

PERFORMANCE ACCREDITATION TASKS

The Performance Accreditation Tasks (PATs) correspond to and support the learning objectives in *AWS EG2.0, Curriculum Guide for the Training of Welding Personnel: Level 1 – Entry Welder*.

PATs provide specific acceptable criteria for performance and help to ensure a true competency-based welding program for students.

The following tasks are designed to evaluate your ability to run fillet and groove welds with GMAW equipment. Perform each task when you are instructed to do so by the instructor. As you complete each task, show it to the instructor for evaluation. Do not proceed to the next task until instructed to do so by the instructor.

Have trainees complete PAT 1 through PAT 8, according to the acceptance criteria.

PAT 1, Make a Fillet Weld in the (1F) Flat Position. This task corresponds to *AWS EG2.0, Module 5, Gas Metal Arc Welding (GMAW-S, GMAW)*, Key Indicators 5 and 7.

PAT 2, Make a Fillet Weld in the (2F) Horizontal Position. This task corresponds to *AWS EG2.0, Module 5, Gas Metal Arc Welding (GMAW-S, GMAW)*, Key Indicators 5 and 7.

PAT 3, Make a Fillet Weld in the (3F) Vertical Position. This task corresponds to *AWS EG2.0, Module 5, Gas Metal Arc Welding (GMAW-S, GMAW)*, Key Indicators 5 and 7.

PAT 4, Make a Fillet Weld in the (4F) Overhead Position. This task corresponds to *AWS EG2.0, Module 5, Gas Metal Arc Welding (GMAW-S, GMAW)*, Key Indicators 5 and 7.

PAT 5, Make a Groove Weld, With or Without Backing, in the (1G) Flat Position. This task corresponds to *AWS EG2.0, Module 5, Gas Metal Arc Welding (GMAW-S, GMAW)*, Key Indicators 6 and 11.

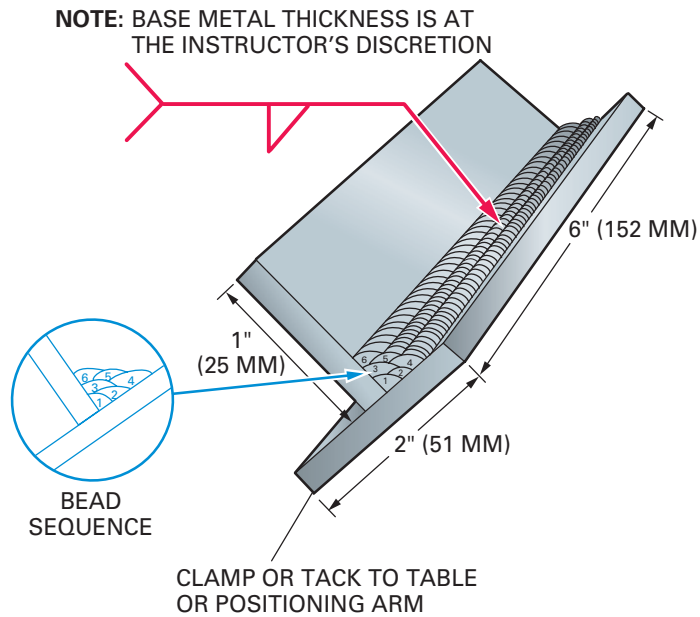
PAT 6, Make a Groove Weld, With or Without Backing, in the (2G) Horizontal Position. This task corresponds to *AWS EG2.0, Module 5, Gas Metal Arc Welding (GMAW-S, GMAW)*, Key Indicators 6 and 11.

PAT 7, Make a Groove Weld, With or Without Backing, in the (3G) Vertical Position. This task corresponds to *AWS EG2.0, Module 5, Gas Metal Arc Welding (GMAW-S, GMAW)*, Key Indicators 6 and 11.

