WHY STAINLESS STEEL?

General Information
The many unique values provided by stainless steel make it a powerful candidate in materials selection. Engineers, specifiers and designers often underestimate or overlook these values because of what is viewed as the higher initial cost of stainless steel. However, over the total life of a project, stainless is often the best value option.

What is stainless steel? Stainless steels are a family of steels that are resistant to corrosion (rusting) and elevated temperature. They must contain at least 10.5 % chromium. The chromium reacts with the oxygen in the air to form an invisible, protective chrome-oxide surface layer. This layer helps to prevent "staining" (rusting) of the surface and gives the steel its unique stainless, corrosion resisting properties. This does not mean that stainless steel will never rust. There are many different stainless steels with unique chemical compositions. These chemistry differences influence strength, corrosion resistance, and cost. Higher levels of chromium and the addition of other alloying elements such as nickel and molybdenum improve the corrosion resistance and make them easier to fabricate. Our shower units are manufactured from Type 304 stainless steel in order to resist damage in salt water and chlorine environments. This steel should remain rust-free unless it becomes contaminated. The corrosion resistance and other useful properties of the steel are enhanced by increased chromium content and the addition of other elements such as molybdenum, nickel and nitrogen. There are more than 60 grades of stainless steel. However, the entire group can be divided into five classes. Each is identified by the alloying elements which affect their microstructure and for which each is named.

Ease of fabrication
Modern steel-making techniques mean that stainless can be cut, welded, formed, machined, and fabricated as readily as traditional steels.

What is Type 304 stainless steel? Type 304 stainless steel is 18% chromium and 8% nickel This is referred to sometimes as 18/8. The higher the numbers the more corrosion resistant the material.

Impact Resistance
The austenitic microstructure of the 300 series provides high toughness, from elevated temperatures to far below freezing, making these steels particularly suited to cryogenic applications.

Long term value
When the total life cycle costs are considered, stainless is often the least expensive material option.

Can stainless steel corrode or develop rust spots and staining? Stainless steel does not "rust" as you think of regular steel rusting with a red oxide on the surface that flakes off. If you see red rust it is probably because the product was contaminated. Steel or iron scratched the product and particles became embedded in the surface. These particles are much less corrosion resistant than the stainless steel and rust, making it appear that the stainless steel is rusting. **Stainless steel should never be cleaned with steel wool or an abrasive cleaner. Brillo and S.O.S. pads are made of steel wire. Iron particles from these pads will contaminate the surface. NEVER use an iron-based product on stainless steel.** Damp steel or cast iron can be left behind causing the stainless steel to stain (rust). In most cases, light staining can be removed with a fine abrasive cleaner, scouring powder, or non-metallic abrasive scouring pad such as a Scotch Brite® pad. Apply the cleaning product in the same direction as the polish to minimize damage. Stainless Steel cleaner is suggested and can be purchased at most home improvement stores. If there are obvious polishing lines rub in the same direction as the lines to minimize surface finish damage.

Cycle of Stainless Steel
To ensure a high quality of life, the materials that we use as consumers and manufacturers should meet not only technical performance standards, but have a Long Service Life, be Usable in a Great Number of Applications, and be Environmentally Friendly. Once their service is complete, they should be 100% Recyclable, thereby completing the life cycle to be used once again. Stainless Steel is such a material. The longevity of stainless is the result of the alloying composition and, therefore, it has a natural corrosion resistance. Nothing is applied to the surface that could add additional material to the environment. It does not need additional systems to protect the base metal, the metal itself will last. Stainless steel needs less maintenance and its hygienic qualities means that we do not have to use harsh cleaners to get a clean surface. There is little or nothing to dump into the drain that could have an environmental impact. Stainless steel products complete their service life. There is less concern about disposal since this material is 100% recyclable. In fact, over 50% of new stainless steel comes from old remelted stainless steel scrap, thereby completing the full life cycle.