

Title (en)

STEEL, SOLID WHEEL, AND TIRE FOR RAIL VEHICLES AND METHOD FOR PRODUCING PARTS OF THIS TYPE

Title (de)

STAHL, VOLLRAD UND RADREIFEN FÜR SCHIENENFAHRZEUGE UND VERFAHREN ZUR HERSTELLUNG DERARTIGER BAUELEMENTE

Title (fr)

ACIER, ROUE MONOBLOC ET BANDAGE DE ROUE POUR VEHICULES FERROVIAIRES ET PROCEDE DE PRODUCTION DE CE TYPE D'ELEMENTS

Publication

**EP 1476586 A1 20041117 (DE)**

Application

**EP 03706505 A 20030214**

Priority

- DE 10208186 A 20020220
- EP 0301471 W 20030214

Abstract (en)

[origin: WO03070995A1] The invention relates to a steel material for producing parts, which are stressed while rolling, for rail vehicles. This steel material meets the high demands placed thereon when in use even when subjected to high thermal stress. This steel contains (in wt. %): C: 0.33 - 0.49 %, Si: 0.85 - 1.00 %, Mn: 0.25 - 0.40 %, Cr: 0.85 - 1.00 %, Mo: 0.10 - 0.20 %, Cu: ≤ 0.10 %, Ni: ≤ 0.10 %, P: ≤ 0.009 %, S: ≤ 0.005 % and optionally contains one or more alloy elements selected from the group consisting of: V: 0.06 - 0.10 %, Nb: 0.010 - 0.015 %, B: 0.0015 - 0.0030 %, Ti: ≤ 0.01 %, Al: 0.010 - 0.015 %, N: 0.005 - 0.010 %, whereby the remainder consists of iron and unavoidable impurities. The inventive method enables the production of rail wheels and similarly stressed parts from the inventive steels. These rail wheels and similarly stressed parts have a property distribution that is optimal for the stresses occurring when in use.

IPC 1-7

**C22C 38/00**; **C21D 1/667**; **C21D 9/34**

IPC 8 full level

**C21D 1/613** (2006.01); **C21D 1/667** (2006.01); **C21D 9/34** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/42** (2006.01); **C22C 38/44** (2006.01); **C22C 38/46** (2006.01)

CPC (source: EP)

**C21D 1/613** (2013.01); **C21D 1/667** (2013.01); **C21D 9/34** (2013.01); **C22C 38/02** (2013.01); **C22C 38/04** (2013.01); **C22C 38/42** (2013.01); **C22C 38/44** (2013.01); **C22C 38/46** (2013.01)

Citation (search report)

See references of WO 03070995A1

Cited by

CN110777238A; EP3342896A4; CN112322979A

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT SE SI SK TR

DOCDB simple family (publication)

**WO 03070995 A1 20030828**; AU 2003208852 A1 20030909; DE 10208186 A1 20030911; DE 10208186 C2 20031224; DE 50300911 D1 20050908; EP 1476586 A1 20041117; EP 1476586 B1 20050803; ES 2247519 T3 20060301; UA 80110 C2 20070827

DOCDB simple family (application)

**EP 0301471 W 20030214**; AU 2003208852 A 20030214; DE 10208186 A 20020220; DE 50300911 T 20030214; EP 03706505 A 20030214; ES 03706505 T 20030214; UA 20040806931 A 20030214