PAT 8, Make a Groove Weld, With or Without Backing, in the (4G) Overhead Position. This task corresponds to *AWS EG2.0, Module 5, Gas Metal Arc Welding (GMAW-S, GMAW)*, Key Indicators 6 and 11.

MAKE A FILLET WELD IN THE (1F) FLAT POSITION

As directed by the instructor, use GMAW with carbon steel solid electrodes and appropriate shielding gas to make a six-pass fillet weld using stringer beads on carbon steel plate, as shown.



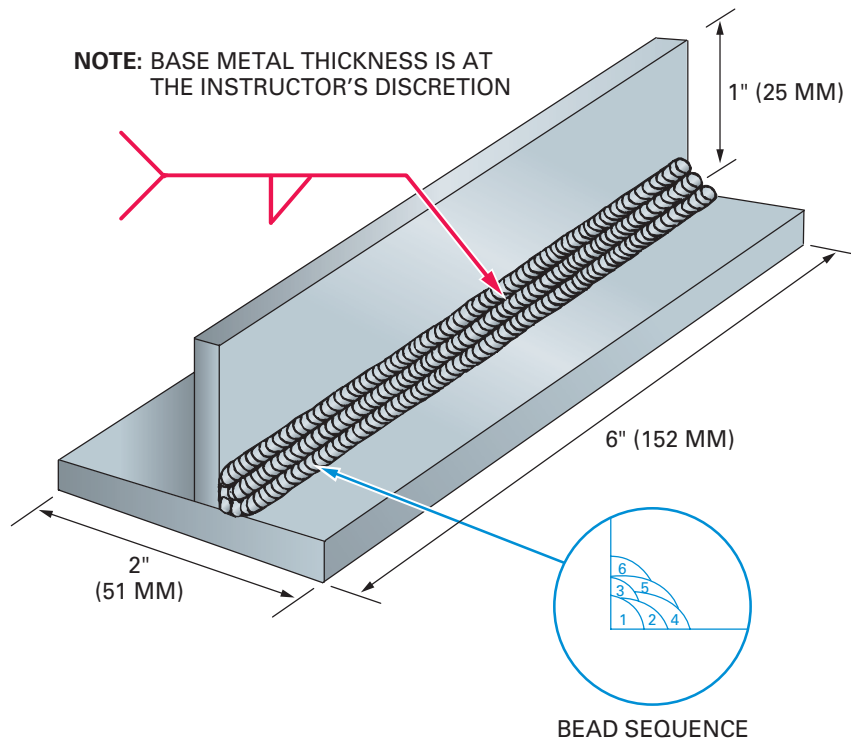
Criteria for Acceptance:

- Uniform rippled appearance on the bead face _____
- Craters and restarts filled to the full cross section of the weld _____
- Uniform weld width $\pm 1/16$ " (1.6 mm) _____
- Smooth flat transition with complete fusion at the toes of the welds _____
- Acceptable weld profile in accordance with the applicable code or standard _____
- No porosity _____
- No undercut _____
- No overlap _____
- No inclusions _____

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MAKE A FILLET WELD IN THE (2F) HORIZONTAL POSITION

As directed by the instructor, use GMAW with carbon steel solid electrodes and appropriate shielding gas to make a six-pass fillet weld using stringer beads on carbon steel plate, as shown.



Criteria for Acceptance:

