

Title (en)

AS-ROLLED TYPE ELECTRIC-RESISTANCE-WELDED STEEL PIPE FOR LINE PIPES

Title (de)

ROHGEWALZTES WIDERSTANDSGESCHWEISSTES STAHLROHR FÜR LEITUNGSROHRE

Title (fr)

TUYAU EN ACIER SOUDÉ PAR RÉSISTANCE ÉLECTRIQUE DE TYPE BRUT DE LAMINAGE POUR TUYAUX DE CANALISATION

Publication

EP 3546610 A4 20200429 (EN)

Application

EP 17904175 A 20170329

Priority

JP 2017013013 W 20170329

Abstract (en)

[origin: EP3546610A1] An as-rolled electric resistance welded steel pipe for a line pipe has a base metal portion that includes, in terms of % by mass, 0.01 to 0.10% of C, 0.01 to 0.40% of Si, 0.50 to 2.00% of Mn, 0 to 0.030% of P, 0 to 0.0015% of S, 0.010 to 0.050% of Al, 0.0030 to 0.0080% of N, 0.010 to 0.050% of Nb and 0.005 to 0.020% of Ti, the balance comprising Fe and impurities, and in a metallographic microstructure of the base metal portion, an areal ratio of polygonal ferrite is 80% to 98% and the balance is composed of at least one of bainite or pearlite, a yield strength in a pipe axis direction is 415 to 550 MPa, a tensile strength in the pipe axis direction is 461 to 625 MPa, and a maximum Vickers hardness of an inner surface layer of the base metal portion is 248 HV or less and is smaller than a maximum Vickers hardness of an outer surface layer of the base metal portion by 5 HV or more.

IPC 8 full level

C22C 38/00 (2006.01); **C21D 8/10** (2006.01); **C21D 9/08** (2006.01); **C21D 9/50** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP KR)

C21D 8/10 (2013.01 - EP); **C21D 8/105** (2013.01 - KR); **C21D 9/08** (2013.01 - EP KR); **C21D 9/50** (2013.01 - EP KR); **C22C 38/00** (2013.01 - EP); **C22C 38/001** (2013.01 - EP); **C22C 38/04** (2013.01 - EP); **C22C 38/12** (2013.01 - EP); **C22C 38/14** (2013.01 - EP); **C22C 38/58** (2013.01 - EP KR); **C21D 2211/005** (2013.01 - EP)

Citation (search report)

- [X] WO 2016143270 A1 20160915 - JFE STEEL CORP [JP]
- [X] US 2015083266 A1 20150326 - TOYODA SHUNSUKE [JP], et al
- [A] EP 2752499 A1 20140709 - NIPPON STEEL & SUMITOMO METAL CORP [JP]
- [A] WO 2013114519 A1 20130808 - NIPPON STEEL & SUMITOMO METAL CORP [JP]
- See references of WO 2018179169A1

Cited by

EP4066954A4; US11739866B2

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 3546610 A1 20191002; **EP 3546610 A4 20200429**; **EP 3546610 B1 20210616**; CN 110088317 A 20190802; JP 6288390 B1 20180307; JP WO2018179169 A1 20190404; KR 20190084092 A 20190715; WO 2018179169 A1 20181004

DOCDB simple family (application)

EP 17904175 A 20170329; CN 201780077913 A 20170329; JP 2017013013 W 20170329; JP 2017549548 A 20170329; KR 20197016507 A 20170329