

Title (en)
HIGH-STRENGTH HOT-ROLLED STEEL SHEET

Title (de)
HOCHFESTES WARMGEWALZTES STAHLBLECH

Title (fr)
TÔLE D'ACIER LAMINÉE À CHAUD À RÉSISTANCE ÉLEVÉE

Publication
EP 3330394 A1 20180606 (EN)

Application
EP 15900339 A 20150731

Priority
JP 2015071845 W 20150731

Abstract (en)
There is provided a high strength hot rolled steel sheet including a predetermined chemical composition. A structure includes, by area ratio, 80% or more of polygonal ferrite, a total of 5% or less of martensite and austenite, and a total of 5% or less of pearlite and cementite, and a remainder is at least one selected from bainitic ferrite and bainite. When a standard deviation of micro-hardness of 50 arbitrary pieces of the polygonal ferrite present within a range of $\pm 100 \mu\text{m}$ from a central plane in a sheet thickness direction is $\bar{A}HV$, the $\bar{A}HV$ is 30 or smaller. A grain of the polygonal ferrite contains 5×10^7 pieces/mm² or more of Ti-containing carbide, and in 50% or more of the Ti-containing carbide, the aspect ratio which is a ratio of a length of a long side to a length of a short side is less than 3. The tensile strength is 540 MPa or higher.

IPC 8 full level
C22C 38/00 (2006.01); **C21D 9/46** (2006.01); **C22C 38/54** (2006.01)

CPC (source: EP KR US)
C21D 8/0226 (2013.01 - EP US); **C21D 9/46** (2013.01 - EP US); **C22C 38/00** (2013.01 - EP US); **C22C 38/002** (2013.01 - KR); **C22C 38/02** (2013.01 - KR); **C22C 38/04** (2013.01 - EP KR US); **C22C 38/06** (2013.01 - EP KR US); **C22C 38/12** (2013.01 - KR); **C22C 38/14** (2013.01 - KR); **C22C 38/34** (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); **C23C 2/06** (2013.01 - KR); **C23C 2/40** (2013.01 - KR); **C21D 2211/005** (2013.01 - EP KR US); **C23C 2/06** (2013.01 - US)

Cited by
EP3925771A1; EP4137592A4; US12024753B2; WO2021254719A1

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 3330394 A1 20180606; **EP 3330394 A4 20181219**; **EP 3330394 B1 20200826**; BR 112018000633 A2 20180918; CN 107849651 A 20180327; CN 107849651 B 20190903; JP 6485549 B2 20190320; JP WO2017022025 A1 20180531; KR 102079968 B1 20200221; KR 20180019736 A 20180226; MX 2018001140 A 20180420; US 2018209007 A1 20180726; WO 2017022025 A1 20170209

DOCDB simple family (application)
EP 15900339 A 20150731; BR 112018000633 A 20150731; CN 201580082015 A 20150731; JP 2015071845 W 20150731; JP 2017532259 A 20150731; KR 20187002148 A 20150731; MX 2018001140 A 20150731; US 201515744690 A 20150731