Title (en)

High-strength hot rolled steel plate and manufacturing method thereof

Title (de)

Widerstandsfähige heißgewalzte Stahlplatte und Herstellungsverfahren dafür

Title (fr)

Plaque d'acier laminée à chaud haute résistance et son procédé de fabrication

Publication

EP 1990430 A1 20081112 (EN)

Application

EP 08154615 A 20080416

Priority

JP 2007108759 A 20070417

Abstract (en)

The present invention provides a new high-strength and Si-Cr containing hot rolled steel plate provided with higher strength as well as excellent workability and a method for manufacturing the steel plate. The high-strength steel plate can be obtained by controlling the particle size of prior austenite to be 10μm or less, and properly selecting the coiling temperature. The steel plate obtained includes a retained austenite phase in a volume fraction of 5% to 20%; a martensite phase in a volume fraction equal to or less than 10%; and a bainite phase in the remaining volume fraction. The particle size of the retained austenite particle is 1μm or less and the retained austenite particles are dispersed uniformly.

IPC 8 full level

C21D 8/02 (2006.01); **C21D 8/04** (2006.01); **C22C 38/22** (2006.01); **C22C 38/44** (2006.01)

CPC (source: EP KR US)

C21D 6/002 (2013.01 - EP KR US); **C21D 6/008** (2013.01 - EP KR US); **C21D 8/0226** (2013.01 - EP KR US); **C21D 8/0263** (2013.01 - EP KR US); **C21D 8/0426** (2013.01 - EP KR US); **C21D 9/48** (2013.01 - EP KR US); **C22C 38/001** (2013.01 - EP KR US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP KR US); **C22C 38/34** (2013.01 - KR); **C22C 38/44** (2013.01 - EP KR US); C21D 2211/001 (2013.01 - EP US); C21D 2211/002 (2013.01 - EP US); C21D 2211/008 (2013.01 - EP US)

Citation (applicant)

- JP 2007108759 A 20070426 - LG ELECTRONICS INC
- JP S6043425 A 19850308 - NIPPON KOKAN KK
- JP H09104947 A 19970422 - NIPPON STEEL CORP
- JP 3247908 B2 20020121
- MORIMOTO ET AL., IRON AND STEEL, vol. 88, no. 11, 2002

Citation (search report)

- [A] US 2007006948 A1 20070111 - NONAKA TOSHIKI [JP], et al
- [A] EP 1749895 A1 20070207 - ARCELOR FRANCE [FR]
- [A] EP 1674586 A1 20060628 - KOBE STEEL LTD [JP], et al
- [A] US 6855218 B1 20050215 - KAWALLA RUDOLF [DE], et al
- [A] US 2005133124 A1 20050623 - KAWANO OSAMU [JP], et al
- [A] JP 2005076078 A 20050324 - KOBE STEEL LTD
- [A] EP 0295500 A1 19881221 - NIPPON STEEL CORP [JP]
- [A] KLIBER J ET AL: "TRANSFORMATION INDUCED PLASTICITY (TRIP) EFFECT USED IN FORMING OF CARBON CMNSI STEEL", MATERIALS SCIENCE FORUM, AEDERMANNSFDORF, CH, vol. 500/501, 1 January 2005 (2005-01-01), pages 461 - 468, XP001248398, ISSN: 0255-5476

Cited by

EP3012341A4; EP2690183B1

Designated contracting state (EPC)

DE FR GB

Designated extension state (EPC)

AL BA MK RS

DOCDB simple family (publication)

EP 1990430 A1 20081112; **EP 1990430 B1 20110615**; CN 101319295 A 20081210; CN 101319295 B 20120530; JP 2008266695 A 20081106; JP 5214905 B2 20130619; KR 101446354 B1 20141001; KR 20080093883 A 20081022; US 2009223609 A1 20090910

DOCDB simple family (application)

EP 08154615 A 20080416; CN 200810092245 A 20080417; JP 2007108759 A 20070417; KR 20080033714 A 20080411; US 7886008 A 20080407