

Automotive Aluminum | Haomei Sheet Metal

Auto sheet metal means automotive aluminum used for processing panels and components in vehicles. Aluminium is the material of choice to address one of the key challenges of the automotive industry, lightweighting. Haomei Aluminum solutions help global automotive manufacturers produce lighter, safer and more fuel-efficient vehicles, as well as electric vehicles with greater range. Material lightweighting reduces CO2 emissions, ensuring a more sustainable future for the industry.

Aluminum alloy sheets for automobiles can be divided into two categories: general sheet and plate, which are used for various automobiles and used to manufacture various parts; body panels, namely ABS plates (**auto body sheet**), are exclusively for The outer covering sheet metal parts are stamped for passenger cars. The application of ABS in automobiles still has great potential, and its aluminization rate is still very low.

In 2011, the application of thin steel plates in automobiles around the world was about 20,000 kt. It can be calculated that the amount of aluminum plates should reach 9,000 kt. Of course, it is impossible for all of them to be used. Replacement of aluminum alloy plate, if 90% can be replaced by ABS aluminum alloy plate, the amount of aluminum plate should reach about 8000kt, but the consumption of ABS aluminum plate in the world this year is only 500kt, and aluminum aluminide is only 6.25%. Of course, it is a long process or almost impossible for the aluminization rate of automobile ABS plates to reach 60%, but it is completely possible to replace the thin steel plates used in vans and most special vehicles with aluminum, reaching 90% aluminum.

The Specification of Auto Sheet Metal are:

Application	Auto Parts	Alloy	Thickness(mm)	Width(mm)
Car Body	Automotive door	5182	0.15-600	20-2600
	Front and rear cover			
	Automobile fender			
	Car lift			
	Automotive roof	5083		
		5754		
Chassis	Bottom guard	5083/5754	0.15-600	20-2600
	Wheel hub	6061	0.30-600	150-2600
	Battery bottom plate			
Power System	Fuel Tank	5083	0.15-600	150-2600
		5052		
	Gas Tank	5083		
		5052		
	Power Battery Shell Material	3003		

The Properties of Automotive Aluminum are:

	Mechanical Properties
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Alloy		Ultimate Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)	n-value	r-value
5000 Series	AA5022	275	135	30	0.3	0.67
	AA5023	285	135	33	-	-
	AA5182	265	125	28	0.33	0.8
	AA5052	190	90	26	0.26	0.66
	AA5754	212	90	22	0.34	-
6000 Series	AA6022	275	155	31	0.25	0.6
	AA6016	235	130	28	0.23	0.7
	AA6111	290	160	28	0.26	0.6



The Advantages of Auto Aluminum are:

Continuous growth in automotive use

Use of automotive aluminum has grown continuously for 40 years. Aluminum is now second only to steel as the most used material in vehicles.

Recycled at record levels

At the end of a vehicle's life, nearly 90 percent of the aluminum on average is recycled.

Energy efficiency

Compared with a fleet of traditional steel vehicles, aluminum use saves the equivalent of 108 million barrels of crude oil in energy.

Safer

Pound for pound, aluminum can absorb twice the crash energy of mild steel. Larger crush zones can be designed without corresponding weight penalties.

