

Title (en)
HIGH-STRENGTH ULTRA-THICK STEEL WITH EXCELLENT CRYOGENIC STRAIN AGING IMPACT TOUGHNESS AT CORE THEREOF, AND METHOD FOR MANUFACTURING SAME

Title (de)
HOCHFESTER ULTRADICKER STAHL MIT AUSGEZEICHNETER KRYOGENER BEANSPRUCHUNGSALTERUNGSSCHLAGZÄHIGKEIT IN SEINEM KERN UND VERFAHREN ZU SEINER HERSTELLUNG

Title (fr)
ACIER ULTRA-ÉPAIS À HAUTE RÉSISTANCE À EXCELLENTE TÉNACITÉ AUX CHOC APRÈS VIEILLISSEMENT SOUS CONTRAINTE CRYOGÉNIQUE AU COEUR DE CELUI-CI ET SON PROCÉDÉ DE FABRICATION

Publication
EP 4039844 A4 20230913 (EN)

Application
EP 20872512 A 20200925

Priority
• KR 20190121723 A 20191001
• KR 2020013062 W 20200925

Abstract (en)
[origin: EP4039844A1] An aspect of the present invention is to provide high-strength ultra-thick steel with excellent cryogenic strain aging impact toughness at the core thereof, and a method for manufacturing same. An embodiment of the present invention provides high-strength ultra-thick steel with excellent cryogenic strain aging impact toughness at the core thereof, and a method for manufacturing same, the steel comprising, by wt%, 0.02-0.06% of C, 1.8-2.2% of Mn, 0.7-1.1% of Ni, 0.2-0.5% of Mo, 0.005-0.03% of Nb, 0.005-0.018% of Ti, 80 ppm or less of P, 20 ppm or less of S, and the remainder of Fe and other evitable impurities, wherein the average grain size of grains having a high boundary angle of 15 degrees or greater is 15 μ m or less as measured in a range of 3/8t-5/8t in the thickness (t) direction by EBSD.

IPC 8 full level
C22C 38/04 (2006.01); **C21D 1/02** (2006.01); **C21D 1/18** (2006.01); **C21D 6/00** (2006.01); **C21D 8/02** (2006.01); **C21D 9/46** (2006.01); **C22C 38/08** (2006.01); **C22C 38/12** (2006.01); **C22C 38/14** (2006.01)

CPC (source: CN EP KR US)
C21D 1/02 (2013.01 - EP); **C21D 1/18** (2013.01 - EP); **C21D 6/001** (2013.01 - EP); **C21D 6/005** (2013.01 - EP); **C21D 8/0205** (2013.01 - CN EP KR US); **C21D 8/0226** (2013.01 - CN EP US); **C21D 8/0247** (2013.01 - KR); **C21D 8/0263** (2013.01 - CN EP); **C21D 9/46** (2013.01 - EP); **C22C 33/04** (2013.01 - CN); **C22C 38/04** (2013.01 - CN EP KR); **C22C 38/08** (2013.01 - CN EP KR); **C22C 38/12** (2013.01 - CN EP); **C22C 38/14** (2013.01 - CN EP KR); **C22C 38/44** (2013.01 - US); **C22C 38/48** (2013.01 - US); **C22C 38/50** (2013.01 - US); **C22C 38/58** (2013.01 - US); **C21D 2211/002** (2013.01 - EP); **C21D 2211/005** (2013.01 - EP)

Citation (search report)
• [I] WO 2019124945 A1 20190627 - POSCO [KR]
• [A] WO 2018117767 A1 20180628 - POSCO [KR]
• [A] WO 2018030737 A1 20180215 - POSCO [KR]
• [A] US 2017335424 A1 20171123 - LEE HAK-CHEOL [KR], et al
• [A] US 2019093204 A1 20190328 - LEE HAK-CHEOL [KR], et al
• [A] WO 2019132262 A1 20190704 - POSCO [KR]
• See references of WO 2021066402A1

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

DOCDB simple family (publication)
EP 4039844 A1 20220810; **EP 4039844 A4 20230913**; CN 114502762 A 20220513; JP 2022550795 A 20221205; JP 7404520 B2 20231225; KR 102237486 B1 20210408; US 2022325395 A1 20221013; WO 2021066402 A1 20210408

DOCDB simple family (application)
EP 20872512 A 20200925; CN 202080068574 A 20200925; JP 2022520044 A 20200925; KR 20190121723 A 20191001; KR 2020013062 W 20200925; US 202017763820 A 20200925