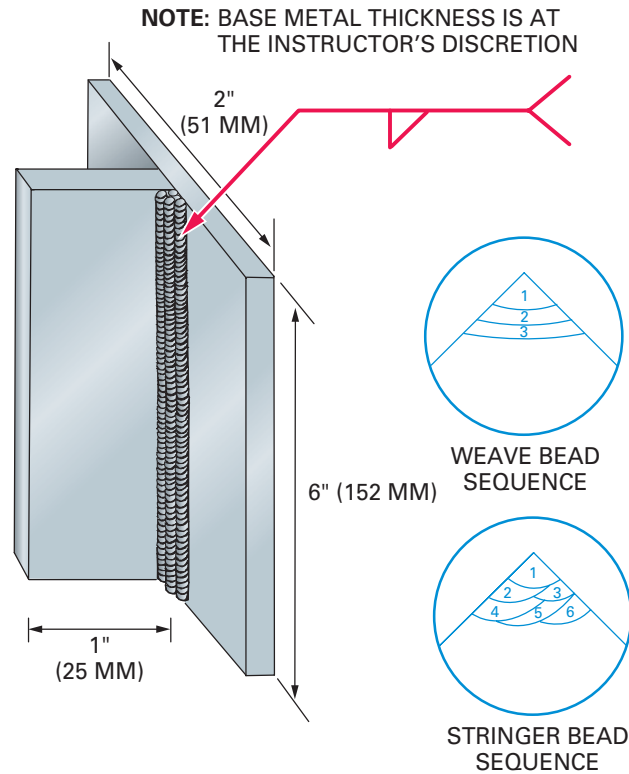
- Uniform rippled appearance on the bead face
- Craters and restarts filled to the full cross section of the weld
- Uniform weld width $\pm 1/16$ " (1.6 mm)
- Smooth flat transition with complete fusion at the toes of the welds
- Acceptable weld profile in accordance with the applicable code or standard
- No porosity
- No undercut
- No overlap
- No inclusions

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MAKE A FILLET WELD IN THE (3F) VERTICAL POSITION

As directed by the instructor, use GMAW with carbon steel solid electrodes and appropriate shielding gas to make a vertical fillet weld on carbon steel plate, as shown.



Criteria for Acceptance:

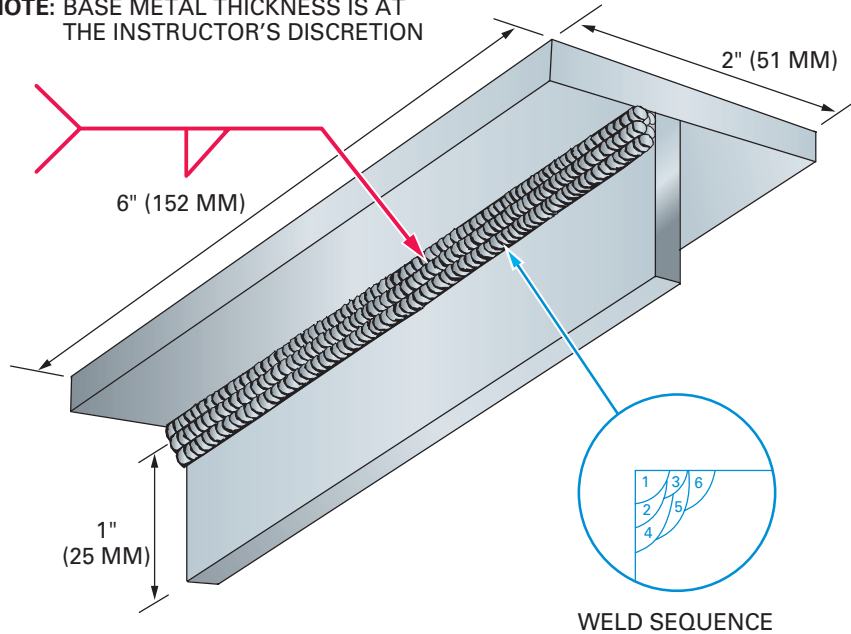
- Uniform rippled appearance on the bead face
- Craters and restarts filled to the full cross section of the weld
- Uniform weld width $\pm 1/16"$ (1.6 mm)
- Acceptable weld profile in accordance with the applicable code or standard
- Smooth flat transition with complete fusion at the toes of the weld
- No porosity
- No undercut
- No inclusions
- No cracks

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MAKE A FILLET WELD IN THE (4F) OVERHEAD POSITION

As directed by the instructor, use GMAW with carbon steel solid electrodes and appropriate shielding gas to make a six-pass fillet weld using stringer beads on carbon steel plate, as shown.

