What is Steel and how is it made?

There are two types of metals: Pure Metals and Alloys. Pure Metal or Native Metal is as the name suggests, it's 99% minimum pure in its natural state. i.e. not mixed with any other alloys. Examples of pure metal is Gold, Aluminium, Copper, Lead, and Iron. Pure Metals are combined with each other and other chemicals to make an Alloy.

Steel is made from the Pure Metal Iron combined with other chemical elements. Most of all Steel can be categorised into three types of Steel: 1. Carbon Steel, 2. Tool Steel, and 3. Stainless Steel.

Weather It make most of our products from either Mild Steel or Corten Steel. Both of which are Carbon Steels.

What is Cor-Ten Steel?

Corten Steel, sometimes referred to as Weathering Steel is a high-strength, low alloy Carbon Steel. Corten Steel was patented in 1933 by the United States Steel Corporation. Typically, it contains 0.2-0.5% copper, 0.5-1.5% chromium, and 0.1-0.2% phosphorus.

The name "Cor-Ten" is a mash-up of two words that summarise the performance of Corten Steel: COR-rosion resistance and TEN-sile strength. So basically, it has a high resistance to corrosion and is unbelievably strong and durable.

How does Corten resist corrosion?

The chemical composition of the metal ensures that the beautifully unique orange, red, and brown patina creates a protective outer layer that slows the degradation/ corrosion of the material. Also worth noting is that if the surface of the protective layer is scratched the exposed scratch begins to form its own protective layer. Its self-healing!

How long does Corten Steel take to Weather?

The protective patina forms on the surface of the Corten Steel through a cycle of wet and dry periods. The glorious British weather will take care of this! Our products are supplied in its raw steel state. i.e. without a patina.

Therefore, if you plan to install your Corten product in an environment where it's not exposed to rain. i.e. indoors or undercover then the patina will either not form or take an extended period of time to develop.

Under normal environmental conditions, you will see the patina start to develop in a matter of days, certainly after the first rainfall. A full patina will develop on your product in c.6 to 12 months depending on atmospheric conditions of the location of the product.

Atmospheric conditions such as: Heat, Humidity, Rainfall, Proximity to open water, and Proximity to Salt Water/ Coastal winds. The patina will continue to develop and change over time without losing its self-healing properties.

Corten Steel Don'ts:

We don't recommend Corten Steel within a 2-kilometer distance from the coast. The reason for this is that some sources suggest that the salt and chloride content from sea winds can damage the material. This is not to say that the sea salt will corrode your planter instantly. Far from it. The copper, chromium, and nickel compounds will still give the Corten protective qualities but just not as much as if the products were located more inland.

We don't recommend installing Corten products in contact with other metals. When Corten steel comes into contact with precious metals or other base metals this can cause contact corrosion on either material. Therefore avoid using high-alloyed stainless steel, copper, tin, zinc or aluminium in conjunction with Corten Steel.

We don't recommend exposing corten steel to permanently wet environments. This is because the protective patina requires wet and dry cycles to develop properly.

Care Instructions

As mentioned above, Corten Steel is very low maintenance. However, we do recommend regular checks and cleaning to make up part of 6 or 12 monthly maintenance schedule.

• Do not use any cleaning products on the steel. Using a stiff brush to remove any debrid/ build up/ soil on the surface of the steel is sufficient

• Remove any packaging from the product as soon as the delivery is received. Shrink wrap or other packaging materials may cause an uneven patina.

• Dissolve scale and grout spots with phosphoric acid and rinse with clear water. Never use cement film remover or diluted hydrochloric acid. Ensuring appropriate PPE is worn at all times.

• Avoid extreme heat to the material e.g. from working tools etc. Heat may warp the material.

• Ferrous particles must be removed immediately, as they can penetrate the passive layer of the COR-TEN steel and cause corrosion. Ferrite-free cleaning sponges or similar can be used for this purpose. If corrosion has already occurred, a pickling treatment may be necessary.

• Avoid contact with salt.

• Oil and grease can be removed with organic cleaning agents. All cleaning agent residues must be hosed down after cleaning.

• Residual paint can be removed with an alkaline or solvent-based cleaning agent. All cleaning agent residues must be hosed down after cleaning.