ALUMINUM USE CONTINUES TO INCREASE AMONG AUTOMAKERS

ALUMINUM IN TRANSPORTATION
THE ALUMINUM ASSOCIATION, INC.

- Aluminum content at record-breaking 8.6 percent of average curb weight in 2009
- Aluminum cited as “very significant” technology to meet CAFE standards by 2020

BACKGROUND

As automakers continue to make improvements to their fleets, they are still looking to automotive aluminum for its fuel efficiency, safety and performance benefits. The latest Ducker Worldwide growth report confirms that aluminum represents 7.8 percent of vehicle curb weight internationally in today’s family cars, trucks and minivans. This increased use is due to the many cost and fuel efficiency benefits that aluminum offers.

This study sought to determine the average weight of aluminum components and systems in vehicles worldwide - including North America, Europe, Japan, China, Russia, India, South Korea and Brazil - and to use system average weights to determine the average aluminum content for the vehicles forecasted for production in 2009.

METHODOLOGIES

Ducker Worldwide has collected detailed aluminum-content data for light vehicles in North America since 1991, in Europe and Japan since 2000 and the remaining regions since 2007. For this study, light vehicles were defined as cars, sport utility/crossover vehicles, pickup trucks and vans for passenger and light commercial use. The data was collected on an Original Equipment Manufacturer (OEM), platformby-platform and product-by-product basis. Ducker conducted direct interviews with the purchasing and engineering personnel at the OEMs, tier suppliers and aluminum companies directly involved in making decisions to utilize aluminum for each component.

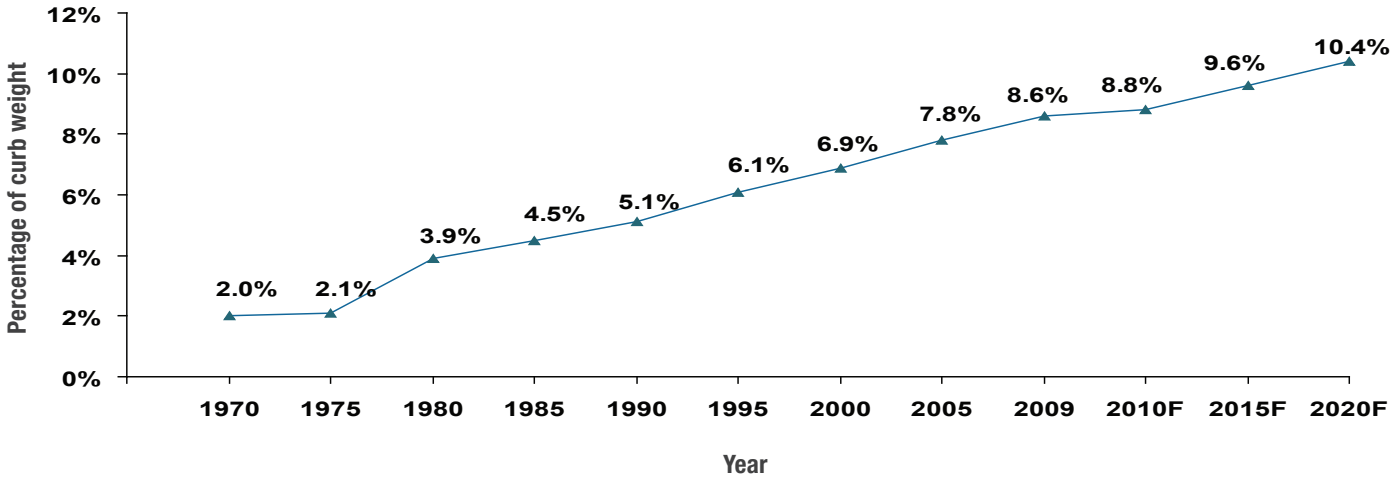
Nearly 100 components, more than 25 countries and 50 OEMs were studied for this project.

STUDY FINDINGS

In 2009, the percentage of automotive aluminum content reached an all-time high of 8.6 percent of curb weight in North American 2009 calendar year vehicles. The data shows that aluminum content for light vehicles is projected to continue its growing percentage of use, just as it has year-over-year for nearly four decades. The current projections indicate this growth will continue at a rate of approximately four to five pounds per vehicle, per year and approach 300 pounds per vehicle worldwide by 2020.

