Title (en)

SEAMLESS PIPE OF MARTENSITIC STAINLESS STEEL FOR OIL WELL PIPE AND PROCESS FOR PRODUCING THE SAME

Title (de)

NAHTLOSES ROHR AUS MARTENSITISCHEM NICHTROSTENDEM STAHL FÜR ÖLBOHRLOCHROHR UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

TUYAU CONTINU EN ACIER INOXYDABLE MARTENSITIQUE POUR UN TUYAU DE PUITS DE PÉTROLE ET PROCESSUS DE PRODUCTION ASSOCIÉ

Publication

EP 2322679 B1 20200226 (EN)

Application

EP 08876878 A 20081224

Priority

- JP 2008073918 W 20081224
- JP 2008226578 A 20080904

Abstract (en)

[origin: EP2322679A1] A seamless steel tube for OCTG which possesses both of high strength of yield strength YS of 95 ksi grade (665 to 758 MPa) and excellent low-temperature toughness, and a manufacturing method of the seamless steel tube are provided. To be more specific, to a stainless steel seamless tube having the composition which contains, by mass%, 0.020% or less C, 10 to 14% Cr, 3% or less Ni, 0.05% or less N, 0.03 to 0.2% Nb, and optionally further, 1.0% or less Si, 0.1 to 2.0% Mn, 0.020% or less P, 0.010% or less S, 0.10% or less Al, and Fe and unavoidable impurities as a balance, quenching in which the seamless tube is heated at a quenching temperature of A c3 transformation temperature or above and, thereafter, the seamless tube is cooled to a temperature range of 100°C or less at a cooling rate of air cooling or more, and tempering which follows the quenching and in which the seamless tube is heated at a tempering temperature of 550°C or above and is cooled are applied. Due to such treatment, a martensitic stainless steel seamless tube for country tubular goods which has the tempered martensitic structure where a precipitated Nb quantity is 0.020% or more, and possesses both of high strength at yield strength of 95 ksi grade and the excellent low-temperature toughness of fracture transition temperature vTrs of -40°C or below, and allows the hot straightening. In addition to the above-mentioned composition, the seamless steel tube may further contain one or two kinds of elements selected from Cu, Mo and/or one or two kinds selected from V, Ti, B in addition to the above-mentioned composition.

IPC 8 full level

C22C 38/00 (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/26** (2006.01); **C22C 38/48** (2006.01); **C22C 38/58** (2006.01)

CPC (source: EP US)

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Cited by

CN115110010A; EP2952592A4; EP3095886A4

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