

Title (en)

IMPROVED METHOD FOR PROCESSING SHEET METAL MADE OF AN AL-CU-LI ALLOY

Title (de)

VERBESSERTES VERFAHREN ZUM BEARBEITEN VON METALLBLECHEN AUS EINER AL-CU-LI-LEGIERUNG

Title (fr)

PROCÉDÉ DE TRANSFORMATION AMÉLIORÉ DE TÔLES EN ALLIAGE AL-CU-LI

Publication

**EP 2766503 A1 20140820 (FR)**

Application

**EP 12788613 A 20121012**

Priority

- FR 1103155 A 20111014
- US 201161547289 P 20111014
- FR 2012000414 W 20121012

Abstract (en)

[origin: WO2013054013A1] The invention relates to a method for manufacturing a rolled product, in particular for the aeronautical industry, containing an aluminum alloy having a composition of 2.1 to 3.9 wt % of Cu, 0.7 to 2.0 wt % of Li, 0.1 to 1.0 wt % of Mg, 0 to 0.6 wt % of Ag, 0 to 1 wt % of Zn, at most 0.20 wt % of Fe + Si, at least one element selected from Zr, Mn, Cr, Se, Hf and Ti, the quantity of said element, if selected, being 0.5 to 0.18 wt % for Zr, 0.1 to 0.6 wt % for Mn, 0.05 to 0.3 wt % for Cr, 0.02 to 0.2 wt % for Se, 0.05 to 0.5 wt % for Hf, and 0.01 to 0.15 wt % for Ti, the other elements constituting at most 0.05 wt % each and 0.15 wt % total, the remainder being aluminum, said method involving flattening and/or pulling with a total deformation of at least 0.5% and less than 3%, and a short heat treatment in which the sheet metal reaches a temperature of between 130 and 170°C for 0.1 to 13 hours. The invention makes it possible, in particular, to simplify the process for shaping sheet metal for fuselages, and to improve the trade-off between static mechanical strength and damage tolerance properties.

IPC 8 full level

**C22C 21/12** (2006.01); **C22C 21/16** (2006.01); **C22F 1/057** (2006.01)

CPC (source: CN EP US)

**C22C 21/12** (2013.01 - EP US); **C22C 21/14** (2013.01 - CN); **C22C 21/16** (2013.01 - CN EP US); **C22C 21/18** (2013.01 - CN); **C22F 1/002** (2013.01 - CN); **C22F 1/057** (2013.01 - CN EP US)

Citation (search report)

See references of WO 2013054013A1

Cited by

WO2021111069A1; FR3104172A1; WO2023144492A1; FR3132306A1

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)

**WO 2013054013 A1 20130418**; BR 112014008685 A2 20170425; BR 112014008685 B1 20190424; CA 2851592 A1 20130418; CA 2851592 C 20200107; CN 103874775 A 20140618; CN 103874775 B 20160706; CN 106222504 A 20161214; CN 106222504 B 20191018; DE 12788613 T1 20150219; EP 2766503 A1 20140820; EP 2766503 B1 20161207; FR 2981365 A1 20130419; FR 2981365 B1 20180112; US 10968501 B2 20210406; US 11667994 B2 20230606; US 2013092294 A1 20130418; US 2019071753 A1 20190307

DOCDB simple family (application)

**FR 2012000414 W 20121012**; BR 112014008685 A 20121012; CA 2851592 A 20121012; CN 201280050425 A 20121012; CN 201610576196 A 20121012; DE 12788613 T 20121012; EP 12788613 A 20121012; FR 1103155 A 20111014; US 201213651002 A 20121012; US 201816184046 A 20181108