FIGURE 1

NORTH AMERICAN LIGHT VEHICLE ALUMINUM CONTENT AS A PERCENTAGE OF CURB WEIGHT

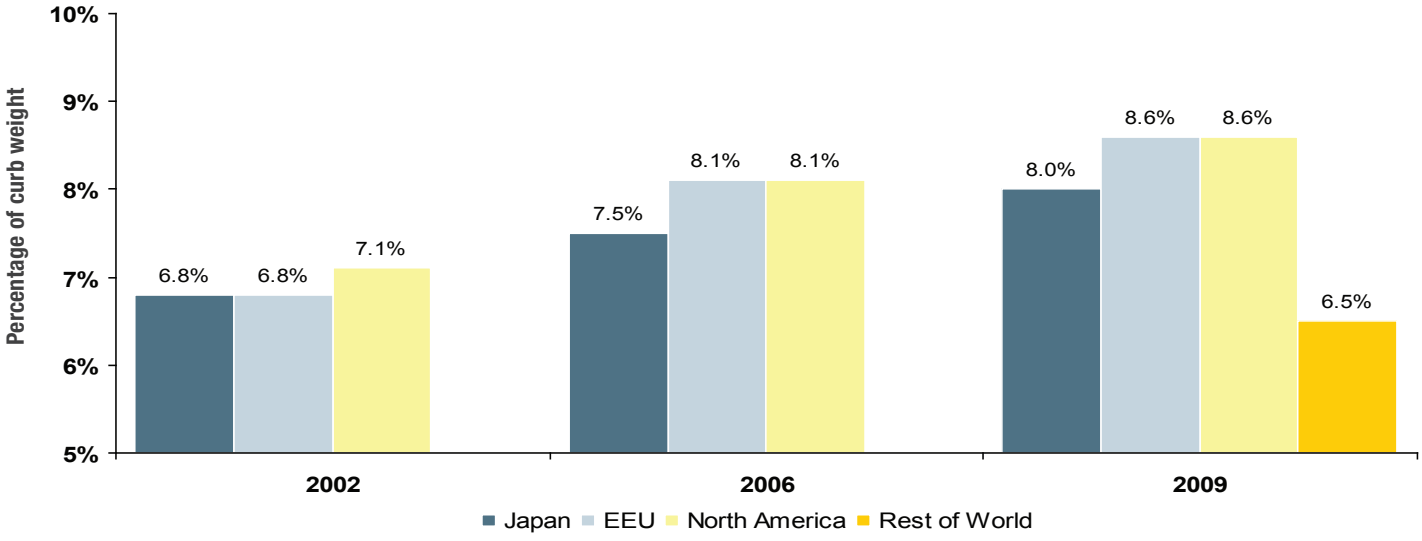


North America ranks as the world leader in automotive aluminum penetration where a net increase of more than eight pounds occured between 2006 and 2009 calendar year vehicles. More than 50 vehicles produced in North America contain over 10 percent of aluminum content. General Motors, Honda, Toyota, BMW, Hyundai and Volkswagen all increased the amount of aluminum in their North American vehicles from 2006 to 2009.

On a component basis, the study cites engine blocks and steering knuckles with the largest increase in growth from the 2006 study; with penetration of aluminum blocks reaching nearly 70 percent – the largest driver of aluminum growth in this decade. In addition, over 22 percent of 2009 vehicles made in the U.S. have aluminum hoods, an all-time record.

FIGURE 2

LIGHT VEHICLE ALUMINUM CONTENT AS A PERCENTAGE OF CURB WEIGHT - ALL VEHICLE SEGMENTS



Since the 2006 model year, aluminum content has also experienced steady growth in light vehicle applications in other regions of the world, but especially in Europe and Japan. Long-term growth rates remain in line with the significant growth rates of the late 1970s to early 1990s, despite the shift to smaller vehicles.

Worldwide aluminum content is projected to be 7.8 percent of the average light vehicle curb weight, growing to 28 to 30 billion pounds per year – up from the current 16 to 17 billion pounds – between now and 2020, not taking scrap and spare parts into account.

An estimated total of 67 vehicles from the European (49) and Japanese (18) markets contain over 400 pounds of finished aluminum. Looking ahead, recycled aluminum is expected to continue to represent at least 50 percent of the total amount of automotive aluminum used through 2020.

CONCLUSION

Automakers worldwide continue to recognize the value of automotive aluminum including its environmental, safety and performance advantages. As automakers continue to innovate and differentiate themselves with more fuel-efficient vehicles, the time to use light weight materials like aluminum is now. Coupled with smaller hybrid and diesel powertrains, automotive aluminum can maximize fuel efficiency while paying its consumer back faster at the fuel pump.

> "In our next-generation vehicles, we're going to go after weight in a big way."
> Derrick Kuzak, group vice president of global product development, Ford Motor Company

Overall, the amount of aluminum in vehicles is not only increasing, but also spreading across market segments and application types. Automotive aluminum is continuing to become a more common choice in vehicle technology as the industry moves to manufacturing more environmentally-friendly, fuel-efficient and walletconscious vehicles.

For more information, please visit us online at AluminumInTransportation.org