

# WELD A104: WELD TEST GTAW

Item	Value
Curriculum Committee Approval Date	09/23/2015
Top Code	095650 - Welding Technology
Units	.5 Total Units
Hours	27 Total Hours (Lab Hours 27)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	Yes
Grading Policy	Pass/No Pass (B)

## Course Description

Weld testing for mastery of level I in Gas Tungsten Arc Welding process. A Welder Qualification Certification will be issued. When completed, may lead to Certificate of Specialization. Enroll only when ready to test. Fee charged for qualification test. PREREQUISITE: WELD A100, WELD A101, or concurrent enrollment, or industry experience. Transfer Credit: CSU.

## Course Level Student Learning Outcome(s)

1. Complete a weld or welds for qualification for certification to an American National Standard Institute codes: American Welding Society; American Society of Mechanical Engineers; Military Specification; or other welding qualification tests.

## Course Objectives

- 1. Demonstrate mastery in joint assembly.
- 2. Demonstrate an understanding of welding machine adjustments.
- 3. Demonstrate an understanding of electrode selection.
- 4. Demonstrate an understanding of electric rod selection for alloyed metals.
- 5. Demonstrate and understanding of shielding gases and their use.
- 6. Explain polarity selection for this welding process.
- 7. Demonstrate correct material preparation before welding.
- 8. Demonstrate correct torch and rod manipulation for root pass or passes.
- 9. Demonstrate correct torch and rod manipulation for intermediate weld passes.
- 10. Demonstrate correct torch and rod manipulation for cover pass or passes.

## Lecture Content

lab only course

## Lab Content

Preparation of Test Plates. Determine test plate alloy and thickness (refer to code requirements); prepare test plates by flame or machine cutting to correct bevel angles; if open root, prepare root face; if

backing or back gas shielding is required prepare and apply backing in accordance with code requirements. Test Procedures Determine applicable American Nation Standards Institute code for testing the welder on the code requirements of the job license. American Welding Society American Society of Mechanical Engineers Military Specification Other. Weld position Refer to code requirements for welding positions Plate welding positions; 1-flat, 2-horizontal, 3-vertical, 4-overhead Pipe welding positions; 1-flat, 2-horizontal, 5-fixed position on horizontal plane, 6-fixed at a 45° angle Inform the welder of the code requirements for this test Electrode selection and manipulation Refer to code requirements for electrode selection Refer to code requirements for welding direction and manipulation Inform welder of the code requirements for this test Welding sequence Refer to code requirements for weld sequencing Refer to code requirements for welding bed layers Inform welder of the code requirements for this test Test coupon preparation Refer to code requirements for weld test coupon selection Mark coupons to be removed from the weld specimen Flame or cold cut and remove weld coupons Prepare coupons for testing by grinding and buffing Test evaluation Determine code requirements for welded coupon evaluation Follow code requirements for processing welded coupons Refer to code standards for acceptability or rejection of processed weld coupons Document welding testing results according to code requirements

## Method(s) of Instruction

- Lab (04)

## Instructional Techniques

Proctor a hands-on welding test; observe the test while in progress; compare the ability of the student to minimum industry standards as applicable to code; evaluate and document test result

## Reading Assignments

homework hours not assigned for lab

## Writing Assignments

Proficiency demonstrated by passing a physical test to the required standard

## Out-of-class Assignments

out-of-class hours not required for lab

## Demonstration of Critical Thinking

Demonstration of critical thinking by welding test result

## Required Writing, Problem Solving, Skills Demonstration

Proficiency demonstrated by passing a physical test to the required standard

## Eligible Disciplines

Welding: Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience.

## Other Resources

1. Selected handout materials to be provided and distributed by instructor.