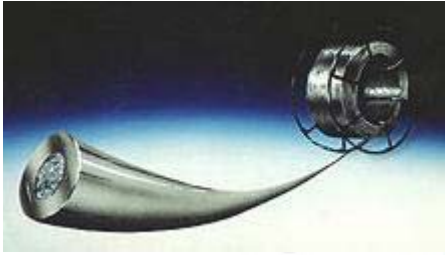
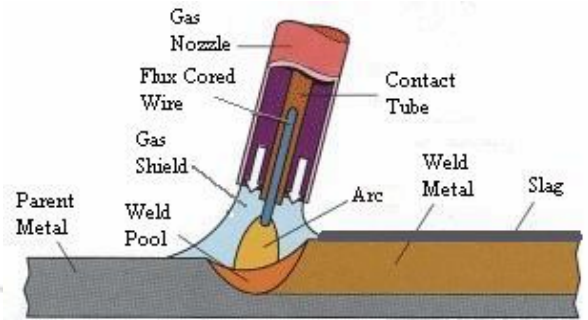


FLUX CORED ARC WELDING

GENERAL DESCRIPTION

Flux Cored Arc Welding (FCAW) is a welding process by fusion which is widely used on ferrous metal. The consumable electrode can have an interior flux or a mix of flux and metal powder and has a tubular form.



It's an easily automated process that is particularly interesting in high-deposition rate processes.

ENERGY SOURCE

FCAW has as its energy source an electrical arc that occurs between the fluxed cored wire and base metal in order to melt consumable electrode and base metal.

WELDING ZONE PROTECTION

Welding zone protection from atmosphere contamination is assured by the products in the electrode's flux (*self shielded flux cored arc welding*) and sometimes by additional gaseous protection (*gas shielded flux cored arc welding*). The slag created by the flux gives an additional protection during cooling time but has to be removed after that.

EQUIPMENT

FCAW uses a constant voltage welding machine and the process can use DCEP or DCEN polarity. For gas shielded flux cored arc welding, a gas bottle is needed.



ADVANTAGES

- A high-deposition rate process.
- High energy rates allow greater penetration and a lower number of melting defects.
- Metallurgical benefits from the flux such as the weld metal being protected initially from external factors until the flux is chipped away.
- It's an "all-position" process.
- No shielding gas needed making it suitable for outdoor welding and/or windy conditions.

DISADVANTAGES

- Irregular wire feed.
- Porosity when the gases (specifically those from the flux-core) escape the welded area before the metal hardens, leaving holes in the welded metal.
- More costly filler material/wire as compared to GMAW.
- Less suitable for applications that require painting.
- Slag removal spending time.
- High operator skill is required.

SECURITY

FCAW require adequate ventilation and the use of a sealed mask that will provide the welder with fresh air. Also eyes and skin should be protected by appropriate goggles and clothes.