

Title (en)
GRAIN ORIENTED STEEL STRIP WITH HIGH MAGNETIC CHARACTERISTICS, AND MANUFACTURING PROCESS OF THE SAME

Title (de)
KORNORIENTIERTER BANDSTAHL MIT HOCHMAGNETISCHEN EIGENSCHAFTEN UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)
BANDE D'ACIER À GRAINS ORIENTÉS DOTÉE DE CARACTÉRISTIQUES MAGNÉTIQUES ÉLEVÉES ET SON PROCÉDÉ DE FABRICATION

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Application
EP 11717012 A 20110318

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Abstract (en)
[origin: WO2011114178A1] A method for the production of hot-rolled steel strip comprising the following steps : - providing a steel slab comprising, in weight percentages : Si : 2.5 to 3.5 %, C : 0.05 to 0.1 %, Mn : 0.05 to 0.1 %, Als : 0.015 to 0.026 %, N : 0.0050 to 0.0100 %, and further comprising S and/or Se so that S+ (32/79) Se is in an amount of 0.018 to 0.030 %, and optionally comprising one or more elements chosen among Sb in an amount of 0.015 to 0.035 %, Cu in an amount of 0.08 % to 0.25 %, Sn in an amount of 0.06 % to 0.15 %, P in an amount of 0.005 % to 0.015 %, the balance being iron and unavoidable impurities, - reheating said slab to a temperature between 1300°C and 1430°C, - roughing hot-rolling said slab to produce a blank having a thickness below 50 mm, - finishing hot-rolling of said blank to produce a hot rolled strip in three rolling passes or more, the temperature of said blank during the first pass being above 1150°C and at least one rolling pass being performed with a reduction of 40 % or more and being immediately followed by a holding of more than 20 sec at an average interpass holding temperature T_{av} settled between 1000 and 1200°C, the total finishing hot rolling time t being controlled so that the value of T_{av} for any portion of said strip further respects the under mentioned equation : $T_{av} > T_1 + a_1(t-78)$ [eq1] with $T_1 = 992.2 + 1493(Als)$ and $a_1 = 1.204 + 24.9(Als)$, T_{av} and T_1 being expressed in °C, t in seconds and Als in weight %, - cooling of said hot-rolled strip from the finish rolling temperature to a temperature below 600°C in less than 10 sec and - coiling of said hot-rolled strip.

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