

Aluminum vs. Steel



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When deciding on a gate you need to consider many factors – opening size, security level, whether it should be horizontal slide, swing or vertical lift, ornamental or standard, and even the material of the gate itself – aluminum or steel. While these materials may seem similar, the facts regarding the physical properties and internal mechanisms show that the material you select for your gate may be the most crucial decision of all.

Physical Properties

Steel is corrosive and aluminum is not. Even galvanized steel can rust in some areas. While all the joints in a steel gate may be welded, each joint is painted with only a cold galvanizing paint that breaks down over time. When the joints are exposed to rain, ice and snow, the breakdown process speeds up, decreasing the gate's product life. The appearance soon begins to deteriorate and you are left with an eyesore at the customer entrance.

Aluminum, however, is protected by a thin later of its natural corrosion properties, aluminum oxide. The aluminum oxide is a natural, rust-resistant shield. Aluminum oxide acts as a shield because when it comes in contact with water, the aluminum and oxygen molecules can shift apart more than 50% from their normal molecular positions. As a result, when the outer layer of aluminum oxide gets wet, its structure changes just enough to become chemically inert and unable to react rapidly with additional water molecules or atmospheric oxygen. Because of this change in molecular structure, aluminum gates remain aesthetically pleasing for years.

Not only does Tymetal use the naturally protected aluminum, but it also uses 6063-T6 and 6105-T5 alloys. These alloys were specifically designed for gate frame and track applications to enhance the corrosion resistance, tensile strength, and yield strength of aluminum. The structural integrity of the joints remains intact – and the opening to a facility is protected by a gate that both the installer and owner remain proud of year after year.

Roller Mechanism Comparisons

Our aluminum gates have another advantage over steel gates – their moving parts. Steel gates move over exposed rollers that have grease fittings for periodic lubrication. When more time sensitive issues require immediate attention, gate maintenance programs can be forgotten. Rollers are neglected. Again, when snow, ice and rain multiply the effects of everyday dust and grime, the rollers can bind at the most unexpected and inconvenient time. Gates become difficult to move and operators become overworked. An even bigger concern is the dangerous pinch points created by an exposed roller. These rollers are hazard-prone due to design.

Aluminum gates benefit from an enclosed truck and trolley that provides protection from the elements, dirt, and other debris. The truck assemblies glide on sealed ball bearings that require no maintenance – they will perform as specified regardless of climate conditions. Pinch points are eliminated without the need for roller covers.

Aluminum cantilever slide gates can even extend the life of operators. Because the truck track combination and the lighter weight put less strain on the operator, it uses less power to get the gate moving.

For more information, call 1-800-328-GATE (4283), or visit our website at www.tymetal.com

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Compare our manufacturing methods:

- All welders are individually certified per AWS.
- Welding process is AWS certified with exact methods and welding wire specifications that have been refined over 20 years.

Compare our service:

- Tymetal - relied upon for the most demanding applications, even called in to repair and retrofit systems provided by others.
- Drawings and specifications for standard or custom projects.
- Design services for special applications with experience (and references) for closing openings from 4' to 400'.

Safety by design and compliance with UL 325 and ASTM F2200:

- Tymetal cantilever gates have fully enclosed internal rollers to fully guard all weight bearing pinch points and to protect the rolling mechanisms from weather, soil, tampering, etc.
- Tymetal supplies vertical gap protectors to keep the vertical gaps at the opening gateposts to a 2 1/4" maximum.
- Screening is supplied for ornamental gates with picket spacing over 3" o/c.
- Leading and bottom edges are smooth without protrusions.
- All operators are UL listed, all necessary chain and hardware is supplied and the operated system is tested as a system to work effortlessly and reliably.

TYMETAL CORP.

Greenwich, NY
Pearland, TX

A FORT MILLER GROUP COMPANY
WWW.TYMETAL.COM

1-800-328-4283
FAX: 1-518-692-9404