Title (en)

ELECTRO-GALVANIZED SUPER-STRENGTH DUAL-PHASE STEEL RESISTANT TO DELAYED CRACKING, AND MANUFACTURING METHOD THEREFOR

Title (de)

ELEKTROGALVANISIERTER SUPERFESTER ZWEIPHASENSTAHL MIT BESTÄNDIGKEIT GEGEN VERZÖGERTES KRACKEN UND HERSTELLUNGSVERFAHREN DAFÜR

Title (fr)

ACIER BIPHASÉ ÉLECTRO-GALVANISÉE À SUPER-RÉSISTANCE RÉSISTANT À LA FISSURATION DIFFÉRÉE ET SON PROCÉDÉ DE FABRICATION

Publication

**EP 4159887 A4 20231101 (EN)**

Application

**EP 21813639 A 20210525**

Priority

- CN 202010459228 A 20200527
- CN 2021095802 W 20210525

Abstract (en)

[origin: EP4159887A1] Disclosed is an electro-galvanized super-strength dual-phase steel resistant to delayed cracking. A matrix structure thereof is ferrite + tempered martensite and the steel contains the following chemical elements in the following mass percentages: C: 0.07-0.1%, Si: 0.05-0.3%, Mn: 2.0-2.6%, Cr: 0.2-0.6%, Mo: 0.1-0.25%, Al: 0.02-0.05%, Nb: 0.02-0.04%, and V: 0.06-0.2%. Also disclosed is a method for manufacturing the electro-galvanized super-strength dual-phase steel resistant to delayed cracking, the method comprising the steps of: smelting and continuous casting, hot rolling, cold rolling, annealing, tempering, leveling and electroplating. The electro-galvanized super-strength dual-phase steel resistant to delayed cracking according to the present invention not only has better mechanical properties, but also has excellent delayed cracking resistance and low initial hydrogen content.

IPC 8 full level

**C21D 1/18** (2006.01); **C21D 1/26** (2006.01); **C21D 8/02** (2006.01); **C21D 9/46** (2006.01); **C22C 38/02** (2006.01); **C22C 38/04** (2006.01); **C22C 38/06** (2006.01); **C22C 38/22** (2006.01); **C22C 38/24** (2006.01); **C22C 38/26** (2006.01); **C22C 38/32** (2006.01); **C22C 38/38** (2006.01)

CPC (source: CN EP US)

**B22D 11/16** (2013.01 - CN); **C21D 1/18** (2013.01 - EP); **C21D 1/26** (2013.01 - CN EP); **C21D 8/0205** (2013.01 - CN EP); **C21D 8/021** (2013.01 - EP); **C21D 8/0226** (2013.01 - CN EP US); **C21D 8/0236** (2013.01 - CN EP US); **C21D 8/0242** (2013.01 - EP); **C21D 8/0247** (2013.01 - CN EP); **C21D 8/0263** (2013.01 - EP); **C21D 8/0273** (2013.01 - US); **C21D 8/0278** (2013.01 - EP US); **C21D 9/46** (2013.01 - EP US); **C22C 38/001** (2013.01 - CN US); **C22C 38/002** (2013.01 - CN US); **C22C 38/02** (2013.01 - CN EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - CN EP US); **C22C 38/22** (2013.01 - CN EP US); **C22C 38/24** (2013.01 - CN EP US); **C22C 38/26** (2013.01 - CN EP US); **C22C 38/32** (2013.01 - EP US); **C22C 38/38** (2013.01 - CN EP); **C25D 3/22** (2013.01 - US); C21D 2211/004 (2013.01 - EP US); C21D 2211/005 (2013.01 - CN EP US); C21D 2211/008 (2013.01 - CN EP US)

Citation (search report)

- [A] US 2019211413 A1 20190711 - YANG LINGLING [JP], et al
- [A] US 2019085427 A1 20190321 - TAKASHIMA KATSUTOSHI [JP], et al
- [A] US 2013186529 A1 20130725 - TERAMOTO SHINYA [JP], et al

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 4159887 A1 20230405**; **EP 4159887 A4 20231101**; **EP 4159887 A9 20230621**; **EP 4159887 A9 20230830**; CA 3180458 A1 20211202; CN 113737108 A 20211203; JP 2023527197 A 20230627; US 2023243008 A1 20230803; WO 2021238915 A1 20211202

DOCDB simple family (application)

**EP 21813639 A 20210525**; CA 3180458 A 20210525; CN 202010459228 A 20200527; CN 2021095802 W 20210525; JP 2022572382 A 20210525; US 202117927771 A 20210525