

Title (en)
FABRICATION METHOD OF FLAT-ROLLED PRODUCTS MADE OF ZINC-BASE ALLOYS INTENDED FOR USE IN BUILDING ENGINEERING

Title (de)
HERSTELLUNGSVERFAHREN FÜR FLACHGEWALZTE PRODUKTE AUS ZINKBASIERTE LEGIERUNGEN ZUR VERWENDUNG IN DER GEBÄUDETECHNIK

Title (fr)
PROCÉDÉ DE FABRICATION DE PRODUITS LAMINÉS PLATS CONSTITUÉS D'ALLIAGES À BASE DE ZINC DESTINÉS À ÊTRE UTILISÉS DANS LE DOMAINE DE LA CONSTRUCTION

Publication
EP 3187615 A1 20170705 (EN)

Application
EP 15460142 A 20151231

Priority
EP 15460142 A 20151231

Abstract (en)
A fabrication method of flat-rolled products intended for use in building engineering, made of Zn-Cu-Ti alloy with a chemical composition in accordance with the EN-988 standard, composed of at least two basic steps - continuous casting process of metal strip and not integrated rolling process of finished product in form of sheets, is characterized after casting step of metal strip with a thickness from 4 mm to 16 mm and width from 500 mm to 2000 mm the strip is submitted to process of heat treatment in soaking-pit at a temperature of 250 °C to 350 °C for a time of 10 minutes to 48 hours, then is subject to cooling down to ambient temperature, whereafter is heated up to a temperature ranging from 160 °C to 200 °C before starting the rolling operation and is being rolled in at least three roll passes until the finished product is obtained. In the course of rolling process the Zn-Cu-Ti alloy undergoes dynamic recrystallization at initial rolling temperature ranging from 160 °C to 200 °C, through coagulation of the zinc-titanium particles in Zn-Cu-Ti alloy microstructure achieved on the way of heat treatment. The reduction ratios in individual roll passes of the rolling process are less than 35 %. A finished product is susceptible to bending at a temperature > +5 °C. Zn-Cu-Ti alloy contains from 0,08 wt. % to 0,24 wt. % Cu, from 0,06 wt. % to 0,12 wt. % Ti, not more than 0,015 wt. % Al and rest Zn and also tramp elements Cd, Fe, Pb and Sn.

IPC 8 full level
C22F 1/16 (2006.01); **C22C 18/00** (2006.01)

CPC (source: EP)
C22C 18/00 (2013.01); **C22C 18/02** (2013.01); **C22F 1/165** (2013.01)

Citation (applicant)

- GB 1191994 A 19700513 - CENTRE NAT RECH METALL [BE]
- US 4051887 A 19771004 - GROTH VOLKER, et al
- PL 195433 A1 19780731 - REGIONALNY ZWIĄZEK SPÓŁDZIELNI
- PL 195253 B1 20070831 - ZAKŁADY METALURGICZNE SILESIA [PL]

Citation (search report)

- [A] DE 1558502 A1 19700416 - GRILLO WERKE AG
- [I] G. BOCZKAL ET AL: "THE BRITTLINESS OF Zn-Cu-Ti SHEET ALLOYS", ARCHIVES OF METALLURGY AND MATERIALS, vol. 60, no. 3, 12 September 2015 (2015-09-12), pages 2355 - 2360, XP055302946, DOI: 10.1515/amm-2015-0384

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