

# Stainless Steel Fabricators in Perth Provide Guide to How Stainless Steel is Made



Western Stainless Solutions reveals what goes on “behind the curtain” to produce stainless steel products.

Perth, WA, 30 March 2015 - For those who have ever wondered how stainless steel is made, a stainless steel manufacturer in WA has produced a very short guide describing the process in simple terms. Western Stainless Solutions, a prolific stainless steel supplier, fabricator and manufacturer in Perth, has made it easy for prospective clients in any industry to fully understand what makes stainless steel such a popular choice for the hospitality, medical and mining industries.

## What is Stainless Steel?

Stainless steel is an alloy that combines steel and chromium to produce a metal that is resistant to rust and corrosion. Depending on the desired characteristics, it can also contain various amounts of nickel, molybdenum, austenite, ferrite, carbon, manganese and/or nitrogen. Stainless steel is produced in various varieties:

**Food and beverage industry:** Nickel is added for use in the food and beverage and medical industries. Nickel helps give stainless steel high cleanability, which is important for sanitation. It also helps protect the flavour of foods and beverages and is very durable.

**Austenitic:** Austenitic stainless steel has at least 6% of a combination of austenite and nickel. That gives it high ductility and high corrosion resistance.

**Ferrite:** Ferrite stainless steel contains ferrite. This produces a stainless steel that is very resistant to stress corrosion. However, it is more difficult to weld.

**Duplex:** Duplex stainless steel combines the elements found in ferritic and austenitic stainless steels. They are usually two times as strong as austenitic stainless steel while they provide more resistance to pitting, cracking and crevice corrosion than other varieties.

## Making Stainless Steel

Stainless steel is made by putting various combinations of the elements listed above (iron ore, chromium, nickel, molybdenum, ferrite, austenite, carbon, manganese and nitrogen) in an electric furnace. The furnace provides eight to twelve hours of intense heat. After they are mixed, they are cast into blooms, billets, slabs, rods and tube rounds.

Through a process called “hot rolling,” they are then formed into strips, plates, sheets, bars or wires. Then, they undergo a heat treatment called “annealing.” Annealing has to be executed within stringent parameters to ensure a product that is both durable and strong. The annealing process can form scaling on the surface, which has to be removed. This is accomplished by electrocleaning or pickling.

The pieces are then cut, either mechanically, by flame cutting or by plasma cutting. The stainless steel is then ground to its desired finish by grinding wheels, abrasive belts or cold rolling.

The stainless steel is then ready to be fabricated, which can be done by methods such as press drawing, press forming, roll forming, extrusion or forging. The pieces are then put together by resistance welding or fusion welding.

According to Paul Bartlett, Managing Director of Western Stainless Solutions: “It is a long, arduous process, but it is worth it when you see the finished product.”

Western Stainless Solutions is one of the largest stainless steel fabricators in Perth. They provide custom design stainless steel installation for a variety of applications for, among others, the medical, hospitality and mining industries. To read the original guide to how stainless steel is produced or for an estimate, call 1300 794 647 today or visit their website: <http://www.westernstainless.com.au/>.

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