

manufacturing process.

Classification

6) Different types of welding?
Plastic.

(1) Pressure welding:- Pressure welding refers to the application of pressure along with the use of suitable temperature. In these processes external pressure is applied to the parts being joined, often along with heat, to create a solid-state weld. Common type of pressure welding include:-

- (a) Friction welding
- (b) Forge welding
- (c) Resistance welding
- (d) Gas welding.

2) Fusion / Non-Pressure Welding:- Fusion welding is a category of welding processes in which the materials being joined are melted to create a fusion or molten pool. Once the molten pool solidifies, a strong bond is formed between the welded materials. Common types of fusion welding include:-

- (a) Gas welding
- (b) Arc welding
- (c) Thermit welding

3) Cold Welding:- Cold welding is a solid state welding process in which two materials are joined together at or near room temperature, without the need for melting or applying external heat. This process relies on the principle that when clean metal surfaces come into intimate contact in an inert environment, they can join together through sharing of electrons. Common types of cold welding include:-

- (a) Butt and lap joints

7) Different types of welding

(i) Gas Welding:- Gas welding typically refers to oxy-acetylene welding, a process that uses a mixture of oxygen and acetylene gases to produce a flame for welding. Commonly used for cutting, welding, brazing and heating metals. Gas welding is further classified as

- (a) Oxyacetylene welding
- (b) Airacetylene welding
- (c) Oxyhydrogen welding

ii) Arc Welding:- Arc welding is a welding process that uses an electric arc to melt and join metals. Arc welding involves creating an electric arc between the welding electrode and the workpieces. The heat generated by the arc melts the material and upon cooling, solid bond is formed. Types Further, types of arc welding are:-

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|------------------------|--------------------------------|
| (a) Carbon welding | (e) Electroslag arc welding |
| (b) Plasma arc welding | (f) Flux cored arc welding |
| (c) Submerged welding | (g) Metal inert gas welding |
| (d) Metal arc welding | (h) Tungsten inert gas welding |

iii) Resistance Welding:- Resistance welding is a process that joins metals by applying pressure and passing current through the metal parts being joined. Heat is generated by the resistance to electric current flow at the joint interface. This heat causes localized melting and the formation of weld. Types of Resistance welding includes:-

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|------------------------|------------------------|
| (a) Spot welding | (d) Percussion welding |
| (b) Projection welding | (e) Seam welding |
| (c) Butt welding | |

iv) Thermite Welding:- It is process that joins two pieces of metal using a chemical reaction to create intense heat. The process involves a chemical rxn between powdered metal and metal oxide. This rxn releases a large amount of heat, melting both metal powder and the workpieces. Types of Thermite welding include:-

- (a) Solid state welding
- (b) Friction welding
- (c) Explosive welding
- (d) Ultrasonic welding
- (e) Diffusion welding

(8) What is Arc welding?

Arc welding is a welding process that uses an electric arc to melt and join metals. Arc welding involves creating an electric arc between the welding electrode and the workpiece. The heat generated by the arc melts the material and upon cooling a solid bond is formed. It is widely used in construction, fabrication, automotive, and other industries. Types of Arc welding are:

- (a) Carbon welding
- (b) Plasma arc
- (c) Submerged
- (d) Metal arc
- (e) Electroslag
- (f) Flux cored arc
- (g) Metal inert gas
- (h) Tungsten inert gas
- (i) Atomic Hydrogen gas

(9) How many different flames are produced in gas welding?

- (a) Carburizing flames: Carburizing flame is one in which there is an excess of acetylene.
- (b) Neutral flames: It is well defined inner cone with a surrounding envelope consisting of equal balance of oxygen and acetylene.
- (c) Oxidizing flame: An oxidizing flame is one in which there is an excess of oxygen.