

Title (en)
METHOD OF MANUFACTURING AN ALUMINIUM ALLOY PLATE FOR VACUUM CHAMBER ELEMENTS

Title (de)
VERFAHREN ZUR HERSTELLUNG EINER ALUMINIUMLEGIERUNGSPLATTE FÜR VAKUUMKAMMERELEMENTE

Title (fr)
PROCÉDÉ DE FABRICATION DE PLAQUE D'ALUMINIUM POUR CHAMBRES À VIDE

Publication
EP 3922743 B1 20240724 (EN)

Application
EP 20179258 A 20200610

Priority
EP 20179258 A 20200610

Abstract (en)
[origin: EP3922743A1] The invention relates to a method of manufacturing an aluminium alloy plate for vacuum chamber elements, the method comprising the steps of: (a) providing a rolling feedstock material of an Al-Mg-Si aluminium alloy having a composition comprising of, in wt.%, Mg 0.80%-1.05%, Si 0.70%-1.0%, Mn 0.70%-0.90%, Fe up to 0.20%, Zn up to 0.08%, Cu up to 0.05%, Cr up to 0.03%, Ti up to 0.06%, unavoidable impurities and balance aluminium; (b) homogenizing of the rolling feedstock at a temperature in a range of 550-595°C; (c) hot-rolling of the homogenized rolling feedstock in one or more rolling steps to a hot-rolled plate having a thickness of at least 10 mm; (d) solution heat-treatment (SHT) of the hot rolled plate at a temperature in a range of 540-590°C; (e) rapid cooling the SHT plate; (f) stretching of the cooled SHT plate to obtain a permanent elongation from 1-5%; (g) artificial ageing of the stretched plate.

IPC 8 full level
C22C 21/02 (2006.01); **B01J 3/00** (2006.01); **C22C 21/06** (2006.01); **C22C 21/08** (2006.01); **C22F 1/00** (2006.01); **C22F 1/05** (2006.01); **C25D 11/10** (2006.01)

CPC (source: EP KR US)
C22C 21/02 (2013.01 - EP US); **C22C 21/06** (2013.01 - EP); **C22C 21/08** (2013.01 - EP KR US); **C22F 1/002** (2013.01 - EP US); **C22F 1/047** (2013.01 - KR); **C22F 1/05** (2013.01 - EP US); **C25D 11/08** (2013.01 - KR); **C25D 11/16** (2013.01 - US); **C25D 11/08** (2013.01 - EP)

Cited by
FR3136242A1; WO2023233090A1; WO2021250545A1

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 3922743 A1 20211215; EP 3922743 B1 20240724; CA 3181196 A1 20211216; CN 115698355 A 20230203; EP 4165223 A1 20230419; EP 4165223 B1 20241113; JP 2023524523 A 20230612; JP 7518198 B2 20240717; KR 20220156648 A 20221125; PL 3922743 T3 20240923; PT 3922743 T 20240822; US 2023220522 A1 20230713; WO 2021250545 A1 20211216

DOCDB simple family (application)
EP 20179258 A 20200610; CA 3181196 A 20210607; CN 202180040721 A 20210607; EP 21730296 A 20210607; IB 2021054983 W 20210607; JP 2022566688 A 20210607; KR 20227038536 A 20210607; PL 20179258 T 20200610; PT 20179258 T 20200610; US 202117999988 A 20210607