

Title (en)
HIGH-HEAT-INPUT-WELDING LOW-TEMPERATURE-RESISTANT CORROSION-RESISTANT STEEL FOR CARGO OIL TANKS AND MANUFACTURING METHOD THEREFOR

Title (de)
HOCHTEMPERATURBESTÄNDIGER UND HOCHTEMPERATURBESTÄNDIGER KORROSIONSBESTÄNDIGER STAHL ZUM SCHWEISSEN VON HOHEN WÄRMEEINGÄNGEN FÜR LADEÖLTANKS UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)
ACIER RÉISTANT À LA CORROSION ET RÉISTANT À BASSE TEMPÉRATURE POUR SOUDAGE À ENTRÉE DE CHALEUR ÉLEVÉE DESTINÉ À DES RÉSERVOIRS DE PÉTROLE DE CARGO ET SON PROCÉDÉ DE FABRICATION

Publication
EP 4227432 A4 20240619 (EN)

Application
EP 21945363 A 20211125

Priority
• CN 202111401895 A 20211119
• CN 2021132953 W 20211125

Abstract (en)
[origin: EP4227432A1] The present disclosure provides a low-temperature-resistant and corrosion-resistant cargo oil tank steel suitable for high-heat-input welding and a manufacturing method therefor. The low-temperature-resistant and corrosion-resistant cargo oil tank steel suitable for high-heat-input welding includes, by weight in percent, 0.04%-0.13% C, 0.10%-0.40% Si, 0.60%-1.30% Mn, 0.005%-0.012% P, S≤0.006%, 0.01%-0.05% Al, 0.03%-0.15% Sn, 0.005%-0.020% Nb, 0.005%-0.025% Ti, 0.15%-0.40% Ni, 0.15%-0.50% Cu, 0.10%-0.25% Cr, 0.007%-0.024% Ca and the balance Fe and inevitable impurities. The corrosion-resistant steel provided by the present disclosure is mainly designed for the upper deck and inner bottom plate of a storage and transportation tank of a polar route oil tanker, and the steel has excellent low-temperature toughness and can be welded with large heat input.

IPC 8 full level
C22C 38/42 (2006.01); **C21D 1/02** (2006.01); **C21D 1/18** (2006.01); **C21D 1/60** (2006.01); **C21D 6/00** (2006.01); **C21D 6/02** (2006.01); **C21D 8/02** (2006.01); **C21D 9/46** (2006.01); **C22C 38/00** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/44** (2006.01); **C22C 38/48** (2006.01); **C22C 38/50** (2006.01); **C22C 38/60** (2006.01)

CPC (source: CN EP KR US)
C21D 1/02 (2013.01 - EP); **C21D 1/18** (2013.01 - EP); **C21D 1/60** (2013.01 - EP); **C21D 1/84** (2013.01 - US); **C21D 6/004** (2013.01 - EP); **C21D 6/005** (2013.01 - EP); **C21D 6/02** (2013.01 - EP); **C21D 8/0205** (2013.01 - EP US); **C21D 8/021** (2013.01 - EP); **C21D 8/0226** (2013.01 - CN EP KR US); **C21D 8/0247** (2013.01 - EP); **C21D 8/0263** (2013.01 - EP); **C21D 9/46** (2013.01 - EP US); **C21D 9/50** (2013.01 - KR); **C22C 33/04** (2013.01 - CN); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/005** (2013.01 - CN EP US); **C22C 38/008** (2013.01 - CN EP US); **C22C 38/02** (2013.01 - CN EP US); **C22C 38/04** (2013.01 - CN EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/42** (2013.01 - CN EP KR US); **C22C 38/44** (2013.01 - CN EP KR US); **C22C 38/48** (2013.01 - CN EP KR US); **C22C 38/50** (2013.01 - CN EP KR US); **C22C 38/60** (2013.01 - CN EP US); **C21D 2211/002** (2013.01 - CN EP KR US); **C21D 2211/005** (2013.01 - CN EP); **C21D 2211/009** (2013.01 - CN EP KR US)

Citation (search report)
• [XIJ] KR 20150077549 A 20150708 - HYUNDAI STEEL CO [KR]
• [XAI] WO 2015087531 A1 20150618 - JFE STEEL CORP [JP]
• [XA] JP 2012122117 A 20120628 - JFE STEEL CORP
• [A] CN 105821314 A 20160803 - JIANGSU INST OF RES OF IRON AND STEEL SHA-STEEL CO LTD
• [A] CN 103882307 A 20140625 - ANGANG STEEL CO LTD
• [A] JP 2012057236 A 20120322 - SUMITOMO METAL IND
• [A] CN 110157982 A 20190823 - TANGSHAN HEAVY PLATE CO LTD, et al
• [A] WO 2015087532 A1 20150618 - JFE STEEL CORP [JP]
• See also references of WO 2023087350A1

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 4227432 A1 20230816; EP 4227432 A4 20240619; CN 114058975 A 20220218; KR 20230074416 A 20230530; US 2024018616 A1 20240118; WO 2023087350 A1 20230525

DOCDB simple family (application)
EP 21945363 A 20211125; CN 202111401895 A 20211119; CN 2021132953 W 20211125; KR 20227044900 A 20211125; US 202118013134 A 20211125