

Title (en)

SURFACE DECARBURIZATION-RESTRAINED STEEL AND MANUFACTURING METHOD THEREOF

Title (de)

STAHL MIT EINGEDÄMMTER OBERFLÄCHENENTKOHLUNG UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

ACIER À DÉCARBURATION SUPERFICIELLE LIMITÉE ET PROCÉDÉ DE FABRICATION ASSOCIÉ

Publication

**EP 2376666 A4 20140326 (EN)**

Application

**EP 09835310 A 20091228**

Priority

- KR 2009007846 W 20091228
- KR 20080134348 A 20081226

Abstract (en)

[origin: WO2010074544A2] Decarburization-restrained steel and manufacturing method thereof are disclosed. Steel includes a boron (B)-concentrated layer formed on its surface to prevent carbon of the steel from being in contact with oxygen in atmosphere to thus restrain decarburization of the steel. The steel includes a boron-concentrated layer with a thickness of 3mm or larger formed on the surface of the steel. The method of manufacturing decarburization-restrained steel includes cooling steel containing 0.001 wt% to 0.02 wt% of boron (B) at a cooling speed of 0.5?/s to 25?/s at an austenite + ferrite two-phase region.

IPC 8 full level

**C22C 38/00** (2006.01); **C22C 38/32** (2006.01); **C22C 38/54** (2006.01)

CPC (source: EP KR US)

**C22C 38/001** (2013.01 - KR); **C22C 38/002** (2013.01 - KR); **C22C 38/02** (2013.01 - EP KR US); **C22C 38/14** (2013.01 - KR); **C22C 38/32** (2013.01 - EP KR US); **C22C 38/54** (2013.01 - EP KR US)

Citation (search report)

- [X] JP 2008133539 A 20080612 - KOBE STEEL LTD
- See references of WO 2010074544A2

Citation (examination)

- JP 2008133539 A 20080612 - KOBE STEEL LTD
- SPIEKERMANN P: "LEGIERUNGEN - EIN BESONDERES PATENTRECHTLICHES PROBLEM? - LEGIERUNGSPRUEFUNG IM EUROPÄISCHEN PATENTAMT -", MITTEILUNGEN DER DEUTSCHEN PATENTANWÄLTE, HEYMANN, KOLN, DE, 1 January 1993 (1993-01-01), pages 178 - 190, XP000961882, ISSN: 0026-6884

Designated contracting state (EPC)

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 SE SI SK SM TR

DOCDB simple family (publication)

**WO 2010074544 A2 20100701**; **WO 2010074544 A3 20100923**; CN 102264935 A 20111130; CN 102264935 B 20140903; EP 2376666 A2 20111019; EP 2376666 A4 20140326; JP 2012514133 A 20120621; JP 5581335 B2 20140827; KR 101115761 B1 20120612; KR 20100076336 A 20100706; US 2011247734 A1 20111013

DOCDB simple family (application)

**KR 2009007846 W 20091228**; CN 200980152839 A 20091228; EP 09835310 A 20091228; JP 2011543439 A 20091228; KR 20080134348 A 20081226; US 200913141099 A 20091228