Forms of Corrosion

General Corrosion

General corrosion is the most common form of corrosion. It is characterized by a relatively uniform attack of the entire area exposed to the corrosive environment.

The most common example is rusting of steel exposed to the outside weather. This is very visual and predictable.

A very rough ranking of stainless steel alloys for increasing the resistance to general corrosion is as follows: 304L, LDX2101, 316L, 2205, Alloy 20 and C-276.

Localized Corrosion

Localized corrosion is not as visual and is much more difficult to predict than general corrosion. Some examples of localized corrosion are stress corrosion, pitting and crevice corrosion and galvanic corrosion.

> Stress Corrosion is most commonly caused by chloride stress cracking in 316L. This is usually a combination of residual forming and welding stresses. If the chloride cannot be removed, a change of alloy to the duplex stainless LDX2101 and 2205 may be considered.
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> Pitting and Crevice Corrosion is also caused by chlorides and elevated temperatures. Molybdenum with nitrogen will help with this type of corrosion. The alloys 625 and C-276 are very high in the molybdenum and nitrogen elements.
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> Galvanic Corrosion is caused when two very dissimilar metals are in contact in a wet, corrosive environment where electrolysis may occur. This is not usually a problem with the stainless or nickel alloys, but is found more in the copper and aluminum alloys.