Title (en)

STEEL WITH REDUCED DENSITY AND METHOD FOR PRODUCING A STEEL FLAT OR LONG PRODUCT MADE FROM SUCH STEEL

Title (de)

STAHL MIT REDUZIERTER DICHTE UND VERFAHREN ZUR HERSTELLUNG EINES STAHLFLACH- ODER -LANGPRODUKTS AUS EINEM SOLCHEN STAHL

Title (fr)

ACIER A EPAISSEUR REDUITE ET PROCEDE DE FABRICATION D'UN PRODUIT ALLONGE OU PLAT EN ACIER A PARTIR D'UN TEL ACIER

Publication

**EP 3225702 B1 20200325 (DE)**

Application

**EP 16162652 A 20160329**

Priority

EP 16162652 A 20160329

Abstract (en)

[origin: WO2017167778A1] The invention relates to an iron-based reduced-density material, the mechanical properties of which make said material suitable for a broad range of applications, in particular in the automotive industry. For this purpose, the steel has a density of less than 7.25 kg/dm3 according to the invention and consists of (in wt%) C: up to 0.20%, Si: 0.1 - 3.50%, Mn: 0.1 - 3.50%, N: up to 0.020%, S: up to 0.40%, P: up to 0.009%, Al: 6.0 - 25.0%, Ti: 0.55 - 10.0%, Cr: up to 6.0%, Mo: up to 3.0%, Ni: up to 4.0%, V: up to 1.0%, W: up to 1.0%, Cu: up to 4%, B: up to 0.08%, Nb: up to 1.5%, the remainder iron and unavoidable production-related impurities. The microstructure of the steel has more than 85 vol% ferrite and up to 10 vol% austenite and, as the remainder, contents of intermetallic phases and fractions of carbide, nitride, bainite, or pearlite.

IPC 8 full level

**C21D 8/02** (2006.01); **C21D 9/46** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/08** (2006.01); **C22C 38/12** (2006.01); **C22C 38/14** (2006.01); **C22C 38/16** (2006.01); **C22C 38/18** (2006.01); **C22C 38/20** (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01); **C22C 38/26** (2006.01); **C22C 38/28** (2006.01); **C22C 38/32** (2006.01); **C22C 38/34** (2006.01); **C22C 38/38** (2006.01); **C22C 38/40** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP US)

**C21D 8/0226** (2013.01 - EP US); **C21D 8/0231** (2013.01 - EP US); **C21D 8/0263** (2013.01 - EP US); **C21D 9/46** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/08** (2013.01 - EP US); **C22C 38/12** (2013.01 - EP US); **C22C 38/14** (2013.01 - EP US); **C22C 38/16** (2013.01 - EP US); **C22C 38/18** (2013.01 - EP US); **C22C 38/20** (2013.01 - EP US); **C22C 38/22** (2013.01 - EP US); **C22C 38/24** (2013.01 - EP US); **C22C 38/26** (2013.01 - EP US); **C22C 38/28** (2013.01 - EP US); **C22C 38/32** (2013.01 - EP US); **C22C 38/34** (2013.01 - EP US); **C22C 38/38** (2013.01 - EP US); **C22C 38/40** (2013.01 - EP US); **C22C 38/42** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/46** (2013.01 - EP US); **C22C 38/48** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/54** (2013.01 - EP US); **C22C 38/58** (2013.01 - EP US); C21D 2211/001 (2013.01 - EP US); C21D 2211/005 (2013.01 - EP US)

Cited by

CN113718161A

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

DOCDB simple family (publication)

**EP 3225702 A1 20171004**; **EP 3225702 B1 20200325**; ES 2791887 T3 20201106; US 2019119771 A1 20190425; WO 2017167778 A1 20171005

DOCDB simple family (application)

**EP 16162652 A 20160329**; EP 2017057359 W 20170329; ES 16162652 T 20160329; US 201716089616 A 20170329