

WLD122 Gas Metal Arc Welding I

Course Competencies

1-3 Credits

Upon successful completion of competencies in each of the following positions, a student can earn 1 credit for each step. Student will be able to perform the following tasks:

PART 1: METAL TRANSFER SHORT ARC

• **Step 1 - Flat, Horizontal & Vertical-Up Positions**

= 1 CREDIT

1. Perform safety inspection of equipment, work area and accessories
2. Make minor repairs to equipment and accessories.

Flat Position Short Arc

1. Make several stringer beads on carbon steel passing visual inspection.
2. Make a pad of welds with 8-12 beads passing visual inspection.
3. Make lap weld on ¼" carbon steel; passing visual inspection, size inspection and break test.

Horizontal Position Short Arc

1. Make several stringer beads on carbon steel; passing visual inspection.
2. Make a pad of welds with 8-12 beads; passing visual inspection.
3. Make ¼" lap weld on carbon steel; passing visual inspection, size inspection and break test.

Vertical – Up Position Short Arc

1. Make several stringer beads on carbon steel; passing visual inspection
2. Make a pad of welds with 8-12 beads; passing visual inspection.
3. Make ¼" lap weld on carbon steel; passing visual inspection, size inspection and break test.

• **Step 2 - Overhead Position**

=1 CREDIT

Overhead Position Short Arc

1. Make several stringer beads on carbon steel; passing visual inspection.
2. Make a pad of welds with 8-12 beads; passing visual inspection.
3. Make ¼" lap weld on carbon steel; passing visual inspection, size inspection and break test.

3. Set up a Gas Metal Arc Welding station for Short Arc transfer on plain carbon steel
4. Perform the following tasks
 4. Make a 1F single pass ¼" fillet weld passing visual inspection and passing the fillet break test.
 5. Make a 1F, ½" multi-pass fillet weld passing visual and size inspection.
 6. Weld a 1G plate qualification test with backing; passing visual inspection and bend test.
4. Make 2F single pass ¼" fillet weld; passing visual inspection and passing the fillet break test.
5. Make 2F ½" multi-pass fillet; passing visual and size inspection.
6. Weld a 3/8" 2G plate qualification test with backing; passing visual inspection and bend test.

4. Make a 3F, single pass ¼" fillet weld; passing visual inspection and passing the fillet break test.
5. Make a 3F, ½" multi-pass fillet; passing visual and size inspection.
6. Weld a 3G plate qualification test with backing; passing visual inspection and bend test.

4. Make a 4F single pass ¼" fillet weld; passing visual inspection and passing the fillet break test.
5. Make a 4F six pass ½" multi-pass fillet; passing visual and size inspection.
6. Weld a 3/8" 4G plate qualification test with backing; passing visual inspection and bend test.

PART 2: METAL TRANSFER SPRAY ARC

• **Step 3 - Flat & Horizontal Positions**

= 1 CREDIT

1. Make minor repairs to equipment and accessories.
2. Set up a Gas Metal Arc Welding station for Spray Arc transfer on plain carbon steel

Flat Position Spray Arc

1. Make several stringer beads on carbon steel; passing visual inspection
2. Make a pad of welds with 8-12 beads; passing visual inspection
3. Make ¼" lap weld on carbon steel; passing visual inspection, size inspection and break test

Horizontal Position Spray Arc

1. Make several stringer beads on carbon steel; passing visual inspection
2. Make a pad of welds with 8-12 beads; passing visual inspection
3. Make ¼" lap weld on carbon steel; passing visual inspection, size inspection and break test

4. Make 1F single pass ¼" fillet weld passing; visual inspection and passing the fillet break test.
5. Make a 1F ½" multi-pass fillet; passing visual and size inspection
6. Weld a 1G plate qualification test with backing; passing visual inspection and bend test.
4. Make a 2F single pass ¼" fillet weld; passing visual inspection and passing the fillet break test.
5. Make a 2F ½" multi-pass fillet; passing visual and size inspection
6. Weld a 3/8" 2G plate qualification test with backing; passing visual inspection and bend