

Title (en)
HOT-ROLLED FLAT STEEL PRODUCT AND METHOD FOR THE PRODUCTION THEREOF

Title (de)
WARMGEWALZTES STAHLFLACHPRODUKT UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)
PRODUIT PLAT EN ACIER LAMINÉ À CHAUD ET SON PROCÉDÉ DE FABRICATION

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Application
EP 17821500 A 20171206

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Abstract (en)
[origin: WO2018108653A1] The invention relates to a hot-rolled flat steel product having a larger sheet thickness and an optimized combination of properties. For this purpose, the flat steel product consists of a steel having (in wt%) C: 0.1 – 0.3%, Mn: 1.5 – 3.0%, Si: 0.5 – 1.8%, Al: ≤ 1.5%, P: ≤ 0.1%, S: ≤ 0.03%, N: ≤ 0.008%, optionally one or more elements of the group "Cr, Mo, Ni, Nb, Ti, V, B" with the following concentration: Cr: 0.1 - 0.3%, Mo: 0.05 - 0.25%, Ni: 0.05 - 2.0%, Nb: 0.01 - 0.06%, Ti: 0.02 - 0.07%, V: 0.1 - 0.3%, B: 0.0008 - 0.0020%, the remainder iron and unavoidable production-related impurities. The flat steel product has a tensile strength R_m of 800 - 1500 MPa, a yield strength R_p of more than 700 MPa, an elongation at break A of 7 - 25% and a hole expansion λ of more than 20%. Furthermore, the microstructure of the flat steel product consists of at least 85 area % martensite, at least half of which is tempered martensite, wherein the remainder of the microstructure consists of ≤ 15 vol% retained austenite, ≤ 15 area % bainite, ≤ 15 area % polygonal ferrite, ≤ 5 area % cementite and/or of ≤ 5 area % non-polygonal ferrite, wherein the microstructure of the flat steel product has a kernel average misorientation "KAM" of at least 1.50°. The invention further relates to a method for producing a flat steel product according to the invention, wherein the microstructure characteristics of the flat steel product according to the invention are set by means of a suitable heat treatment.

IPC 8 full level
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