

Title (en)

FLAT STEEL PRODUCT AND METHOD FOR MANUFACTURING

Title (de)

STAHLFLACHPRODUKT UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)

PLAT PRODUIT EN ACIER ET MÉTHODE DE FABRICATION

Publication

**EP 3405593 A1 20181128 (DE)**

Application

**EP 16701442 A 20160120**

Priority

EP 2016051109 W 20160120

Abstract (en)

[origin: WO2017125147A1] The invention relates to a reliably producible flat steel product based on an Fe3Al alloy and a method permitting the production of flat steel products of this type. The flat steel product is produced from a steel that consists of (in wt.%) Al: 12-20 %, Ti: 0.2-2 %, B: 0.1-0.6 %, and optionally at least one element from the group "Cr, C, Mn, Si, Nb, Ta, W, Zr, V, Mo, Ni, Cu, Ca, SEM, Co" in the following amounts: N:  $\leq 0.1$  %; Cr:  $\leq 7$  %; C:  $\leq 0.15$  %; Mn:  $\leq 2$  %; Si: 0.05-5 %; Nb, Ta, W: in total  $\leq 0.2$  %; Zr:  $\leq 1$  %; V:  $\leq 1$  %; Mo:  $\leq 1$  %; Ni:  $\leq 2$  %; Cu:  $\leq 3$  %; Ca:  $\leq 0.015$  %; SEM:  $\leq 0.2$  %; Co:  $\leq 1$  %, the remainder being Fe and unavoidable impurities, wherein the impurities include  $\leq 0.03$  % S and  $\leq 0.1$  % P. Here, for the Ti content % Ti and B content % B of the steel, it is the case that  $0.33 \leq \%Ti/\%B \leq 3.75$ . At the same time, the structure of the flat steel products consists of 0.3-5 vol.% TiB<sub>2</sub> precipitations, which are embedded in a structure matrix comprising at least 80 vol.% Fe<sub>3</sub>Al. The method according to the invention proposes casting a steel melt comprising the stated composition to form an intermediate product in the form of a slab, thin slab or a cast strip, hot-rolling said intermediate product at 1000-1300°C and a final hot-rolling temperature of at least 850°C to form a hot-rolled strip and finally winding the obtained hot strip at a winding temperature between room temperature and 750°C.

IPC 8 full level

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CPC (source: EP US)

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Citation (search report)

See references of WO 2017125147A1

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**WO 2017125147 A1 20170727**; CN 108603257 A 20180928; CN 108603257 B 20210226; EP 3405593 A1 20181128; EP 3405593 B1 20200520; US 2019032161 A1 20190131

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