

# Comparison of

## Anodizing and Powder Coatings

### Anodizing Overview:

- Aluminum naturally develops a thin oxide layer (0.001 - 0.01 microns thick)
- Anodizing increases this aluminum oxide layer by electrochemical means
- The anodic film of aluminum oxide will act as a protective layer
- Anodizing is a conversion of the parent metal and therefore not a coating in the usual sense

### Powder Coating Overview:

- Powder Coatings is a dry finishing process using finely ground particles of pigment and resin, which are electrostatically charged and sprayed onto a part to be coated
- The coated parts are melted and fused into a smooth coating in an oven
- The resulting film is uniform, durable and environmentally friendly

Scoring: 1 = very bad; 5 = very good

	Anodizing	Score	Powder Coating	Score
Abrasion	Abrasion resistance is excellent	5	Powder coatings are tough and resilient	4
Chemical Resistance	Susceptible to attack from acidic pollutants and construction materials	3	Building materials can be easily cleaned without damage	4
Color & Gloss	Natural aluminum bronze black	1	Available in a wide variety	4
Durability	Good	4	Good	4
Environment	Acid solutions required during process	2	Solvent free process	5

<b>Substrate Cost</b>	Aluminum must be of high quality as imperfections will be visible	2	Coating thicknesses of >50 microns enable substrate imperfections to be hidden	4
<b>Consistency</b>	Process condition can cause shade difference	2	Colors remain consistent	4
<b>Repair</b>	Once scratched, anodizing cannot be repaired	1	Powder coatings can be "touched up"	4
<b>Cost</b>	Anodizing process is cost effective	4	Cost effective	5
<b>TOTAL</b>		22		35

### **Powder Coating offers:**

- Wide choice of colors and gloss levels
- Toughness and resilience
- Environmentally friendly
- Weathering stability
- Comparable applied cost of finished metal
- Repairable finish

*All information provided by Akzo Nobel, 03/21/05*