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Appearance of anodised aluminium: Effect of alloy composition and prior surface finish

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**Title:**

Appearance of anodised aluminium: Effect of alloy composition and prior surface finish

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**Abstract:**

Effect of alloy composition and prior surface finish on the optical appearance of the anodised layer on aluminium alloys were investigated. Four commercial alloys namely AA1050, Peraluman 706, AA5754, and AA6082 were used for the investigation. Microstructure and surface morphology of the substrate prior to anodising were analysed using scanning electron microscopy and atomic force microscopy. The optical appearance of the anodised surface with and without sealing was investigated using a photography setup, photospectrometry and bidirectional reflectance distribution function. It was found that the roughness of the as-etched surface increases with the degree of alloying due to second phase particles making the reflection more diffuse, and that the as-etched surface morphology is similar to the oxide-substrate interface after anodising. Proper polishing is

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