LEADERS HOLDING CO.™

Est. 1971

Do you know about Aluminum?

Aluminum is the most abundant metal in the Earth's crust and is the 3rd most abundant element on Earth after oxygen and silicon, making up about 8% by weight of the Earth's solid surface. Its remarkable ability to resist corrosion and its low density make it a perfect material in the manufacturing of outdoor furniture.

Is Aluminum Valuable?

Although Aluminum is the most abundant metallic element in the Earth's crust, it is rare in its free form, and was once considered a precious metal *more valuable than gold.* The Washington monument was completed with an aluminum capstone in 1884, which was the largest single piece of cast aluminum at the time and was chosen because it was more expensive than silver, gold or platinum. Napoleon III, the emperor of France, once gave a banquet where the most honored guests were given aluminum utensils, while the others had to make do with gold. While aluminum is still a valued material due to its wide use in many industries, it has been produced in commercial quantities for just over 100 years, no longer making it the precious metal that it once was.

What is Special about Aluminum?

Aluminum has a variety of special characteristics that make it a widely used material in many industries and a perfect material for outdoor furniture making.

- It is durable and lightweight, making it easy to manage and transport.
- Aluminum is approximately one-third the density and stiffness of steel; making it soft enough to bend, machine, cast and weld into desired shapes when heated. Once cooled Aluminum becomes more rigid and strong enough to bear weight without breaking.
- Aluminum's remarkable ability to resist corrosion is due to a thin surface layer of aluminum oxide that forms when the metal is exposed to air, effectively preventing further oxidation. This corrosion resistance means that it will not rust and will maintain its structural integrity for years in tough outdoor environments.
- Aluminum is a non-ferrous metal, meaning that it contains no iron and is not magnetic and will not spark.

Where does Aluminum come from?

Aluminum is found naturally in combination with over 270 different minerals and does not occur often in nature as a free metal. Out of those 270 minerals it is not economically feasible to extract the pure aluminum from the large majority of them. Instead almost all metallic aluminum is produced from bauxite ore. Bauxite ore is formed by the decomposition of earth's rocks and soil, known as bedrock, in tropical climates. The primary mining areas for this special ore is Indonesia, Ghana, Jamaica and portions of Russia. Because of the high amount of energy need to chemically extract aluminum, compared to most metals, it is extracted in a non-traditional process using heat. Electrolysis is the specialized process in which the ore is dissolved into a molten material that reduces it into pure aluminum. This process is only possible because of aluminum's unique melting point. The energy needed to extract aluminum represents 20-40% of its cost; therefore most aluminum is produced only where electric power is plentiful and the most inexpensive.

What are the major uses of aluminum?

One of the most widely used metals; global production of this material exceeded that of any other metal except iron in 2005. It is used not only in furniture making, but also in household wiring, automotive and aircraft construction along with building construction, food canning and countless other fields.

How is Aluminum Recycled?

The most valuable beverage container to recycle, the aluminum can is only one of many kinds of scrap aluminum that can be re- cycled and re-used into the production of new products. Aluminum recycling has been a common practice since the early 1900s and is a fairly straightforward process in comparison to making new… simply melt the old metal. Because of the significant cost savings in the energy needed to recycle old aluminum, close to one-third of all the aluminum produced in the United States comes from recycled scrap.