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# MODULE A

## Introduction<sup>A</sup> to the problems of welding

weld metal



## weld metal

- Most of the heated portion of the welded weld metal.
- It to above the liquidus temperature.
- On making the weld metal is involved in both the base material and additive material, or only a base material.
- Share remelted base material, the weld metal is known as the degree of mixing.
- The It is dependent on the technology used and the welding position, laying a layer of weld metal (root - filling).
- From weld metal is required to have characteristics as identical as possible to the base materials to be welded.



## weld metal

- ▶ The resulting weld metal properties are given by a set of materials, metallurgical and technological factors that are manifested in three basic stages of the formation of the weld metal.
- ▶ They are it:
  - ▶ Stage melting and metallurgical reactions
  - ▶ Stage pour
  - ▶ Stage structural transformation



## Stage melting and metallurgical reactions

- Heating the weld area is melted base material and the filler material melts.



## Additional materials used for welding must meet the following requirements:

1. suitable ionizing additives to facilitate ignition of the arc and stabilize the arc during welding.
  2. Protect heat-adhesive metal from exposure to the ambient atmosphere.
  3. melted the metal must have a suitable viscosity, melting point and surface tension.
  4. Ensure deoxidation of the weld metal.
  5. Refine weld metal, weld metal denitrified.
  6. Shape contention.
  7. alloyed welds.
  8. Appropriate Operational characteristics (light slag removability).
  9. health safe, producing a minimum of air pollutants, little susceptible to getting wet, tacky.
- The properties of the weld metal is also determined by the process of metallurgical reactions between the weld metal and slag, which is formed by melting the electrode casing or fluxes used in welding.