

Title (en)
HIGH-STRENGTH STEEL HAVING EXCELLENT BRITTLE CRACK ARRESTABILITY AND WELDING PART BRITTLE CRACK INITIATION RESISTANCE, AND PRODUCTION METHOD THEREFOR

Title (de)
HOCHFESTER STAHL MIT AUSGEZEICHNETER SPRÖDBRUCHSTABILITÄT UND SCHWEISSTEILSPRÖDBRUCHBESTÄNDIGKEIT UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)
ACIER HAUTE RÉSIDENCE PRÉSENTANT D'EXCELLENTE PROPRIÉTÉS DE CAPACITÉ ANTIFISSURES FRAGILES ET DE RÉSISTANCE D'AMORÇAGE DE FISSURES FRAGILES DE PARTIE DE SOUDAGE, ET SON PROCÉDÉ DE PRODUCTION

Publication
EP 3385401 A1 20181010 (EN)

Application
EP 16871071 A 20161202

Priority
• KR 20150172689 A 20151204
• KR 2016014088 W 20161202

Abstract (en)
The purpose of another aspect of the present invention is to provide a high-strength steel having excellent brittle crack arrestability and welding part brittle crack initiation resistance, and a production method therefor. According to one aspect of the present invention, provided are a high-strength steel having excellent brittle crack arrestability and welding part brittle crack initiation resistance, and a production method therefor, the high-strength steel: comprising, in wt%, C: 0.05-0.09%, Mn: 1.5-2.2%, Ni: 0.3-1.2%, Nb: 0.005-0.04%, Ti: 0.005-0.004%, Cu: 0.1-0.8%, Si: 0.05-0.03%, Al: 0.005-0.05%, P: 100ppm or less, S: 40ppm or less, and a remainder made up by Fe and other inevitable impurities; having a center part microstructure comprising an acicular ferrite and granular bainite mixed-phase, upper bainite, and a remainder made up by one type or more selected from the group consisting of ferrite, pearlite, and a martensite-austenite (MA) constituent; having, in a 2mm or less subsurface region, a surface part microstructure comprising ferrite and a remainder made up by one type or more among bainite and martensite, and having a welding heat affected zone, which is formed during welding, that comprises, in area%, 5% or less of a martensite-austenite constituent. According to the present invention, high-strength steel having high yield strength, excellent brittle crack arrestability, and excellent welding part brittle crack initiation resistance may be obtained.

IPC 8 full level
C22C 38/16 (2006.01); **B21B 37/16** (2006.01); **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)

CPC (source: EP US)
C21D 8/0205 (2013.01 - EP US); **C21D 8/0226** (2013.01 - EP US); **C21D 8/0263** (2013.01 - EP US); **C21D 9/46** (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); **C21D 2211/002** (2013.01 - EP US); **C21D 2211/005** (2013.01 - EP US)

Cited by
CN113242910A; EP3901309A4; JP2022514019A

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)
EP 3385401 A1 20181010; **EP 3385401 A4 20181010**; **EP 3385401 B1 20200212**; CN 108368587 A 20180803; CN 108368587 B 20200526; JP 2019502018 A 20190124; JP 6648270 B2 20200214; KR 101726082 B1 20170412; US 2018363081 A1 20181220; WO 2017095175 A1 20170608

DOCDB simple family (application)
EP 16871071 A 20161202; CN 201680070390 A 20161202; JP 2018522789 A 20161202; KR 20150172689 A 20151204; KR 2016014088 W 20161202; US 201615780175 A 20161202