

Title (en)

STEEL SHEET AND SURFACE-TREATED STEEL SHEET

Title (de)

STAHLBLECH UND OBERFLÄCHENBEHANDELTES STAHLBLECH

Title (fr)

FEUILLE D'ACIER ET FEUILLE D'ACIER TRAITÉE EN SURFACE

Publication

EP 2371978 A1 20111005 (EN)

Application

EP 09827543 A 20091117

Priority

- JP 2009069464 W 20091117
- JP 2008295897 A 20081119
- JP 2008295898 A 20081119
- JP 2008295899 A 20081119
- JP 2008295900 A 20081119

Abstract (en)

A high-strength steel sheet having a tensile strength of at least 590 MPa and excellent bending properties has a chemical composition containing C: 0.03 - 0.20 %, Si: 0.005 - 2.0 %, Mn: 1.2 - 3.5 %, P: 0.1 %, S: 0.01 %, sol. Al: 0.001 - 1.0 %, N: 0.01 %, and Bi: 0.0001 - 0.05 %, optionally Ti: 0.3 %, Nb: 0.3 %, V: 0.3 %, Cr: 1 %, Mo: 1 %, Cu: 1 %, Ni: 1 %, Ca: 0.01 %, Mg: 0.01 %, REM: 0.01 %, Zr: 0.01 %, and B: 0.01 %, wherein the Mn segregation ratio (Mn max /Mn av) calculated from the average Mn concentration (Mn av) and the maximum Mn concentration (Mn max) at a depth of 1/20 of the sheet thickness from the surface of the steel sheet is less than 1.30.

IPC 8 full level

C22C 38/00 (2006.01); **B21B 3/00** (2006.01); **B22D 11/00** (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)

CPC (source: EP KR)

C21D 8/0215 (2013.01 - EP KR); **C21D 8/0226** (2013.01 - EP KR); **C21D 8/0236** (2013.01 - EP KR); **C21D 8/0273** (2013.01 - EP KR);
C22C 38/002 (2013.01 - EP KR); **C22C 38/005** (2013.01 - KR); **C22C 38/02** (2013.01 - EP KR); **C22C 38/04** (2013.01 - EP KR);
C22C 38/06 (2013.01 - EP KR)

Cited by

ES2437715A1; EP3085801A4; US2018230569A1; US10344361B2; US10704117B2; US11365465B2; US10273555B2; US10253387B2;
US10711322B2; US10344351B2; US10774405B2; US10508317B2

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 2010058762 A1 20100527; CN 102282280 A 20111214; CN 102282280 B 20150107; EP 2371978 A1 20111005; EP 2371978 A4 20160504;
EP 2371978 B1 20180502; ES 2672070 T3 20180612; KR 101304009 B1 20130904; KR 20110084545 A 20110725; PL 2371978 T3 20180928

DOCDB simple family (application)

JP 2009069464 W 20091117; CN 200980154581 A 20091117; EP 09827543 A 20091117; ES 09827543 T 20091117;
KR 20117013957 A 20091117; PL 09827543 T 20091117