

Welding, often seen as a humble job in a small workshop due to the fact that a lot of people that are less exposed and have less knowledge in this field, is actually a complex and crucial field. It's far from just a practical skill; it's an **art**. We could call welding as an art of starting from point A where you just have separated material with no use to a point B where you have materials assembled together with a very strong bond with an incredible use and sustainability. In recent years, it has become vital in various industries, playing a significant role in constructing everything from airports to cars and planes. So, it's not just about small workshops – it's a **serious study**.

Welding is often called an art because it relies on creativity, accuracy, and extensive knowledge. Before diving into the welding process, there's a lot of preparation. It's called the pre-welding phase where welders need to carefully clean and heat the materials, adjust the gas and machine settings (**intensity, voltage, polarity,...**), and wear the right safety gear.

The actual welding part is where the magic happens. Welders have to be mindful of their speed, angle, and the distance between the electrode and the materials to avoid defects such as holes.

After the welding is done, there's more work to do.

Sometimes, the joint needs cleaning, and there are various tests to make sure the weld is strong with efficiency and high-quality. These tests fall into two categories: destructive tests (DT) and non-destructive tests (NDT).

Destructive tests include things like pulling (tensile testing), bending (bend testing), and hitting (impact testing) the welded piece to see how it holds up.

Non-destructive tests use advanced methods and machines like ultrasound, X-rays, and magnetic particles to inspect the weld without damaging it.

Welding is crucial in industries like aviation, oil & gas, and nuclear, where precision and safety are vital. In a nutshell, welding is a valuable skill and technology that shapes our present and future.