

Title (en)

Process for making avionic structural elements from an Al-Si-Mg alloy

Title (de)

Verfahren zur Herstellung von Flugzeugstrukturelementen aus Al-Si-Mg-Legierung

Title (fr)

Procédé de fabrication d'éléments de structure d'avions en alliage d'aluminium Al-Si-Mg

Publication

**EP 1143027 B1 20080611 (FR)**

Application

**EP 01420078 A 20010403**

Priority

FR 0004456 A 20000407

Abstract (en)

[origin: EP1143027A1] A method for the fabrication of aircraft structural elements from an aluminium alloy comprises the casting of a preformer with a specific composition, the hot, and possibly cold, transformation of this preformer to obtain a product, putting this product into solution at between 540 and 570 degrees C, annealing the product, the production of the structural element by forming and possibly welding and tempering the structural element, in one or more stages, at 175 degrees C for a time expressed in hours of between  $(-160+57 \gamma)$  and  $(-184+69 \gamma)$ , where  $\gamma$  is the sum of the % composition by weight of Si + 2Mg + 2Cu. The composition of the aluminium alloy is 0.7-1.3% Si, 0.6-1.1% Mg, 0.5-1.1% Cu, 0.3-0.8% Mn, less than 15 Zn, less than 0.3% Fe, less than 0.20% Zr, less than 0.25% Cr, with other elements each less than 0.05% and less than 0.15% in total, the rest being aluminium. An Independent claim is included for the aircraft structural fuselage element fabricated by this method.

IPC 8 full level

**C22F 1/05** (2006.01); **C22C 1/08** (2006.01); **C22F 1/057** (2006.01)

CPC (source: EP US)

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Citation (examination)

- EP 0787217 A1 19970806 - PECHINEY RHENALU [FR]
- R. DIF ET AL.: "6056-T78: A Corrosion Resistant Copper-rich 6XXX Alloy For Aerospace Applications", ALUMINUM ALLOYS, PROCEEDINGS OF ICAA-6, vol. 3, 1998

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