

Title (en)

HIGH-STRENGTH COLD-ROLLED STEEL PLATE AND METHOD FOR PRODUCING SAME

Title (de)

HOCHFESTE KALTGEWALZTE STAHLPLATTE UND VERFAHREN ZU DEREN HERSTELLUNG

Title (fr)

TÔLE EN ACIER LAMINÉE À FROID HAUTEMENT RÉSISTANTE, ET PROCÉDÉ DE FABRICATION DE CELLE-CI

Publication

**EP 3263728 B1 20190911 (EN)**

Application

**EP 15883094 A 20151221**

Priority

- JP 2015038506 A 20150227
- JP 2015006347 W 20151221

Abstract (en)

[origin: EP3263728A1] Provided are a high-strength cold-rolled steel sheet excellent in terms of elongation (EL) and hole expansion ratio (») having a low yield ratio (YR) and a method for manufacturing the steel sheet. The steel sheet has a chemical composition containing, by mass%, C: 0.15% to 0.25%, Si: 1.0% to 2.0%, Mn: 1.8% to 2.5%, P: 0.10% or less, S: 0.010% or less, Al: 0.10% or less, N: 0.010% or less, and the balance being Fe and inevitable impurities, and a multi-phase microstructure including ferrite having an average crystal grain diameter of 5 µm or less in an amount of 30% to 55% in terms of volume fraction, retained austenite having an average crystal grain diameter of 2 µm or less in an amount of 5% to 15% in terms of volume fraction, and tempered martensite having an average crystal grain diameter of 2 µm or less in an amount of 30% to 60% in terms of volume fraction, in which the number of grains of the retained austenite existing in an area of 1000 µm<sup>2</sup> is 10 or more.

IPC 8 full level

**C21D 6/00** (2006.01); **C21D 8/02** (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (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)

CPC (source: EP KR US)

**C21D 6/005** (2013.01 - EP US); **C21D 6/008** (2013.01 - EP US); **C21D 8/0236** (2013.01 - EP US); **C21D 8/0247** (2013.01 - EP KR US); **C21D 8/0263** (2013.01 - EP US); **C21D 9/46** (2013.01 - EP KR US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/005** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP KR US); **C22C 38/04** (2013.01 - EP KR 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); **C21D 2211/001** (2013.01 - EP KR US); **C21D 2211/004** (2013.01 - KR); **C21D 2211/005** (2013.01 - EP KR US); **C21D 2211/008** (2013.01 - EP US)

Cited by

EP3754044A4; WO2020058747A1; WO2020058801A1

Designated contracting state (EPC)

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