

Title (en)

METHOD OF MANUFACTURING HOT PRESS-FORMED PART, AND HOT PRESS-FORMED PART

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES HEISSPRESSGEFORMTEN TEILS UND HEISSPRESSGEFORMTES TEIL

Title (fr)

PROCÉDÉ DE FABRICATION DE PRODUIT FORMÉ À LA PRESSE À CHAUD, ET PRODUIT FORMÉ À LA PRESSE À CHAUD

Publication

**EP 3199257 A4 20171206 (EN)**

Application

**EP 15843885 A 20150907**

Priority

- JP 2014195530 A 20140925
- JP 2015004533 W 20150907

Abstract (en)

[origin: EP3199257A1] A method of manufacturing a hot press-formed part by hot pressing a coated steel sheet formed with a Zn-Ni plating layer on a surface of a steel sheet includes: heating the coated steel sheet to a temperature range of Ac 3 transformation temperature to 1000°C; cooling the coated steel sheet to 550-410°C at a cooling rate of 100°C/s or higher by squeezing the coated steel sheet with a press tool for cooling having flat surfaces configured to contact the coated steel sheet; press forming the coated steel sheet with a tool of press forming to obtain a formed body, the press forming being initiated within 5 seconds after the cooling while the temperature of the coated steel sheet is 550-400°C; and quenching the formed body, while squeezing the formed body with the tool of press forming and holding at its press bottom dead center, to obtain a hot press-formed part.

IPC 8 full level

**B21D 22/20** (2006.01); **B21D 24/00** (2006.01); **C23C 30/00** (2006.01); **C25D 5/26** (2006.01)

CPC (source: EP KR US)

**B21D 22/20** (2013.01 - EP US); **B21D 22/201** (2013.01 - KR US); **B21D 22/208** (2013.01 - KR US); **B21D 24/00** (2013.01 - EP KR US); **B21D 37/16** (2013.01 - KR); **C21D 1/673** (2013.01 - EP KR US); **C21D 9/46** (2013.01 - EP US); **C22C 18/00** (2013.01 - EP US); **C22C 38/001** (2013.01 - EP US); **C22C 38/002** (2013.01 - EP US); **C22C 38/02** (2013.01 - EP US); **C22C 38/04** (2013.01 - EP US); **C22C 38/06** (2013.01 - EP US); **C22C 38/60** (2013.01 - EP US); **C23C 2/02** (2013.01 - EP US); **C23C 2/0224** (2022.08 - EP US); **C23C 2/024** (2022.08 - EP US); **C23C 2/06** (2013.01 - KR US); **C23C 2/26** (2013.01 - EP KR US); **C23C 30/00** (2013.01 - EP KR US); **C23F 17/00** (2013.01 - KR US); **C25D 3/565** (2013.01 - KR); **C25D 5/48** (2013.01 - KR)

Citation (search report)

- [E] EP 3135394 A1 20170301 - JFE STEEL CORP [JP]
- [XY] US 2014027026 A1 20140130 - SCHWINGHAMMER HARALD [AT], et al
- [XY] DE 102011053939 A1 20130328 - VOESTALPINE STAHL GMBH [AT]
- [XY] DE 102011053941 A1 20130328 - VOESTALPINE STAHL GMBH [AT]
- [Y] EP 2762243 A1 20140806 - KOBE STEEL LTD [JP]
- [A] EP 2495352 A1 20120905 - JFE STEEL CORP [JP]
- [A] WO 2013132821 A1 20130912 - JFE STEEL CORP [JP]
- [A] WO 2012097976 A1 20120726 - TATA STEEL IJMUIDEN BV [NL], et al
- [A] US 2014065007 A1 20140306 - NAITOU JUNYA [JP], et al
- [A] US 2012164472 A1 20120628 - KUHN PATRICK [DE], et al
- See references of WO 2016047058A1

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

DOCDB simple family (publication)

**EP 3199257 A1 20170802; EP 3199257 A4 20171206; EP 3199257 B1 20210224**; CN 106714996 A 20170524; CN 106714996 B 20190705; JP 2016064440 A 20160428; JP 6152836 B2 20170628; KR 20170036086 A 20170331; MX 2017003875 A 20170608; US 2017225215 A1 20170810; WO 2016047058 A1 20160331; WO 2016047058 A8 20170119

DOCDB simple family (application)

**EP 15843885 A 20150907**; CN 201580049874 A 20150907; JP 2014195530 A 20140925; JP 2015004533 W 20150907; KR 20177005467 A 20150907; MX 2017003875 A 20150907; US 201515502614 A 20150907