



*You see a welder. We see a nation builder.*

## **SMARTWELD HIGH PRESSURE TUBE & PIPE WELDING TRAINING IN ALL POSITION BY GTAW + SMAW PROCESSES – WITH OPTIONAL 6GR WELDING QUALIFICATION**

**Course Code:** SW-3

**No. of Seats:** 6 per batch

**Duration:** 8 weeks + 2 weeks optional for 6GR

**Dates & Fees:** See Course Schedule

### **COURSE OBJECTIVE:**

Smart, conversant & skilled structural welder means learning to communicate effectively, retrieve information, visualize issues from multiple perspectives and resolve the difficulty of quality, rejection or re-work. This course will enable manual GTAW/SMAW welders to step up the ladder in welding hierarchy by qualifying themselves, as needed by the ASME Boiler & Pressure Vessel Code Section IX or equivalent, for wider acceptance in high tech industry i.e. Boiler, Chemical, Fertilizer, Pressure Vessel, Petroleum, Gas & Energy sectors.

**COURSE DURATION:** (Theory: 80 hrs & Practice: 160 hrs) + (Theory: 10 hrs & Practice: 50 hrs) Optional.

### **COURSE CONTENT**

#### **THEORY: 120 hrs**

- Role of high pressure tube/pipe welders in industry;
- Introduction & applications of commonly used metals- in Cutting/Gouging/Welding/Brazing processes
- Safety precaution in SMAW/GTAW welding
- Choice of welding power source, polarity & accessories for SMAW welding; Familiarization with GTAW /TIG welding Equipment and Accessories
- Selection of Tungsten Electrodes and Shielding Gases and Handling of Equipment
- Usage of trailing & purging gases
- SMAW welding electrodes coding, classification & applications
- Selection of GTAW Filler Materials and Care in their Storage and Handling
- Preparation of Pipe Weld Joints
- Types of pipes & pipe schedule
- Basics of reading blueprint drawings & welding symbols
- Different types of welding positions, parameter & techniques
- Commonly used metals & their welding attributes
- Discontinuities in welding – causes & remedies
- WPS & Welder's Performance Qualification
- Introduction to Destructive & Non-Destructive test techniques
- Module on employability Skills

#### **PRACTICAL: 160 + 50 hrs (Optional for 6G-R)**

Practical session with various electrode types, joint types, techniques, weld processes.

**ELIGIBILITY:** SSC+, ITI, Baseweld or Smartweld-structural welders, trained & qualified by the AdorWAC with 3-4 years of work experience in all positions.

### **COURSE EVALUATION:**

Progress of SMARTWELD high pressure welders will be regularly reviewed at the weekend for theory & practice by AdorWAC faculty. They will also have to pass Theory & Skill tests by Visual, Radiographic or Bend-Tests in all positions at the end of their training curriculum.

Certification will be done as per ASME Boiler & Pressure Vessel Code Section IX or equivalent. 6G-R welders will be certified as required by the ANSI/AWS D1.1-XX Structural Welding Code-Steel.

### **OUTCOMES:**

The student / welder upon successful completion of this course will be eligible to perform as qualified high pressure Tube/Pipe welder, up to 6G positions, manually by GTAW & SMAW welding processes in production & maintenance welding shop/site by using all types of filler rods and flux covered steel electrodes.

### **Note:**

The above course can be delivered in English, Hindi or Marathi.