

Title (en)

METHOD OF MANUFACTURING A HIGH-STRENGTH 6XXX-SERIES FORGING MATERIAL

Title (de)

VERFAHREN ZUR HERSTELLUNG VON EINER HOCHFESTEN 6XXX SERIE SCHMIEDELEGIERUNG

Title (fr)

PROCÉDÉ DE FABRICATION D'UN ALLIAGE DE 6XXX SERIES DE HAUTE RÉSISTANCE POUR FORGER.

Publication

EP 3299482 B1 20190529 (EN)

Application

EP 16189960 A 20160921

Priority

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Abstract (en)

[origin: EP3299482A1] An aluminium alloy forged product obtained by following steps: a) casting of a rolling ingot from a 6xxx aluminium alloy comprising: Si: 0.65-1.4%; Mg: 0.6-1.2%; Cu: # 1.5%; Mn: 0.4-1.0%; Fe: # 0.5%; Cr: up to 0.25%; Zr: up to 0.2%; Zn: # 0.25%; Ti: # 0.2%, the balance aluminium; b) homogenising the cast ingot at a temperature T_H which is 5°C to 80°C lower than solidus temperature T_S, typically T_H in the range of 460-570°C, for a duration between 2 and 24 hours; c) quenching said ingot down to room temperature by using water quench system; d) heating the homogenised ingot to a temperature T_h between (T_S-5°C) and (T_S-125°C); e) hot-rolling the re-heated ingot to a hot-mill exit gauge in the range of 2 to 40 mm, and wherein the hot-mill exit temperature is in the range of 200-360°C; f) heating cut-to-length rolled feedstock to forging temperature; g) forging; h) separate solutionising at a temperature between 460-560°C for durations between 20 sec. and 5 hours; i) quenching the forged and solutionised material down to room temperature; j) optionally room temperature ageing for a duration up to 30 days, and preferably between 6 hours and 30 days; k) artificially ageing to T6 temper at temperatures ranging from 150-210°C.

IPC 8 full level

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CPC (source: EP)

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Cited by

CN111041293A; CN111074121A; CN108588599A; CN112962006A; CN115595518A; CN113621855A; CN113881876A; AT522376A1; CN114107753A; AT522376B1; US10472708B2; CN114369748A; CN110938765A; CN114369776A; CN116403755A; CN112048648A; CN113166858A; CN114086036A; CN115807183A; CN109175174A; CN109666824A; CN112739839A; CN114457265A; CN115151665A; US11788178B2

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