

Title (en)
METHOD FOR MANUFACTURING PRODUCTS MADE OF ALUMINIUM-COPPER-LITHIUM ALLOY WITH IMPROVED FATIGUE PROPERTIES AND DISTRIBUTOR FOR THIS METHOD

Title (de)
VERFAHREN ZUR HERSTELLUNG VON PRODUKTEN AUS EINER ALUMINIUM-KUPFER-LITHIUM-LEGIERUNG MIT VERBESSERTEN ERMÜDUNGSEIGENSCHAFTEN UND VERTEILER FÜR DIESES VERFAHREN

Title (fr)
PROCEDE DE FABRICATION DE PRODUITS EN ALLIAGE D'ALUMINIUM - CUIVRE - LITHIUM A PROPRIETES EN FATIGUE AMELIOREES ET DISTRIBUTEUR POUR CE PROCEDE

Publication
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Application
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Priority

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Abstract (en)
[origin: WO2015086921A2] The invention relates to a metal sheet with a thickness of at least 80 mm made of an aluminium alloy including, as weight percentages: Cu: 2.0 - 6.0; Li: 0.5 - 2.0; Mg: 0 - 1.0; Ag: 0 - 0.7; Zn 0 - 1.0; and at least one element selected among Zr, Mn, Cr, Se, Hf and Ti, the amount of said element, if chosen, being 0.05 to 0.20 wt % for Zr, 0.05 to 0.8 wt % for Mn, 0.05 to 0.3 wt % for Cr and for Se, 0.05 to 0.5 wt % for Hf and 0.01 to 0.15 wt % for Ti, Si ≤ 0.1; Fe ≤ 0.1; others ≤ 0.05 each and ≤ 0.15 in total, characterised in that in the tempered state the logarithmic mean of the fatigue thereof, as measured at mid-thickness in the TL direction on smooth test pieces with a maximum amplitude constraint of 242 MPa, a frequency of 50 Hz and a stress ratio of R = 0.1, is at least 250,000 cycles. The product according to the invention is obtained by a method which, in particular, has specific casting conditions. The use of a metal sheet according to an invention is advantageous for manufacturing an aeroplane structural element, preferably a spar, ribs or a frame.

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