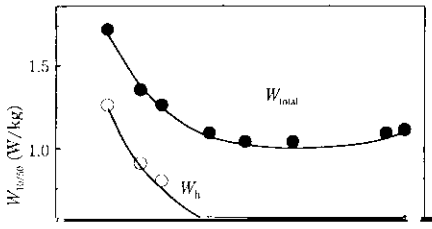
bility by adding an organic resin, were developed. In

material which simultaneously provides both high induc-

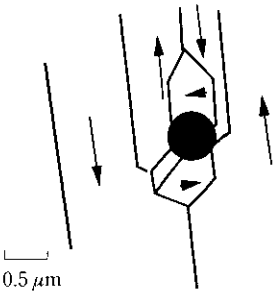
3 Recent Progress in Non-Oriented Electrical Steel

3.1 Factors Influencing Magnetic Properties

Various properties are required in non-oriented electrical steel, depending on the application. Among these,



Electrical microscopic photograph
(Lorenz method)



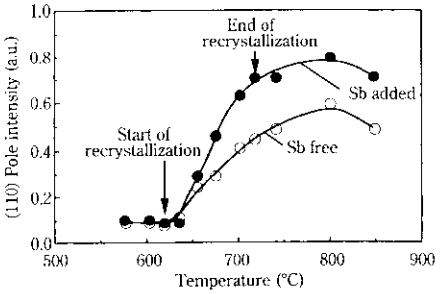


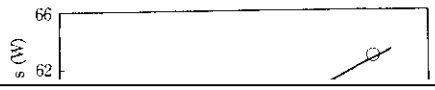
Fig. 7 Change in (110) pole intensities during

form (100) [0 vw] texture with no anisotropy, or the so-called isotropic texture, is ideal. On the other hand, for

The Si content decreases in the order RP1, RP2, RP3. The best grade RP-1H, which displays the highest

lated and organized data on the properties of these respective coatings so as to be useful in the optimum selection by the customer.

properties suited to the customer's processing methods, for example, ensuring punchability and punching accu-



and others.

In the future, the applications of electrical steel sheets will become more diverse, and from the viewpoint of energy conservation, higher efficiency will be required not only in generators and other large equipment, but

7) K. Matsumura, B. Fukuda, K. Kinoshita, T. Imai, Y. Obata, and S. Miyazaki: *Kawasaki Steel Giho*, **15**(1983)3, 208
8) Kawasaki Steel Corp.: U.S. Patent 4 204 890
9) Kawasaki Steel Corp.: U.S. Patent 4 293 336
10) T. Irie, K. Matsumura, Y. Shono, H. Nakamura, and H.