

ATMW-2520: MILLWRIGHT PILEDRIWER WELD III

Cuyahoga Community College

Viewing: ATMW-2520 : Millwright PileDriver Weld III

Board of Trustees:

2007-05-24

Academic Term:

Spring 2019

Subject Code

ATMW - Appld Ind Tech - Millwrighting

Course Number:

2520

Title:

Millwright PileDriver Weld III

Catalog Description:

Study of advanced topics in millwright and pile driver welding. Topics include multi-pass vertical-up groove, technical review of material presented in ATMW 1490 Weld I and ATMW 2230 Weld II, carbon arc process, non-destructive testing, alloy welding, safety practices, guided practice time, and preparation for the American Welding Society (AWS) D1.1 vertical-up unlimited thickness certificate test.

Credit Hour(s):

2

Lecture Hour(s):

2

Requisites

Prerequisite and Corequisite

ATMW-2230 Millwright Pile Driver Weld II or concurrent enrollment, or departmental approval.

Outcomes

Course Outcome(s):

Work effectively, efficiently, and safely on a job site where advanced millwright and pile drive welding occurs.

Objective(s):

1. Safely prepare and demonstrate the ability to make large multi-pass E-7018 vertical-up groove welds.
2. Safely demonstrate the ability to back gouge using carbon arc equipment.
3. Analyze and evaluate the non-destructive testing techniques.
4. Categorize alloy steel and formulate the methods for welding it.
5. Perform the AWS D1.1 Vertical-up unlimited thickness test.
6. Technical review of material presented in Weld I and Weld II.

Methods of Evaluation:

1. Quizzes
2. Exams
3. Classroom participation
4. Demonstration of assigned projects

Course Content Outline:

A. Concepts

1. Multi-pass E-7018 vertical-up groove welds
2. PASTA (rod position, amps, speed, technique, arc length)

- 3.Weld application techniques
 - 4.Weld discontinuities
 - 5.Safety procedures
 - 6.Back gouging
 - 7.Carbon arc process
 - 8.Carbon arc equipment
 - 9.Carbon arc application technique
 - 10.Non-destructive testing:Dye penetrant
 - 11.Non-destructive testing:Magnetic particles
 - 12.Non-destructive testing:Radiographic
 - 13.Non-destructive testing:Ultrasonic
 - 14.Alloy steel
 - 15.Alloy steel identification
 - 16.Alloy steel welding techniques
 - 17.AWS D1.1 vertical-up weld
 - 18.AWS D1.1 vertical-up unlimited thickness test
 - 19.AWS D1.1 vertical-up unlimited thickness test:pass – fail perimeters
- B.Skills
- 1.Safely preparing and making large multi-pass E-7018 vertical-up groove welds
 - 2.Safely back gouging using carbon arc equipment
 - 3.Analyzing and evaluating the non-destructive testing techniques
 - 4.Categorizing alloy steel and formulating the methods for welding it
 - 5.Performing the AWS D1.1 Vertical-up unlimited thickness test
 - 6.Using PASTA (rod position, amps, speed, technique and arc length)
 - 7.Creating AWS D1.1 vertical-up weld
 - 8.Using unlimited thickness certification
 - 9.Following Pass - Fail perimeters
- C.Issues
- 1.Safety
 - 2.Professional demeanor to promote credibility of the trade
 - 3.Communication skills to promote effective interpersonal skills

Resources

Lincoln Electric Company. *Arc Welding Safety*. Cleveland: Lincoln Electric Company, 1947.

Miller, R. *Welding Skills*. 2nd ed. Homewood, IL: American Technical Publishers, Inc., 1994.

United Brotherhood of Carpenters. *Weld Defects: Causes and Corrections*. Washington: United Brotherhood of Carpenters, 1986.

Sack, Raymond. *Essentials of Welding*. Peoria, IL: McGraw-Hill, 1984.

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