ASME Certified Brazing Training

8 hour training

Instructor: Dana Johnson or Coy Rosenlieb

Total Cost per person: $525
Breakdown: $325.00 per person (minimum 2 trainees)
ASME Brazing certification $200.00 per person

Credentials and Certifications
Washington County Career Center Certificate of Completion
ASME Brazing Certification

Training Outline

1. The Torch
    - Setting the Torch
        a. Use the regulators to set to a neutral flame

    - Appropriate Use of Heat (1100-1500 degrees F)
        a. If less than 1100 degrees F filler metal will not flow into joint.
        b. If greater than 1500 degrees F the copper tube and fitting will oxidize and the filler metal will not flow into joint.

    - Working the flame
        a. Heat the tube first and then direct flame toward the fitting to heat it. This will remove the air from between the tube and fitting and allow capillary action to draw filler metal into the joint.
        b. Do not direct flame onto filler rod to melt the rod. Allow heat from copper tube and fitting to melt the rod.

    - Types and Use of Flux
        a. Use Flux if brazing dissimilar metals.

2. The Use of "Heat-Stop" and Fire-Cloth
    a. Use to prevent heat from damaging a nearby joint or component.

3. Types of Joints to Braze
    a. Use a Tee joint to braze in three positions: Vertical up, Vertical down and

Horizontal.

4. Comparison: Good and Bad Joints
   a. View pictures of good and bad joints.
   b. Discuss the defects in the bad joints and how to prevent these from occurring.

5. What's expected of a properly brazed joint
   a. Joint completely filled with brazing material.
   b. No excessive filler metal on the outside of the joint.
   c. Tubing and fitting not damaged due to the use of excessive heat.

6. Demonstrate how joints are cut and graded
   a. Joints are cut apart with a cutoff disk to expose the inside of the joint.
   b. Joints are inspected to look for gaps in the filler metal and that filler metal extends the full length of the joint.
   c. Any defects found are noted and discussion held on what caused the defect and how to prevent.

7. Practice proper brazing techniques
   a. Trainees are observed while brazing joints to ensure they are working the flame properly to heat the joint and allowing for the metal to melt the filler rod.
   b. Each joint is cut and inspected for defects.
   c. Trainees will continue to practice making joints until they can successfully make repeated good joints.
   d. Once Instructor approves, a certification Tee will be brazed to be sent to the AWS Certified Welding Inspector for certification.

8. ASME Brazing Certification: Pass/Fail
   1. As per Section IX of the ASME Boiler and Pressure Vessel Code, Part QB, requirements for Brazing.
   a. The total area of defects (unbrazed areas, flux inclusions, etc.) shall not exceed 25% of the total area of any individual faying surface.
   b. The sum of the lengths of the defects measured on any one line in the direction of the lap shall not exceed 25% of the lap.
   c. No defect shall extend continuously from one edge of the joint to the other edge, irrespective of the direction of the defect.

9. Provide review for those who did not pass
   a. The certification sample is returned from the CWI with and defects marked.
   b. Defects are discussed with the trainee to determine the cause of the defect

and how to prevent.

c. Trainee is given additional time to practice before retesting.

Washington County Career Center, Adult Technical Training is Accredited by Accrediting Commission for Career Schools and Colleges (ACCSC). ACCSC holds accreditation with US Dept. of Educ. ACCSC sets multiple Standards of Accreditation by which WCCC must comply to ensure quality programs, experienced instructors, optimal graduation rates, and preferred job placement rates.