Title (en)

LOW-DENSITY ALUMINIUM-COPPER-LITHIUM ALLOY PRODUCTS

Title (de)

ALUMINIUM-KUPFER-LITHIUM-LEGIERUNGSPRODUKTE MIT NIEDRIGER DICHTE

Title (fr)

PRODUITS EN ALLIAGE ALUMINIUM-CUIVRE-LITHIUM A FAIBLE DENSITE

Publication

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Application

EP 18724942 A 20180409

Priority

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Abstract (en)

[origin: CA3058096A1] The invention relates to a product made of an aluminium-based alloy comprising, by wt. %, Cu: 2.4-3.2; Li: 1.6-2.3; Mg: 0.3-0.9; Mn: 0.2-0.6; Zr: 0.12-0.18; such that Zr = - 0.06*Li + 0.242; Zn: < 1.0; Ag: < 0.15; Fe + Si = 0.20; optionally, at least one element selected from Ti, Sc, Cr, Hf and V, the content of the element, if selected, being: Ti: 0.01-0.1; Sc: 0.01-0.15; Cr: 0.01-0.3; Hf: 0.01-0.5; V: 0.01-0.3; other elements = 0.05 each and = 0.15 in total; the remainder being aluminium. The invention also relates to a method for manufacturing an as-cast aluminum alloy product according to the invention, comprising the following steps: preparing a liquid metal bath; casting an as-cast shape from said liquid metal bath; and solidifying the as-cast shape into a billet, a rolling plate or a forging blank; characterised in that the casting is performed without adding any grain refiner, or by adding a refiner comprising (i) Ti and (ii) B or C, such that the content of B from the refiner is less than 45 ppm, and that of C is less than 6 ppm, and/or characterised in that the casting is carried out, for an as-cast shape of thickness E or with a diameter D greater than 150 mm, at a casting rate v (mm/min) greater than 30 for a plate-type as-cast shape or 9000/D for a billet-type as-cast shape.

IPC 8 full level

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