

## FACT SHEET

# AUTOMOTIVE APPLICATIONS OF ANODIZED ALUMINUM



**The Harley-Davidson 2002 V-Rod features anodized aluminum body components.**

Automotive applications represent the fastest growing market for aluminum. The drive toward higher fuel efficiency has demanded that vehicles be made lighter, so strong lightweight aluminum has been a natural material to replace components previously made of iron or steel. Thirty years ago, the weight of the aluminum in an average U.S. automobile was about 80 pounds. Today that number has grown impressively. The Plymouth Prowler for example, utilizes nearly a thousand pounds of aluminum. The Audi A8, with an all-aluminum space frame contains approximately 800 pounds of aluminum.



**Audi's luxury model A-8 helped pioneer the extensive use of automotive aluminum.**

## BENEFITS OF ANODIZING

**VALUE** – Anodizing is available at a lower initial cost than competing finishes, plus has low maintenance cost, so offers superb life-cycle value.

**DURABILITY** – Anodizing offers exceptional resistance to abrasion, far superior to that of paint. Because the anodic oxide is integral to the aluminum substrate, it simply cannot chip or peel.

**COLOR STABILITY** – Anodic oxide is unaffected by ultraviolet light rays and is resistant to salts, making anodizing a colorfast finish that is repeatable and reliable.

**MAINTENANCE** – Anodized surfaces, unlike stainless steel, will not show fingerprints. It resists scratching during value-added processing such as fabrication, installation, cleaning, or other handling. Soiled anodized aluminum may be cleaned with simple soap and water!

**AESTHETICS** – Anodizing yields a deep, rich metallic luster and is available in a complete range of gloss and color alternatives.

**ENVIRONMENTAL SAFETY** – Anodizing is a safe process that is not harmful to human health; it has little environmental impact and anodized aluminum is fully recyclable without the environmental risks associated with organic coatings.

**CAPACITY** – The anodizing industry is poised to partner with automotive parts suppliers who wish to outsource their finishing processes. There are anodizing operations sized and configured to match most any supply niche.

# AUTOMOTIVE APPLICATIONS OF ANODIZED ALUMINUM

**Aluminum offers automakers several distinct advantages. Aluminum is:**

- lightweight
- strong
- corrosion-resistant
- readily formable
- durable.

**Automakers use aluminum for a wide variety of components:**

- frames
- cylinder heads
- gear box housings
- wheels
- pistons
- brake systems
- transmission parts
- radiators
- bumpers
- luggage racks
- window trim
- and many others.

## **A Spectrum of Color**

A wide variety of colors are available. Anodized aluminum can even be processed to match stainless steel. Typical anodic oxide options for the automotive industry include:

- black
- clear
- bright dip (which looks much like chrome)
- interference coloring (which offers colors impervious to UV rays)
- pretreatment anodizing to enhance adhesive bonding or as paint undercoat
- dyes, both organic and inorganic, in a wide variety of colors
- hardcoat anodizing, for optimum abrasion resistance.

