

Title (en)
HIGH-Mn STEEL AND PRODUCTION METHOD THEREFOR

Title (de)
STAHL MIT HOHEM MN-GEHALT UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)
ACIER RICHE EN Mn ET SON PROCÉDÉ DE PRODUCTION

Publication
EP 3617337 A4 20200325 (EN)

Application
EP 18790123 A 20180425

Priority
• JP 2017087702 A 20170426
• JP 2018016764 W 20180425

Abstract (en)
[origin: EP3617337A1] Provided is a method of further imparting excellent ductility to high-Mn steel exhibiting excellent low-temperature toughness in a base metal and a heat-affected zone after welding. The high-Mn steel has a chemical composition containing, in mass%, C: 0.10 % to 0.70 %, Si: 0.05 % to 1.0 %, Mn: 15 % to 30 %, P: 0.030 % or less, S: 0.0070 % or less, Al: 0.01 % to 0.07 %, Cr: 0.5 % to 7.0 %, N: 0.0050 % to 0.0500 %, O: 0.0050 % or less, Ti: less than 0.005 %, and Nb: less than 0.005 %, with the balance being Fe and inevitable impurities, has a microstructure containing austenite as a matrix phase, and, in the microstructure, nonmetallic inclusions with an area fraction of less than 5.0 %, and exhibits a yield stress of 400 MPa or more and an absorbed energy ($vE_{sub-196}$) of 100 J or more.

IPC 8 full level
C22C 38/38 (2006.01); **C21D 8/02** (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/06** (2006.01); **C22C 38/20** (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01); **C22C 38/26** (2006.01); **C22C 38/28** (2006.01); **C22C 38/42** (2006.01); **C22C 38/48** (2006.01); **C22C 38/50** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP KR)
C21D 8/02 (2013.01 - EP KR); **C21D 8/0205** (2013.01 - EP); **C21D 8/0226** (2013.01 - EP); **C21D 9/46** (2013.01 - EP); **C22C 38/00** (2013.01 - EP); **C22C 38/001** (2013.01 - EP); **C22C 38/002** (2013.01 - EP); **C22C 38/005** (2013.01 - EP); **C22C 38/02** (2013.01 - EP); **C22C 38/06** (2013.01 - EP); **C22C 38/20** (2013.01 - EP); **C22C 38/22** (2013.01 - EP); **C22C 38/24** (2013.01 - EP); **C22C 38/26** (2013.01 - EP); **C22C 38/28** (2013.01 - EP); **C22C 38/38** (2013.01 - EP KR); **C22C 38/42** (2013.01 - EP); **C22C 38/48** (2013.01 - EP); **C22C 38/50** (2013.01 - EP); **C22C 38/58** (2013.01 - EP KR)

Citation (search report)
• [X] JP 2016084529 A 20160519 - NIPPON STEEL & SUMITOMO METAL CORP
• [A] JP S5623259 A 19810305 - SUMITOMO METAL IND
• [A] JP H0215148 A 19900118 - SUMITOMO METAL IND
• [A] JP 2017071817 A 20170413 - NIPPON STEEL & SUMITOMO METAL CORP
• [A] JP S56258 A 19810106 - SUMITOMO METAL IND
• See references of WO 2018199145A1

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

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EP 3617337 A1 20200304; **EP 3617337 A4 20200325**; BR 112019022088 A2 20200505; CN 110573642 A 20191213; JP 6460292 B1 20190130; JP WO2018199145 A1 20190627; KR 102331032 B1 20211124; KR 20190134704 A 20191204; PH 12019501995 A1 20200601; PH 12019501995 B1 20200601; SG 11201907930Q A 20190927; TW 201839152 A 20181101; TW I641706 B 20181121; WO 2018199145 A1 20181101

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EP 18790123 A 20180425; BR 112019022088 A 20180425; CN 201880026635 A 20180425; JP 2018016764 W 20180425; JP 2018544293 A 20180425; KR 20197031996 A 20180425; PH 12019501995 A 20190830; SG 11201907930Q A 20180425; TW 107114070 A 20180425