

Types & Applications of Welding Presentation Student Notes Sheet

GMAW is Gas Metal Arc Welding a.k.a. MIG

This welding process uses a wire consumable electrode that matches the base metal, and a shielding gas to protect the arc.

There are four common modes of GMAW transfer:

- Short Circuit
- Globular
- Spray
- Pulse

GMAW is found in most welding shops, especially for production and fabrication applications.

FCAW is Flux Core Arc Welding

This is a wire feed process that uses a special type of wire. Flux core wire is a hollow wire with flux on the inside that helps to shield the arc and add properties to the weld.

There are two main categories of flux core wire:

- FCAW – S (self-shielding)
- FCAW – G (dual – shielding)

SMAW is Shielded Metal Arc Welding a.k.a. STICK

This welding process uses an consumable electrode, a.k.a. welding rod, which consists of a metal core wire that is covered with flux.

SMAW is commonly used in construction and maintenance because it requires minimal equipment and can be used outdoors. SMAW is also common in pipe welding because of the portability and the ability of the electrodes to penetrate better than other welding processes.



GTAW is Gas Tungsten Arc Welding a.k.a. TIG

This welding process uses a non-consumable electrode made of tungsten to create an arc and an inert shielding gas, typically argon, to protect the arc.

This type of welding is commonly used to weld light gauge stainless steel, aluminum and magnesium. Some common industry uses are:

- Bicycles
- motorcycles
- boats
- ships

