

Title (en)
ELECTRIC RESISTANCE WELDED STEEL PIPE

Title (de)
WIDERSTANDSGESCHWEISSTES STAHLROHR

Title (fr)
TUYAU EN ACIER SOUDÉ PAR RÉSISTANCE ÉLECTRIQUE

Publication
EP 4206338 A4 20231025 (EN)

Application
EP 20951521 A 20200828

Priority
JP 2020032636 W 20200828

Abstract (en)
[origin: EP4206338A1] This electric resistance welded steel pipe includes a base material portion having a predetermined chemical composition and a weld, when a wall thickness of the base material portion is represented by tB and a wall thickness of the weld is represented by tS, a microstructure at a (1/4)tB position from an outer surface of the base material portion is composed of, by area%, 10% to 50% of bainite, 50% to 90% polygonal ferrite, and 1% or less of a remainder in microstructure, an average grain size is 20 μm or less, a microstructure at a (1/4)tS position from an outer surface of the weld is composed of, by area%, 70% to 90% of bainite, polygonal ferrite, and 1 % or less of a remainder in microstructure, an average grain size is 15 μm or less, a development degree of {001} on a butting surface of the weld is 1.5 or less, a hardness of the weld is 250 Hv or less, Charpy impact absorbed energies of the base material portion and the weld at -20°C are 150 J or more, a yield stress is 360 to 600 MPa, and a tensile strength is 465 to 760 MPa.

IPC 8 full level
C21D 8/10 (2006.01); **C21D 1/02** (2006.01); **C21D 1/18** (2006.01); **C21D 1/42** (2006.01); **C21D 8/02** (2006.01); **C21D 9/08** (2006.01); **C21D 9/46** (2006.01); **C21D 9/50** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/08** (2006.01); **C22C 38/12** (2006.01); **C22C 38/14** (2006.01); **C22C 38/16** (2006.01); **C22C 38/26** (2006.01); **C22C 38/28** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP)
C22C 38/002 (2013.01); **C22C 38/005** (2013.01); **C22C 38/02** (2013.01); **C22C 38/04** (2013.01); **C22C 38/08** (2013.01); **C22C 38/12** (2013.01); **C22C 38/14** (2013.01); **C22C 38/16** (2013.01); **C22C 38/26** (2013.01); **C22C 38/28** (2013.01); **C21D 1/02** (2013.01); **C21D 1/18** (2013.01); **C21D 1/42** (2013.01); **C21D 8/0205** (2013.01); **C21D 8/105** (2013.01); **C21D 9/08** (2013.01); **C21D 9/46** (2013.01); **C21D 9/50** (2013.01); **C21D 2211/002** (2013.01); **C21D 2211/008** (2013.01)

Citation (search report)

- [I] EP 2752499 A1 20140709 - NIPPON STEEL & SUMITOMO METAL CORP [JP]
- [A] JP 2013139051 A 20130718 - JFE STEEL CORP
- [A] WO 2020170333 A1 20200827 - NIPPON STEEL CORP [JP]
- [A] EP 0699773 A1 19960306 - NIPPON KOKAN KK [JP]
- [A] EP 0739678 A1 19961030 - NIPPON KOKAN KK [JP]
- See references of WO 2022044271A1

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

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
EP 4206338 A1 20230705; EP 4206338 A4 20231025; JP 6885524 B1 20210616; JP WO2022044271 A1 20220303;
WO 2022044271 A1 20220303

DOCDB simple family (application)
EP 20951521 A 20200828; JP 2020032636 W 20200828; JP 2020573068 A 20200828