

Title (en)
ALUMINIUM ALLOY STRIPS FOR HEAT EXCHANGERS

Title (de)
BLECH AUS ALUMINIUM-LEGIERUNG FÜR WÄRMETAUSCHER

Title (fr)
BANDES EN ALLIAGE D'ALUMINIUM POUR ECHANGEURS THERMIQUES

Publication
EP 1446511 A2 20040818 (FR)

Application
EP 02790555 A 20021112

Priority
• FR 0203866 W 20021112
• FR 0114948 A 20011119

Abstract (en)
[origin: FR2832497A1] The invention concerns aluminium alloy strips less than 0.3 mm thick for making heat exchangers, consisting of (wt. %): Si<1.0, Fe<1.0, Cu<0.8, Mg<1.0, Mn<1.8, Zn<2.0, In<0.2, Sn<0.2, Bi<0.2, Ti<0.2, Cr<0.25, Zr<0.25, Si+Fe+Mn+Mg>0.8, other elements <0.05, each and <0.15 in total, having between the surface and half the thickness a difference of corrosion potential, measured relative to a saturated calomel electrode in accordance with the ASTM G69 standard, of at least 10 mV. The invention also concerns a method for making such strips by continuous casting in conditions promoting formation of segregations in the strip core, optionally hot rolling, cold rolling optionally with one or several intermediate or final annealing(s) of 1 to 20 hours at a temperature between 200 and 450 DEG C. The fins or separators made from the inventive strips have enhanced resistance to perforating corrosion.
[origin: FR2832497A1] Aluminum alloy strip with a thickness of less than 3 mm for the fabrication of brazed heat exchangers has the following composition, by wt %: Si less than 1.0; Cu less than 0.5; Fe less than 0.7; Mg less than 0.1; Mn : 0.8 - 1.5; Zn less than 2.0; In less than 0.2; Sn less than 0.2; Bi less than 0.2; Ti less than 0.2; Cr less than 0.25; Zr less than 0.25; and other elements less than 0.05 each and less than 0.15 in total. The aluminum alloy strip has a corrosion potential difference of at least 10 mV between its surface and its mid-thickness, measured with respect to a calomel saturated electrode according to the ASTM G69 Standard. An Independent claim is also included for a method for the fabrication of this aluminum alloy strip.

IPC 1-7
C22C 21/00

IPC 8 full level
B22D 11/00 (2006.01); **B22D 11/06** (2006.01); **C22C 21/00** (2006.01); **C22C 21/10** (2006.01); **C22F 1/00** (2006.01); **C22F 1/04** (2006.01); **C22F 1/053** (2006.01)

CPC (source: EP US)
B22D 11/003 (2013.01 - EP US); **B22D 11/0622** (2013.01 - EP US); **C22C 21/00** (2013.01 - EP US); **C22C 21/10** (2013.01 - EP US); **C22F 1/04** (2013.01 - EP US); **C22F 1/053** (2013.01 - EP US)

Citation (search report)
See references of WO 03044235A2

Citation (third parties)
Third party :
• WO 0153553 A1 20010726 - ALCAN INT LTD [CA], et al
• WO 9852707 A1 19981126 - PECHINEY RHENALU [FR], et al
• NISANCIOGLU K. ET AL: "Significance of Thermomechanical Processing in Determining Corrosion Behavior and Surface Quality of Aluminum Alloys", MATERIALS SCIENCE FORUM VOLS. 331-337, 2000, pages 1 - 15, XP003027816
• YUN M. ET AL: "An experimental Investigation of the Effect of Strip Thickness, Metallostatic Head and Tip Setback on the Productivity of a Twin-roll Caster", CAST METALS, vol. 4, no. 2, 1991, XP003027817

Cited by
WO2023187301A1; FR3134119A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

DOCDB simple family (publication)
FR 2832497 A1 20030523; FR 2832497 B1 20040507; AT E324470 T1 20060515; AU 2002365952 A1 20030610; AU 2002365952 A8 20030610; CA 2467681 A1 20030530; CA 2467681 C 20100420; DE 02790555 T1 20050331; DE 60211011 D1 20060601; DE 60211011 T2 20061130; EP 1446511 A2 20040818; EP 1446511 B1 20060426; ES 2263841 T3 20061216; JP 2005509750 A 20050414; JP 4484241 B2 20100616; US 2005034793 A1 20050217; US 2006260723 A1 20061123; US 7811394 B2 20101012; WO 03044235 A2 20030530; WO 03044235 A3 20031204

DOCDB simple family (application)
FR 0114948 A 20011119; AT 02790555 T 20021112; AU 2002365952 A 20021112; CA 2467681 A 20021112; DE 02790555 T 20021112; DE 60211011 T 20021112; EP 02790555 A 20021112; ES 02790555 T 20021112; FR 0203866 W 20021112; JP 2003545854 A 20021112; US 47317706 A 20060623; US 49511804 A 20040708