

Title (en)

STEEL, HOT-ROLLED FLAT STEEL PRODUKT, AND MANUFACTURING METHOD OF THE PRODUCT

Title (de)

STAHL, AUS EINEM SOLCHEN STAHL WARMGEWALZTES STAHLFLACHPRODUKT UND VERFAHREN ZU DESSEN HERSTELLUNG

Title (fr)

ACIER, PRODUIT PLAT LAMINÉ À CHAUD, ET PROCÉDÉ DE FABRICATION DE CE PRODUIT

Publication

**EP 3347500 A1 20180718 (DE)**

Application

**EP 15763888 A 20150911**

Priority

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Abstract (en)

[origin: WO2017041862A1] The invention relates to a steel, a flat steel product produced therefrom and a method for producing flat steel products of this type, which allow products to be produced having an optimum combination of toughness and durability for use in the areas of farming, forestry and similar applications. The steel according to the invention consists of (in wt.%) C: 0.4-0.7%, Si: 0.15-0.5%, Mn: 0.8-2.0%, Cr: 0.3-1.0%, wherein the Cr content %Cr fulfils each of the following conditions:  $\%Cr \geq (\%Ni + \%Si + \%Mn + \%S + \%Al)/5$ , with %Ni: Ni content, %Si: Si content, %Mn: Mn content, %S: S content and %Al: Al content of the steel, N: 0.0015-0.0100%, Ni: 0.04-2%, Ti: 0.005-0.1%, V: 0.0080-0.1%, B: 0.0005-0.0040%, Ca: 0.0005-0.004%, P:  $\leq 0.03\%$ , S:  $\leq 0.005\%$ , Al:  $< 0.05\%$ , Cu:  $< 0.1\%$ , Nb:  $< 0.004\%$ , H:  $< 0.0001\%$ , O:  $< 0.005\%$ , and optionally Mo: 0.006-0.02%, the remainder being iron and unavoidable impurities. In order to produce a flat steel product, according to the invention a steel melt alloyed in this way is cast into a preliminary product, which is heated to a pre-heating temperature of 1150-1300 °C and is hot rolled at a starting temperature of 900-1150 °C and an end temperature of 780 - 880 °C. The obtained hot-rolled strip is cooled at 2-50 °C/s to 550-680 °C and then wound to form a solid coil, which is cooled at 4.5-14.5 °C/h in the coil centre to  $\leq 100$  °C, and then cooled to room temperature by stationary air.

IPC 8 full level

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