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(54) Title: METHOD OF MANUFACTURING AN ALUMINIUM ALLOY PLATE FOR VACUUM CHAMBER ELEMENTS

(57) Abstract: Described herein is a method of manufacturing an aluminium alloy plate for vacuum chamber elements, valves, or total assemblies, the method comprising the steps of: (a) providing a rolling feedstock material of an Al-Mg-Si aluminium alloy having a composition comprising of, in wt.%, Mg 0.80%-1.05%, Si 0.70%-1.0%, Mn 0.70%-0.90%, Fe up to 0.20%, Zn up to 0.08%, Cu up to 0.05%, Cr up to 0.03%, Ti up to 0.06%, unavoidable impurities and balance aluminium; (b) homogenizing of the rolling feedstock at a temperature in a range of 550-595°C; (c) hot-rolling of the homogenized rolling feedstock in one or more rolling steps to a hot-rolled plate having a thickness of at least 10 mm; (d) solution heat-treatment (SHT) of the hot rolled plate at a temperature in a range of 540-590°C; (e) rapid cooling the SHT plate; (f) stretching of the cooled SHT plate to obtain a permanent elongation from 1-5%; (g) artificial ageing of the stretched plate.