

ATMW-2230: MILLWRIGHT PILE DRIVER WELD II

Cuyahoga Community College

Viewing: ATMW-2230 : Millwright Pile Driver Weld II

Board of Trustees:

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Academic Term:

Spring 2019

Subject Code

ATMW - Appld Ind Tech - Millwrighting

Course Number:

2230

Title:

Millwright Pile Driver Weld II

Catalog Description:

In-depth study of multi-pass horizontal and vertical-up groove welds using the shielded metal arc welding process. Topics include blueprint reading for welders, introduction to D1.1 structural weld code requirements, welding safety practices, and guided practice time.

Credit Hour(s):

2

Lecture Hour(s):

2

Requisites

Prerequisite and Corequisite

ATMW-1490 Millwright Pile Driver Weld I or concurrent enrollment; or departmental approval.

Outcomes

Course Outcome(s):

Work effectively, efficiently, and safely on a job site where pile driver welding occurs.

Objective(s):

1. Differentiate the basic carbon steel types and the effects of welding on the physical properties of the metals.
2. Identify D1.1 structural weld code requirements.
3. Safely demonstrate the ability to make a multi-pass E-7018 horizontal groove weld with an E-6010 root.
4. Identify common weld defects and explain the steps necessary to prevent them.
5. Identify weld symbols on blueprints by interpreting position.
6. Safely demonstrate the ability to make a multi-pass vertical-up with both an E-6010 and an E-7018.

Methods of Evaluation:

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

Course Content Outline:

A. Concepts

1. D1.1 structural weld code requirements
2. Multi-pass
3. Horizontal groove welds

- 4.Weldability of steels
 - 5.PASTA (rod position, amps, speed, technique, and arc length)
 - 6.Weld technique
 - 7.W weave
 - 8.Box weave
 - 9.Carbon content
 - 10.Preheat and post-heat requirements
 - 11.Specific tolerances
 - 12.Determination of need
 - 13.Inverted v structural steel
 - 14.Storage tones
 - 15.E-7018
 - 16.E-6010 root
 - 17.Welding defect:porosity
 - 18.Welding defect:inclusions
 - 19.Welding defect:cracking
 - 20.Preventing weld defects
 - 21.Vertical-up groove weld
 - 22.Blueprint reading
 - 23.Weld symbols
 - 24.Fusion
 - 25.Safety procedures
- B.Skills
- 1.Reciting D1.1 structural weld code requirements
 - 2.Creating multi-pass horizontal groove welds
 - 3.Completing PASTA
 - 4.Applying weld technique
 - 5.Making W weave
 - 6.Making box weave
 - 7.Making multi-pass E-7018 horizontal groove weld with an E-6010 root
 - 8.Identifying common weld defects and explaining the steps necessary to prevent them
 - 9.Making multi-pass vertical-up groove weld using E-7018
 - 10.Applying blueprints
 - 11.Interpreting weld symbols
 - 12.Making multi-pass vertical-up groove weld using E-6010
 - 13.Accepting criterion
 - 14.Completing fusion
 - 15.Following proper safety procedures
- C.Issues
- 1.Welding safety practices
 - 2.Personal protective equipment
 - 3.Welding equipment
 - 4.Water hazards
 - 5.High work hazards
 - 6.Professional demeanor to promote credibility of the trade
 - 7.Communication skills to promote effective interpersonal skills

Resources

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

Lincoln Electric Company. *Weld Directory*. Cleveland: Lincoln Electric Company, 1952.

OSHA. *Cutting and Welding Standards*. Washington, D.C.: U.S. Dept. of Labor, 1990.

OSHA. *Welding Health Hazards*. Washington, D.C.: U.S. Dept. of Labor, 1990.

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