

Title (en)

THICK SEAMLESS STEEL PIPE FOR LINE PIPE AND METHOD FOR PRODUCTION THEREOF

Title (de)

DICKES NAHTLOSES STAHLROHR FÜR LEITUNGSROHR UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

TUBE EN ACIER EPAIS SANS SOUDURE POUR TUYAU DE CANALISATION ET SON PROCEDE DE PRODUCTION

Publication

EP 1876254 A4 20120801 (EN)

Application

EP 06728830 A 20060309

Priority

- JP 2006304613 W 20060309
- JP 2005095240 A 20050329

Abstract (en)

[origin: EP1876254A1] A heavy wall seamless steel pipe for line pipe with a high strength and increased toughness, which has a chemical composition, by mass%, that consists of C: 0.03 to 0.08%, Si: not more than 0.25%, Mn:0.3 to 2.5%, Al: 0.001 to 0.10%, Cr: 0.02 to 1.0%, Ni: 0.02 to 1.0%, Mo: 0.02 to 1.2%, Ti:0.004 to 0.010%, N:0.002 to 0.008%, and 0.0002 to 0.005%, in total, of at least one selected from Ca, Mg and REM, and the balance Fe and impurities, optionally including V: 0 to 0.08%, Nb: 0 to 0.05% or Cu: 0 to 1.0%,and that P and S among impurities are not more than 0.05% and not more than 0.005% respective ly. It may contain 0.0003 to 0.01% of boron. A manufacturing method thereof is characterized by cooling rate, heating condition for piercing, and heat treating after pipe making.

IPC 8 full level

C22C 38/00 (2006.01); **B21B 23/00** (2006.01); **C21D 8/10** (2006.01); **C21D 9/08** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/42** (2006.01); **C22C 38/44** (2006.01); **C22C 38/46** (2006.01); **C22C 38/50** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP US)

C22C 38/00 (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/42** (2013.01 - EP US); **C22C 38/44** (2013.01 - EP US); **C22C 38/46** (2013.01 - EP US); **C22C 38/50** (2013.01 - EP US); **C22C 38/58** (2013.01 - EP US); **B21B 19/04** (2013.01 - EP US); **B21B 23/00** (2013.01 - EP US); **C21D 8/10** (2013.01 - EP US)

Citation (search report)

- [XA] JP 2000178645 A 20000627 - SUMITOMO METAL IND
- [XAI] WO 2004031420 A1 20040415 - SUMITOMO METAL IND [JP], et al
- [XAI] JP 2004124158 A 20040422 - SUMITOMO METAL IND
- [IA] JP H08104922 A 19960423 - NIPPON STEEL CORP
- [A] JP 2000104117 A 20000411 - SUMITOMO METAL IND
- [A] JP H11229079 A 19990824 - SUMITOMO METAL IND
- [A] JP 2001059132 A 20010306 - NIPPON KOKAN KK
- [A] JP H07173536 A 19950711 - NIPPON STEEL CORP
- [A] JP H07331381 A 19951219 - NIPPON STEEL CORP
- [A] JP H06172858 A 19940621 - NIPPON STEEL CORP
- See references of WO 2006103894A1

Cited by

EP2789702A1; EP1918395A4; EP3026139A4; EP2728030A4; EP2578713A4; EP1918398A4; EP1918400A4; NO341250B1; EP3626841A1; EP3031943A4; EP3144407A4; EP2789700A1; CN106623432A; US11105501B2; US9399810B2; US9657365B2; US11124852B2; US9932651B2; US10480043B2; US10036078B2; EP2644731A4; EP2789701A1; EP2789703A1; WO2016081578A1; US11833561B2; US7896984B2; US7896985B2; US9651175B2; US11952648B2; US9644248B2; US9803256B2; US10378074B2; US10378075B2; US11377704B2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 1876254 A1 20080109; EP 1876254 A4 20120801; EP 1876254 B1 20141112; AR 052706 A1 20070328; AU 2006229079 A1 20061005; AU 2006229079 B2 20090409; AU 2006229079 C1 20110317; BR PI0608953 A2 20100217; BR PI0608953 B1 20161011; BR PI0608953 B8 20170321; CA 2602526 A1 20061005; CA 2602526 C 20110816; CN 100543167 C 20090923; CN 101151387 A 20080326; JP 2006274350 A 20061012; JP 4792778 B2 20111012; NO 20074257 L 20071220; NO 340772 B1 20170619; US 2008047635 A1 20080228; US 2010236670 A1 20100923; WO 2006103894 A1 20061005

DOCDB simple family (application)

EP 06728830 A 20060309; AR P060101061 A 20060317; AU 2006229079 A 20060309; BR PI0608953 A 20060309; CA 2602526 A 20060309; CN 200680009884 A 20060309; JP 2005095240 A 20050329; JP 2006304613 W 20060309; NO 20074257 A 20070821; US 79148610 A 20100601; US 89513107 A 20070823