

Alloy Steels

Alloy steels are made by combining carbon steel with one or several alloying elements, such as manganese, silicon, nickel, titanium, copper, chromium and aluminum. These metals are added to produce specific properties that are not found in regular carbon steel. The elements are added in varying proportions (or combinations) making the material take on different aspects such as increased hardness, increased corrosion resistance, increased strength, improved formability (ductility); the weldability can also change.

The most important and desired changes in alloy steel are:

1. Increased hardenability.
2. Increased corrosion resistance.
3. Retention of hardness and strength.

Alloy steels contain alloying elements (e.g. Manganese, silicon, nickel, titanium, copper, chromium, and aluminum) in varying proportions in order to manipulate the steel's properties, such as its hardenability, corrosion resistance, strength, formability, weldability or ductility.

Applications for alloys steel include pipelines, auto parts, transformers, power generators and electric motors.

