Title (en)

Non-oriented electrical steel sheet having a low watt loss and a high magnetic flux density and a process for producing the same.

Title (de)

Nicht-kornorientiertes Elektroblech mit niedrigen Wattverlusten und hoher Magnetflussdichte und Verfahren zu seiner Herstellung.

Title (fr)

TÔle magnétique non-orientée à pertes de watt peu élevées et présentant une densité de flux magnétique élevée, ainsi que procédé pour sa fabrication.

Publication

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Application

EP 83300393 A 19830126

Priority

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Abstract (en)

In the production of non-oriented electrical steel sheets, it has been attempted to decrese the watt loss, e.g. by adding Sn into silicon steels, but in such a case the relationship between the watt loss and magnetic flux density falls within the curves 1 and 1 min in Fig. 1. The addition of boron is therefore unsatisfactory for meeting the recent demands, for improving the magnetic properties of a non-oriented electrical steel sheet over those indicated by the curve 3. In the present invention, the combined addition Sn with B and/or sol. Al results in development of (110) and (100) textures which are desirable for the magnetic properties. A non-oriented electrical steel sheet according to the present invention, contains 0.015% of C at the highest, from 0.3 to 2.0% of Si, from 0.005 to 0.10% of sol. Al, from 0.02% to 0.20% of Sn, 0.007% of N at the highest, and 0.005% of B at the highest, the weight ratio of B content/N content being from 0.5 to 1.5, said non-oriented electrical sheet being produced by a process comprising an annealing of a hot-rolled steel strip. Instead of B, an appreciable amount of sol. Al may be contained in said sheet, when Mn content is from more than 1.0% to 1.5%.

IPC 1-7

C22C 38/02; C21D 8/12; H01F 1/16

IPC 8 full level

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