

Title (en)
WELDED CONSTRUCTION OF AlMgMn ALLOY WITH IMPROVED MECHANICAL RESISTANCE

Title (de)
GESCHWEISSTE KONSTRUKTIONEN AUS EINER ALUMINIUM-MAGNESIUM-MANGAN LEGIERUNG MIT VERBESSERTEN MECHANISCHEN EIGENSCHAFTEN

Title (fr)
CONSTRUCTION SOUDEE EN ALLIAGE AlMgMn A RESISTANCE MECANIQUE AMELIOREE

Publication
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Application
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Priority

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- FR 9512065 A 19951009

Abstract (en)
[origin: WO9626299A1] Laminated or extruded products for obtaining welded AlMgMn-type aluminium alloy structures are described, said products having the following contents in weight percent: 3.0 < Mg < 5.0; 0.75 < Mn < 1.0; Fe < 0.25; Si < 0.25; Zn < 0.40; optionally, one or more components selected from Cr, Cu, Ti, Zr, such that: Cr < 0.25; Cu < 0.20; Ti < 0.20; Zr < 0.20; other components < 0.05 each and < 0.15 in all, wherein Mn + 2Zn > 0.75. The welded products have improved mechanical and fatigue resistance, while retaining their toughness and corrosion resistance, and are particularly suitable for applications in shipbuilding, utility vehicles and bicycle frames made of welded tubes.

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Citation (examination)

- US 5181969 A 19930126 - KOMATSUBARA TOSHIO [JP], et al
- J.S. Vetrano et al "Effect of Precipitate Structure on Hot Deformation of Al-Mg-Mn Alloys", "Advances in Hot Deformation Textures and Microstructures", TMS, 1994, pp 223-235
- B.A. Cassie et al, "Composition affects tensile strength of welded aluminium-magnesium alloy", Metal Construction and British Welding Journal, January 1973, pp 11-19
- Aluminum standards and data, 1986 Metric SI, The Aluminum Association, pp 15-16
- NIRM Fatigue Data Sheet No. 64, "Data Sheets on Fatigue Properties for Butt Welded Joints of A5083P-O (Al-4.5Mg-0.6Mn) Aluminium Alloy Plates", National Research Institute for Metals, Tokyo, Japan, date of issue: 25 decembre 1990

Cited by
FR3085968A1; US12024765B2; WO2020053507A1

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WO 9626299 A1 19960829; AR 001000 A1 19970827; AU 4930596 A 19960911; AU 690433 B2 19980423; AU 690433 C 20020606; CA 2211433 A1 19960829; CA 2211433 C 20090428; CN 1078622 C 20020130; CN 1175983 A 19980311; DE 69613812 D1 20010816; DE 69613812 T2 20020404; DE 804626 T1 19980129; DK 0804626 T3 20011112; EP 0804626 A1 19971105; EP 0804626 B1 20010711; EP 0909828 A2 19990421; EP 0909828 A3 19990616; ES 2161347 T3 20011201; FI 121471 B 20101130; FI 963290 A0 19960823; FI 963290 A 19960825; FR 2731019 A1 19960830; FR 2731019 B1 19970822; HK 1002201 A1 19980807; JP H11500783 A 19990119; NO 973681 D0 19970811; NO 973681 L 19970811; NZ 302706 A 19990429; PL 321887 A1 19971222; RU 2156319 C2 20000920; TR 199700843 T1 19980221; UA 49823 C2 20021015; US 2001050118 A1 20011213; US 6444059 B2 20020903; UY 24172 A1 19960415

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