

ALUMINIUM ALLOY VACUUM CHAMBER ELEMENTS STABLE AT HIGH TEMPERATURE

Abstract

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The invention relates to a vacuum chamber element obtained by machining and surface treatment of a plate of thickness at least equal to 10 mm made of aluminium alloy composed as follows (as percentages by weight), Si: 0.4 - 0.7, Mg: 0.4 - 1.0; the Mg/Si ratio as a percentage by weight being less than 1.8; Ti: 0.01 - 0.15, Fe 0.08 - 0.25; Cu
10 <0.35; Mn <0.4; Cr: <0.25; Zn <0.04; other elements <0.05 each and <0.15 in total, the rest aluminium, characterized in that the grain size of said plate is such that the mean linear intercept length $\bar{\ell}$, measured in plane L/TC according to standard ASTM E112, is at least equal to 350 μm between surface and $\frac{1}{2}$ thickness. The invention also relates to the method of manufacturing of such a vacuum chamber element. The products according to the
15 invention are particularly advantageous, particularly in terms of resistance to creep deformation at high temperature, while having high properties of corrosion resistance, homogeneity of properties in thickness and machinability.

[Fig. 3B]

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