

Title (en)

NON-ORIENTED ELECTRIC STEEL PLATE WITHOUT CORRUGATED FAULT AND PRODUCTION METHOD THEREOF

Title (de)

NICHTORIENTIERTE ELEKTRISCHE STAHLPLATTE OHNE WELLUNGSFEHLER UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

TÔLE D'ACIER ÉLECTRIQUE NON ORIENTÉE EXEMPTÉ DE DÉFAUT D'ONDULATION ET SON PROCÉDÉ DE PRODUCTION

Publication

**EP 2623626 A1 20130807 (EN)**

Application

**EP 11827949 A 20110414**

Priority

- CN 201010298965 A 20100930
- CN 2011072766 W 20110414

Abstract (en)

A non-oriented electrical steel sheet without corrugated defect and a manufacturing method thereof is provided, the weight percentage of the chemical composition of the non-oriented electrical steel sheet is that C is no more than 0.005%, Si is 1.2-2.2%, Mn is 0.2-0.4%, P is no more than 0.2%, S is no more than 0.005%, Al is 0.2-0.6%, N is no more than 0.005%, O is no more than 0.005%, and a balance substantially being Fe, a slab can be obtained by hot metal preprocessing, smelting with converter, RH refining, and continuous casting and pouring, wherein a secondary cooling water amount is controlled, the water flowrate of cooling water is controlled to 100-190 l/min, the average superheat of liquid steel in the continuous casting process is controlled to 10-45 °C, the slab is heated and hot rolled; wherein the furnace tap temperature of the slab is 1050-1150 °C, the temperature difference between random two points in the length direction when the slab is heated, is lower than 25 °C, the hot rolling process includes a rough rolling process and a planishing process, the entry temperature in the planishing process is no lower than 970 °C; the finished non-oriented electrical steel sheet is obtained by acid pickling, cold rolling, annealing and coating. No corrugated defect can be accomplished by controlling the cooling speed of the slab in continuous casting and pouring process, the temperature difference in the length direction of the slab in the heating furnace, and by controlling the temperature drop before planishing the slab.

IPC 8 full level

**C21D 8/02** (2006.01); **C21D 8/12** (2006.01); **C22C 38/06** (2006.01)

CPC (source: EP US)

**B22D 11/182** (2013.01 - EP US); **B22D 11/225** (2013.01 - EP US); **B22D 25/00** (2013.01 - US); **C21D 6/008** (2013.01 - EP US); **C21D 8/12** (2013.01 - EP US); **C21D 8/1205** (2013.01 - EP US); **C21D 8/1222** (2013.01 - EP US); **C21D 8/1233** (2013.01 - EP US); **C21D 8/1272** (2013.01 - EP US); **C21D 8/1277** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/004** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **H01F 1/16** (2013.01 - EP US); **C21D 2201/05** (2013.01 - EP US)

Cited by

EP3272898A4; EP2824192A4; US10844451B2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

**EP 2623626 A1 20130807**; **EP 2623626 A4 20171122**; **EP 2623626 B1 20191120**; CN 102443734 A 20120509; CN 102443734 B 20130619; JP 2013540900 A 20131107; KR 20130049822 A 20130514; MX 2013003261 A 20130501; MX 357357 B 20180705; RU 2013114859 A 20141110; RU 2550440 C2 20150510; US 2013224064 A1 20130829; WO 2012041053 A1 20120405

DOCDB simple family (application)

**EP 11827949 A 20110414**; CN 201010298965 A 20100930; CN 2011072766 W 20110414; JP 2013530533 A 20110414; KR 20137008046 A 20110414; MX 2013003261 A 20110414; RU 2013114859 A 20110414; US 201113823311 A 20110414