

Title (en)  
THICK STEEL PLATE HAVING EXCELLENT CRYOGENIC TOUGHNESS

Title (de)  
DICKE STAHLPLATTE MIT HERVORRAGENDER KRYOGENER ZÄHIGKEIT

Title (fr)  
TÔLE D'ACIER ÉPAISSE AYANT UNE EXCELLENTE RÉSISTANCE CRYOGÉNIQUE

Publication  
**EP 2933347 A4 20160727 (EN)**

Application  
**EP 13861920 A 20131211**

Priority

- JP 2012272184 A 20121213
- JP 2012285916 A 20121227
- JP 2013083239 W 20131211

Abstract (en)  
[origin: EP2933347A1] This steel plate contains predetermined steel chemical compositions and has a Di value of 2.5 or more, where the Di value is defined by the steel chemical compositions. The steel plate includes a retained austenite phase (retained <sup>3</sup>) existing at -196°C in a volume fraction of 2.0% to 12.0% and has a retained austenite stabilization parameter of 3.1 or more, where the parameter is defined by chemical compositions contained in the retained austenite existing at -196°C.

IPC 8 full level  
**C22C 38/00** (2006.01); **C21D 6/00** (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); **C22C 38/08** (2006.01); **C22C 38/12** (2006.01); **C22C 38/14** (2006.01); **C22C 38/16** (2006.01); **C22C 38/42** (2006.01); **C22C 38/44** (2006.01); **C22C 38/46** (2006.01); **C22C 38/48** (2006.01); **C22C 38/50** (2006.01); **C22C 38/54** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP)  
**C21D 9/46** (2013.01); **C22C 38/00** (2013.01); **C22C 38/001** (2013.01); **C22C 38/002** (2013.01); **C22C 38/005** (2013.01); **C22C 38/02** (2013.01); **C22C 38/04** (2013.01); **C22C 38/06** (2013.01); **C22C 38/08** (2013.01); **C22C 38/12** (2013.01); **C22C 38/14** (2013.01); **C22C 38/16** (2013.01); **C22C 38/42** (2013.01); **C22C 38/44** (2013.01); **C22C 38/46** (2013.01); **C22C 38/48** (2013.01); **C22C 38/50** (2013.01); **C22C 38/54** (2013.01); **C22C 38/58** (2013.01)

Citation (search report)

- [XAI] WO 2012005330 A1 20120112 - NIPPON STEEL CORP [JP], et al
- [XA] US 4776900 A 19881011 - YANO SEINOSUKE [JP], et al
- [AD] JP 2011241419 A 20111201 - SUMITOMO METAL IND, et al
- See references of WO 2014092129A1

Cited by  
EP3712291A4; RU2625514C1; EP3392361A4; RU2686758C1; EP3130687A4; EP4026927A4; US11434557B2

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

DOCDB simple family (publication)  
**EP 2933347 A1 20151021**; **EP 2933347 A4 20160727**; CN 104854252 A 20150819; CN 104854252 B 20161012; EP 3190201 A1 20170712; KR 101711774 B1 20170302; KR 20150082611 A 20150715; WO 2014092129 A1 20140619

DOCDB simple family (application)  
**EP 13861920 A 20131211**; CN 201380062597 A 20131211; EP 17000237 A 20131211; JP 2013083239 W 20131211; KR 20157015524 A 20131211