Arkansas CTE

Advanced Shielded Metal Arc Welding: Grades 10, 11, 12

Adopted 2014

Demonstrate and practice welding safety

1.1 Recognize the hazards of welding and develop the proper attitude toward safety.

1. Identify some common hazards in welding and determine proper PPE used in welding. 1.1.1
2. Demonstrate how to avoid welding fumes, how to avoid electric shock when welding and some of the causes of accidents. 1.1.2
3. Identify and explain uses for material safety data sheets. 1.1.3
4. Explain and demonstrate safety techniques for storing and handling cylinders. 1.1.4
5. Describe proper material handling methods. 1.1.5

Demonstrate an understanding of shielded metal arc welding equipment

2.1 Reference codes, use special tools and measuring devices, and use joint inspection techniques and procedures.

1. Identify and demonstrate shielded metal arc welding (SMAW) safety and explain welding electrical current. 2.1.1
2. Identify welding power supplies and their characteristics. 2.1.2
3. Explain how to set up welding power supplies and set up a machine for welding. 2.1.3
4. Identify tools used for weld cleaning. 2.1.4

2.2 Prepare for and perform groove welds.

1. Identify and demonstrate groove welds, identify and explain groove welds with backing. 2.2.1
3. Set up shielded metal arc welding (SMAW) equipment for making V-groove welds and perform SMAW for v-groove welds with backing in the:
Flat (1G) position
Horizontal (2G) position
Vertical (3G) position
Overhead (4G) position 2.2.3

2.3 Prepare for and perform open-root V-groove welds on plate using E6010 and E7018 electrodes in various positions.

1. Prepare shielded metal arc welding (SMAW) equipment for open-root V-groove welds. 2.3.1

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2. Perform open-root V-groove welds in the following positions:
Flat (1G) position
Horizontal (2G) position
Vertical (3G) position
Overhead (4G) position 2.3.2