

anodizing

functional and decorative refinement
of aluminum parts



A surface
aalberts technologies

anodizing

Sulphuric acid anodizing, better known as anodizing, is a coating developed for the functional and decorative improvement of aluminum parts. The coating is performed in an acid electrolyte at temperatures slightly below room temperature. The parts are connected with the anode and, in the course of the treatment, the parts surface is converted into an aluminum oxide layer.

The achievable layer thickness depends on the application, the desired layer properties and other parameters. For most applications, layer thickness values range from 5 to 20 µm.

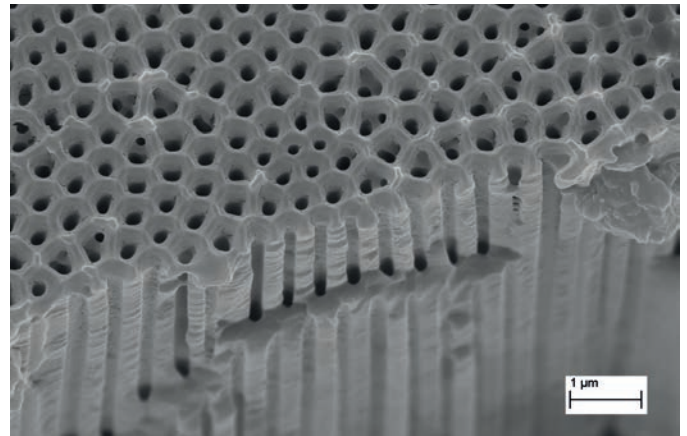
The oxide layer builds up for 1/3 on the aluminum and for 2/3 in the aluminum. This must be considered during the design phase.

Nearly all wrought, cast and die-cast aluminum alloys destined for industrial use can be anodized. However, the alloy has great influence on the color of the anodized part. An alloy out of the 3,000 series has grey color, a 7,000 alloy has more gold-like appearance.

For more information please consult your Aalberts surface technologies contact.



Anodized aluminum part.



SEM-recording of an anodized layer.

anodizing	maximum layer thickness	corrosion resistance	hardness
Properties	up to 20 µm depending on the alloy	max. 2,000 hours salt spray according to DIN EN ISO 9227 (acetic acid salt-spray test)	up to 250 HV 0.025, depending on the alloy
General specifications	MIL-8625 Type II		
	alloy	components	appearance
Influence of the alloy on the final color of the layer	1,000 series	unalloyed	clear / colorless
	2,000 series	alloyed with Cu	yellow / gold
	3,000 series	alloyed with Mn	grey
	5,000 series	alloyed with Mg	dark grey
	6,000 series	alloyed with Mg and Si	anthracite grey
	7,000 series	alloyed with Cu and Zn	gold
Available colors	clear, black, orange; others on request		