SOUTHEASTERN CONSTRUCTION

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EVERYTHING YOU NEED TO KNOW ABOUT STAINLESS STEEL FABRICATED PRODUCTS

Stainless steel fabricated products are necessary for many industrial facilities. Southeastern Construction offers structural stainless steel fabricated products; equipment supports, platforms, stairs, gratings and handrails for power generation, wastewater treatment, and other industries where high-corrosion environments exist. Read on to learn more about fabricating steel products.

How is stainless steel fabricated?

In general, stainless steel is a low carbon steel. Chromium gives stainless steel its' corrosion resistant properties. Stainless steels that have higher chromium and nickle content offer a higher level of corrosion resistance. Some may even have molybdenum and nitrogen added. Though stainless steel has a great deal of strength and a high hardening rate, it is very ductile, which enables typical fabrication processes.

Stainless steel fabrication is available in many different grades, which are divided into several family groups based on metallurgical qualities.

The stainless-steel families for fabricating steel products are:

- **Austenitic:** Identified as the Type 300 series, austenitic stainless-steel products are quite common. Grades 304 (18 percent chromium and 8 percent nickel) and 316 (16 percent chromium, 10 percent nickel and 2 percent molybdenum) are two ubiquitous varieties. Most austenitic grades can be hardened by cold working but cannot be efficiently heat treated. Other shared characteristics include low magnetism, corrosion resistance, and good formability.
- **Ferritic:** Classified within the Type 400 series, ferritic stainless-steel products are usually iron-chromium alloys. They are not well-suited to thermal hardening methods but can be altered through cold working. Shared characteristics of ferritic stainless steels include magnetism, strong ductility and corrosion resistance. Type 430 (16 percent chromium) is a commonly used grade in this family.
- **Martensitic:** Also, part of the Type 400 series, martensitic steels are iron-chromium alloys as well. They differ from ferritic grades in their capacity to be hardened by heat treatment. Most other characteristics are similar to the ferritic family (good ductility, magnetism and corrosion resistance). Type 410 is a popular fabrication grade.
- **Duplex:** With a structure that combines ferritic and austenitic features, duplex alloys are composed of higher chromium levels (usually 18 to 28 percent) and often include nickel or molybdenum. They are stronger than austenitic grades and exhibit high localized corrosion resistance.
- **Precipitation-hardened:** Similar in chemical makeup to martensitic stainless steels, these alloys can achieve improved strength and corrosion resistance through the precipitation hardening process. A common fabricated grade is Type 17-4PH (17 percent chromium and 4 percent nickel). [1]

How stainless steel fabricated products are used:

Most industries have a need for structural stainless steel fabricated products in their high-corrosion environments. Support and access steel are often fabricated from stainless steel in these areas.

Southeastern Construction holds AISC and AWS Certifications for the highest quality steel fabrication no matter your application. Our fabrication facilities utilize the latest BIM, CNC fabrication, and project management technologies for your stainless-steel fabricated products. Request your quote today!

References

1. "Stainless Steel Fabricated Products"
https://www.thomasnet.com/articles/custom-manufacturing-fabricating/stainless-products/