

Title (en)

STEEL PRODUCT MADE OF LIGHTWEIGHT STEEL CONTAINING MANGANESE AND METHOD FOR PRODUCTION THEREOF

Title (de)

STAHLPRODUKT AUS MANGANHALTIGEM LEICHTBAUSTAHL UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)

PRODUIT EN ACIER CONSTITUÉ D'ACIER LÉGER DE CONSTRUCTION CONTENANT DU MANGANÈSE, ET SON PROCÉDÉ DE FABRICATION

Publication

EP 3927862 A1 20211229 (DE)

Application

EP 20706253 A 20200220

Priority

- DE 102019104597 A 20190222
- EP 2020054536 W 20200220

Abstract (en)

[origin: WO2020169764A1] The invention relates to a steel product made of lightweight steel containing manganese, having a minimum notched bar impact work at -40 °C in the transverse direction of ≥ 20 Joules, preferably at least 30 Joules, having the following chemical composition in wt. %: C: 0.1 to 1.8, preferably 0.3 to 1.5; Mn: 15 to 35, preferably 20 to 30; Al: 6 to 12, preferably 7 to 10; Si: 0.2 to 1.5, preferably 0.5 to 1.2; Mo: 0.1 to 1.2, preferably 0.5 to 1.1; V: 0.05 to 0.5, preferably 0.07 to 0.3; Nb: 0.01 to 0.5, preferably 0.05 to 0.3; Cr: 0.05 to 3, preferably 0.1 to 2; Ni: 0.05 to 3, preferably 0.1 to 2; P: < 0.04 ; S: < 0.02 ; N: < 0.02 ; remainder iron, including unavoidable elements accompanying steel, together with the optional addition of one or more of the following elements: Ti, Cu, B, Co, W, Zr, Ca and Sn, having a joint consisting of at least 40 vol. % austenite, less than 60 vol. % ferrite, remainder martensite and/or carbides up to 2%, consisting of kappa carbides and/or vanadium carbides and/or niobium carbides and/or molybdenum carbides having a good combination of strength, distension and forming properties. The invention further relates to a method for producing a steel product in the form of a flat steel product made from the aforementioned lightweight steel containing manganese.

IPC 8 full level

C22C 38/44 (2006.01); **C21D 1/26** (2006.01); **C21D 6/00** (2006.01); **C21D 6/02** (2006.01); **C21D 8/02** (2006.01); **C21D 9/08** (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/06** (2006.01); **C22C 38/42** (2006.01); **C22C 38/46** (2006.01); **C22C 38/48** (2006.01); **C22C 38/50** (2006.01); **C22C 38/52** (2006.01); **C22C 38/54** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP)

C21D 1/26 (2013.01); **C21D 6/005** (2013.01); **C21D 8/0226** (2013.01); **C21D 8/0236** (2013.01); **C21D 8/0263** (2013.01); **C21D 8/0273** (2013.01); **C21D 9/08** (2013.01); **C21D 9/46** (2013.01); **C22C 38/001** (2013.01); **C22C 38/02** (2013.01); **C22C 38/06** (2013.01); **C22C 38/44** (2013.01); **C22C 38/46** (2013.01); **C22C 38/48** (2013.01); **C22C 38/58** (2013.01); **C21D 6/02** (2013.01); **C21D 2211/001** (2013.01); **C21D 2211/004** (2013.01); **C21D 2211/005** (2013.01); **C21D 2211/008** (2013.01); **C22C 38/002** (2013.01); **C22C 38/008** (2013.01); **C22C 38/42** (2013.01); **C22C 38/50** (2013.01); **C22C 38/52** (2013.01); **C22C 38/54** (2013.01)

Citation (search report)

See references of WO 2020169764A1

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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2020169764 A1 20200827; DE 102019104597 A1 20200827; EP 3927862 A1 20211229

DOCDB simple family (application)

EP 2020054536 W 20200220; DE 102019104597 A 20190222; EP 20706253 A 20200220