

Title (en)

METHOD FOR MAKING SEAMLESS TUBING WITH A STABLE ELASTIC LIMIT AT HIGH APPLICATION TEMPERATURES

Title (de)

VERFAHREN ZUR HERSTELLUNG NAHTLOSER LEITUNGSROHRE MIT STABILER STRECKGRENZE BEI ERHÖHTEN EINSATZTEMPERATUREN

Title (fr)

PROCEDE DE FABRICATION DE TUYAUX DE CONDUITE SANS JOINT, A LIMITE D'ELASTICITE STABLE A DES TEMPERATURES D'UTILISATION ELEVEES

Publication

EP 0954617 B1 20010808 (DE)

Application

EP 97953639 A 19971212

Priority

- DE 9702943 W 19971212
- DE 19702823 A 19970115

Abstract (en)

[origin: WO9831843A1] Disclosed is a method for making seamless tubing in a quality range of X 52 to X 90, with a stable elastic limit up to a temperature of application of 200<0> C and with a steady tension-expansion characteristic, consisting in submitting to a hot rolling process a steel-based source material containing the following alloy components (wt. %): C(0,06 - 0,18 %), Si (max. 0,40 %), Mn (0,80 -1,40 %), P (max. 0,025 %), S (max. 0,010 %), Al (0,010 - 0,060 %), Mo (max. 0,50 %), V (max. 0,10 %), Nb max. 0,10 %, N (max. 0,015 %), W > 0,30 - 1 %), the rest consisting of Fe and the usual impurities. After the hot rolling process, the cooled tubing parts are reheated through AC3, then tempered at a cooling temperature of at least 15 DEG C/s, and annealed at a temperature of 500 to 700 DEG C.

IPC 1-7

C22C 38/12; **C21D 8/10**

IPC 8 full level

C21D 8/10 (2006.01); **C21D 9/08** (2006.01); **C22C 38/00** (2006.01); **C22C 38/12** (2006.01)

CPC (source: EP US)

C21D 9/08 (2013.01 - EP US); **C22C 38/12** (2013.01 - EP US); **C21D 8/10** (2013.01 - EP US)

Cited by

CN112063918A; EP1627931B1

Designated contracting state (EPC)

DE ES GB IT

DOCDB simple family (publication)

WO 9831843 A1 19980723; AU 5748298 A 19980807; DE 59704264 D1 20010913; EP 0954617 A1 19991110; EP 0954617 B1 20010808; ES 2159155 T3 20010916; JP 2001508131 A 20010619; NO 993260 D0 19990630; NO 993260 L 19990630; US 2002011284 A1 20020131

DOCDB simple family (application)

DE 9702943 W 19971212; AU 5748298 A 19971212; DE 59704264 T 19971212; EP 97953639 A 19971212; ES 97953639 T 19971212; JP 53328098 A 19971212; NO 993260 A 19990630; US 34172299 A 19990715