

THE BENEFITS OF ALUMINUM

- Aluminum is a light metal, about the third of the density of steel, copper, and brass.
- Aluminum has good corrosion resistance to common atmospheric and marine atmospheres. Its corrosion resistance and scratch resistance can be enhanced by anodizing.
- Aluminum has high reflectivity and can be used for decorative applications.
- Some aluminum alloys can match or even exceed the strength of common construction steel.
- Aluminum retains its toughness at very low temperatures, without becoming brittle like carbon steels.
- **Aluminum is a good conductor of heat and electricity. When measured by equal cross-sectional area, electrical grade aluminum has conductivity which is approximately 62% of electrical grade annealed copper. However, when compared using equal weight, the conductivity of aluminum is 204% of copper.**
- Aluminum is readily worked and formed using a wide variety of forming processes including deep-drawing and roll forming.
- Aluminum is non-toxic and is commonly used in contact with foodstuffs.
- Aluminum can be readily recycled.

ALUMINUM ALLOY DESIGNATIONS

Alloy Designation System for Wrought Sheet Products

Aluminum alloys for sheet products are identified by a four-digit numerical system which is administered by the *Aluminum Association*. The alloys are conveniently divided into eight groups based on their principal alloying element. The first digit identifies the alloy group as follows:

ALLOY GROUP	PRINCIPAL ALLOYING ELEMENT	
1xxx	Unalloyed Aluminum	Purity of 99.0% or Greater
2xxx	Copper	Heat Treatable Alloys
3xxx	Manganese	
4xxx	Silicon	Low Melting Point Alloys
5xxx	Magnesium	
6xxx	Magnesium and Silicon	Heat Treatable Alloys
7xxx	Zinc	Heat Treatable Alloys
8xxx	Other Elements	

The last two digits in the 1xxx group correspond with the two digits after the decimal which indicate the minimum aluminum content. For example the aluminum content of 1060 is 99.60% minimum, 1100 is 99.00% minimum, 1350 is 99.50% minimum and so on.

The last two digits of the other groups are sequential numbers issued by the Aluminum Association to ensure each alloy is uniquely identified.

The second digit in all the groups indicates a minor modification of the basic alloy. For instance, 5252 is the second modification of 5052 alloy.