

Will NDS Iron Metal Grates Rust?

The two conditions that cause iron to rust are:

1. Moisture
2. Oxygen

The three factors that accelerate rusting are:

1. Carbon Dioxide
2. Acids
3. Impurities

Cast iron and ductile iron, like most metals, go through a natural oxidation process, which results in an outer protective coating known as “rust.” This rust layer shields the bulk iron from further oxidation. Think of rust as a corroded armor that protects against additional corrosion. This property allows iron to remain strong and intact for several decades. Unlike steel, cast iron and ductile iron are durable and will not flake.

Once the oxidation process has begun, cast iron and ductile iron will first turn a bright orange and after a few months fade to a chocolate brown, similar to the color of manhole covers.

“Preventing” Rust

Rust cannot be prevented entirely but the process can be slowed by introducing a buffer material between the iron and atmospheric oxygen and water. This can be achieved by applying linseed oil to the grates prior to installation. Another common practice is to spray paint or powder coat the metal grates. This coating must be reapplied whenever there is chipping to maintain rust protection.