**Welding**

Welding is a [fabrication process](https://fractory.com/common-metal-fabrication-processes/) that joins two or more metals using heat, pressure, or both to form a strong, permanent bond. Weldable materials generally include metals and thermoplastics, but welding other materials like wood are also possible.

Modern welding was pioneered in 1800 when Sir Humphry Davy struck an electric arc using a battery and two carbon electrodes. Since then, welding has developed into highly versatile forms, paving the way for its use in a variety of applications, from small DIY projects to large-scale manufacturing assemblies.

Different welding processes are a staple in most industry sectors and thus, let’s understand how these work and the principles behind them.

**How Does Welding Work?**

Welding is a high-heat process that melts the base materials. This is also the main differentiating factor from [soldering](https://fractory.com/soldering-explained/) and brazing where only the filler material is melted and no fusion between the parent materials occurs.

Welding works by joining two or more workpieces together at high temperatures. The heat causes a weld pool of molten material which after undergoing cooling, solidifies as one piece, forming a weld. The weld can even be stronger than the parent metals.

There are many different types of welding but all of them involve heat or pressure to melt the metals to create [welded joints](https://fractory.com/types-of-welding-joints/). The source of heat or pressure may vary depending on the application and the material used.

Metals are known as the most commonly welded materials, given their easy and straightforward welding principles. [Plastic welding](https://fractory.com/plastic-welding-methods-explained/) is also quite widespread but welding wood is just in its nascent phase.

The welding process is influenced by many factors, such as the need for specific additional tools, shielding gases, welding electrodes and filler material. Let’s have a closer look at some of the most common welding methods used today and find out what makes each of them unique.