

Title (en)

HOT-ROLLED FLAT STEEL PRODUCT CONSISTING OF A COMPLEX-PHASE STEEL HAVING A PREDOMINANTLY BAINITIC MICROSTRUCTURE AND METHOD FOR PRODUCING SUCH A FLAT STEEL PRODUCT

Title (de)

WARMGEWALZTES STAHLFLACHPRODUKT BESTEHEND AUS EINEM KOMPLEXPHASENSTAHL MIT ÜBERWIEGEND BAINITISCHEM GEFÜGE UND VERFAHREN ZUR HERSTELLUNG EINES SOLCHEN STAHLFLACHPRODUKTS

Title (fr)

PRODUIT PLAT EN ACIER LAMINÉ À CHAUD CONSTITUÉ D'UN ACIER À PHASE COMPLEXE AYANT UNE STRUCTURE ESSENTIELLEMENT BAINITIQUE ET PROCÉDÉ POUR FABRIQUER UN TEL PRODUIT PLAT EN ACIER

Publication

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Application

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Abstract (en)

[origin: WO2018134186A1] The invention relates to a hot-rolled, economically alloyed flat steel product having minimized edge-crack sensitivity characterized by a hole expansion of at least 60%, good welding suitability, a yield strength Rp0.2 of at least 660 MPa, a tensile strength Rm of at least 760 MPa, and an elongation at break A80 of at least 10%. The flat steel product is produced from a complex-phase steel, which consists of (in wt%) C: 0.01-0.1%, Si: 0.1-0.45%, Mn: 1-2.5%, Al: 0.005-0.05%, Cr: 0.5-1%, Mo: 0.05-0.15%, Nb: 0.01-0.1%, Ti: 0.05-0.2%, N: 0.001-0.009%, P: < 0.02%, S: < 0.005%, Cu: < 0.1%, Mg: < 0.0005%, O: < 0.01%, optionally one or more elements from the group "Ni, B, V, Ca, Zr, Ta, W, REM, Co" with the stipulation Ni: < 1%, B: < 0.005%, V: < 0.3%, Ca: 0.0005-0.005%, Zr, Ta, W: in total < 2%, REM: 0.0005-0.05%, Co: < 1%, and iron and unavoidable impurities as the remainder, wherein the following applies to the contents %Ti, %Nb, %N, %C, %S of Ti, Nb, N, C, and S in the complex-phase steel: (1) %Ti > (48/14) %N + (48/32) %S (2) %Nb < (93/12) %C + (45/14) %N + (45/32) %S, and wherein the microstructure of the flat steel product consists (in area %) of ≥ 80% bainite, < 15% ferrite, < 15% martensite, < 5% cementite, and < 5 vol% residual austenite. The invention further relates to a method for producing such a flat steel product.

IPC 8 full level

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