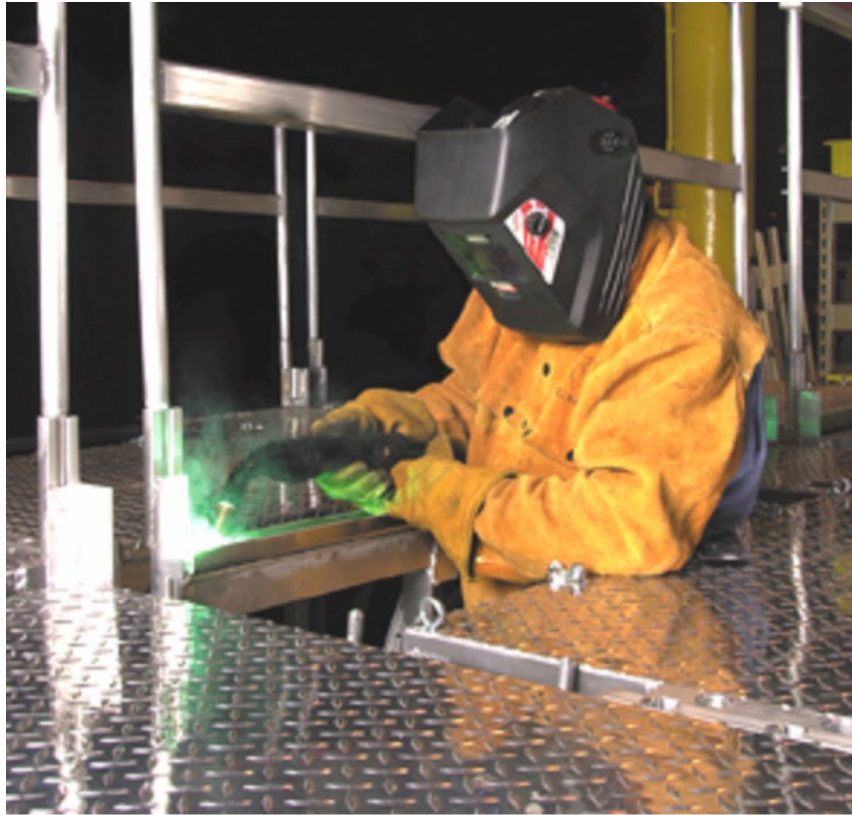


## Aluminum Alloy Arc Welding #1

- Aluminum is one of the most weldable industrial metals
- Aluminum's high **thermal conductivity (rate at which heat flows through metal)** and low melting point can lead to **burnthrough (excessive melting of the base metal caused by too much heat)** and warping
- Aluminum is **3** times lighter than steel but when alloyed with other elements can be stronger than steel. It conducts electricity **6** times better than steel and its thermal conductivity is **5** times higher
- Steel welds can be made stronger than the base metal, but in most cases, aluminum welds will be weaker than the base metal because the welding heat softens the weld area, causing it to lose some strength. This is especially true if the alloy experiences **cold working (the shaping of metal at temperatures substantially below the point of recrystallization, which adds strength and hardness)**. Adding heat to aluminum that has been cold worked softens it, making it weaker



Aluminum is one of the most weldable metals in industry today.

- Aluminum welding is not difficult, just different than working with other metals. Its unique properties must be considered before choosing a welding process, electrode, filler metal, power source and shielding gas