Title (en)

HOT-PRESSED MEMBER, METHOD FOR MANUFACTURING SAME, AND PLATED STEEL SHEET FOR HOT PRESSING

Title (de)

HEISSGEPRESSTES BAUTEIL, VERFAHREN ZU SEINER HERSTELLUNG UND PLATTIERTES STAHLBLECH FÜR HEISSPRESSEN

Title (fr)

ÉLÉMENT PRESSÉ À CHAUD, PROCÉDÉ POUR SA FABRICATION ET TÔLE D'ACIER PLAQUÉE POUR UN PRESSAGE À CHAUD

Publication

EP 4116457 A1 20230111 (EN)

Application

EP 20923408 A 20201029

Priority

- JP 2020036054 A 20200303
- JP 2020040696 W 20201029

Abstract (en)

Disclosed is a hot pressed member that has excellent painting layer adhesion and post-painting corrosion resistance when subjected to electrodeposition painting after zirconium-based chemical conversion treatment. A hot pressed member disclosed herein includes: a base steel sheet; a Fe-Zn-Al-Mg-based alloy coated layer containing an α-Fe phase and a Γ phase and formed on at least one surface of the base steel sheet at a coating weight per surface of 40-400 g/m²; and an oxide layer containing Zn, Al, and Mg and formed on the Fe-Zn-Al-Mg-based alloy coated layer, in which a ratio of I_Γ/I_α is 0.5 or less when measured by X-ray diffraction using a Co-Kα (wavelength: 1.79021 Å) radiation source at an incident angle of 25°, where Ir is an intensity of a diffraction peak of (411) plane of the Γ phase present in an angular range of 41.5°≤2θ≤43.0° and I_α is an intensity of a diffraction peak of (110) plane of the α-Fe phase present in an angular range of 51.0°≤2θ≤52.0°, and a sum of Al and Mg concentrations in the oxide layer is 28 atomic% or more.

IPC 8 full level

C23C 2/06 (2006.01); **B21D 22/20** (2006.01); **C21D 1/18** (2006.01); **C21D 1/673** (2006.01); **C21D 7/13** (2006.01); **C21D 8/02** (2006.01); **C21D 9/00** (2006.01); **C21D 9/46** (2006.01); **C21D 9/48** (2006.01); **C22C 18/04** (2006.01); **C22C 38/00** (2006.01); **C22C 38/60** (2006.01); **C23C 2/28** (2006.01); **C23C 2/40** (2006.01); **C23C 28/00** (2006.01)

CPC (source: EP KR US)

B21D 22/20 (2013.01 - EP KR); **C21D 1/18** (2013.01 - KR); **C21D 8/0242** (2013.01 - US); **C21D 8/0278** (2013.01 - EP); **C21D 9/46** (2013.01 - EP US); **C22C 18/04** (2013.01 - EP KR); **C22C 38/002** (2013.01 - US); **C22C 38/06** (2013.01 - US); **C23C 2/06** (2013.01 - EP); **C23C 2/12** (2013.01 - KR); **C23C 2/261** (2022.08 - KR US); **C23C 2/28** (2013.01 - EP KR US); **C23C 2/40** (2013.01 - EP); **C23C 28/3225** (2013.01 - EP); **C23C 28/345** (2013.01 - EP); **C23C 30/005** (2013.01 - US); C21D 1/18 (2013.01 - EP); C21D 1/673 (2013.01 - EP); C21D 7/13 (2013.01 - EP); C22C 38/00 (2013.01 - EP); C22C 38/60 (2013.01 - EP KR)

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 4116457 A1 20230111; **EP 4116457 A4 20230111**; **EP 4116457 B1 20240508**; CN 115053009 A 20220913; CN 115053009 B 20240531; JP 7056799 B2 20220419; JP WO2021176768 A1 20210910; KR 102666358 B1 20240514; KR 20220109459 A 20220804; MX 2022010448 A 20220919; US 2023095166 A1 20230330; WO 2021176768 A1 20210910

DOCDB simple family (application)

EP 20923408 A 20201029; CN 202080095524 A 20201029; JP 2020040696 W 20201029; JP 2021510138 A 20201029; KR 20227023141 A 20201029; MX 2022010448 A 20201029; US 202017905277 A 20201029