NOTE: BASE METAL THICKNESS IS AT THE INSTRUCTOR'S DISCRETION



Criteria for Acceptance:

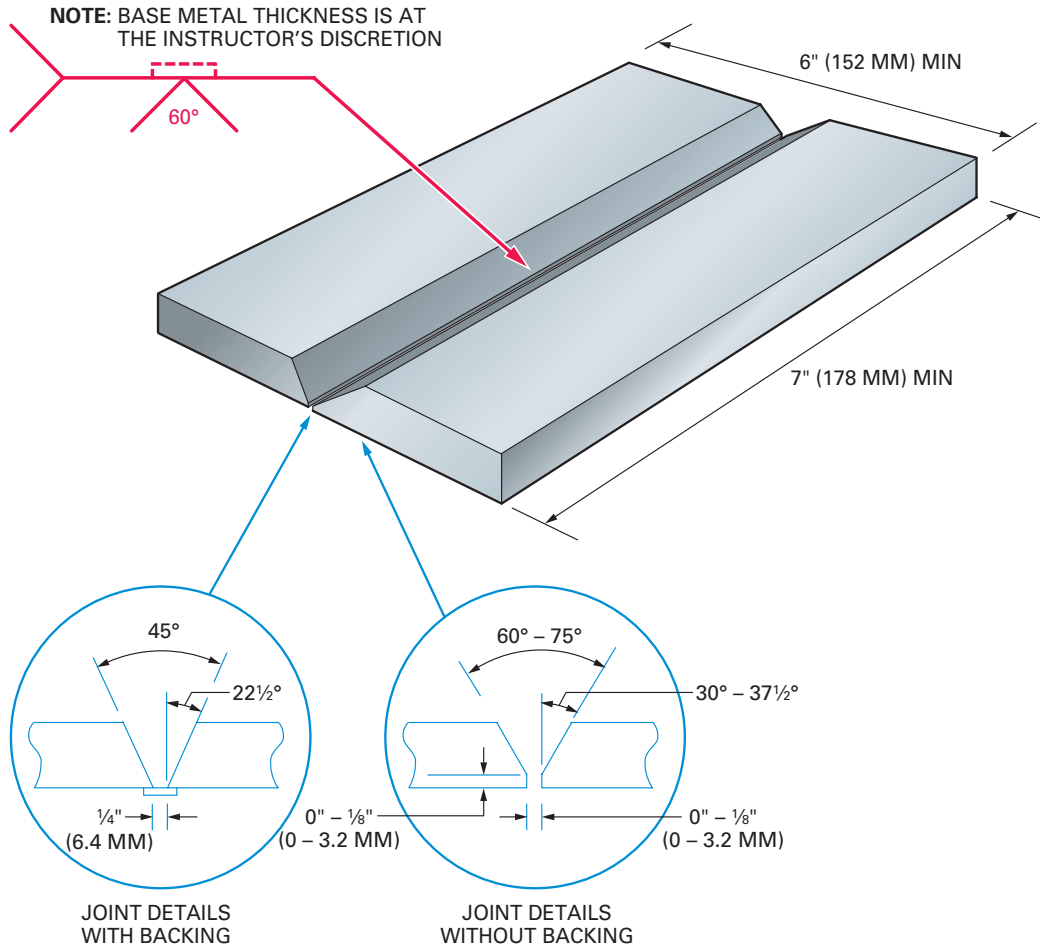
- Uniform rippled appearance on the bead face
- Craters and restarts filled to the full cross section of the weld
- Uniform weld width $\pm 1/16$ " (1.6 mm)
- Acceptable weld profile in accordance with the applicable code or standard
- Smooth flat transition with complete fusion at the toes of the weld
- No porosity
- No undercut
- No inclusions
- No cracks

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MAKE A GROOVE WELD, WITH OR WITHOUT BACKING, IN THE (1G) FLAT POSITION

As directed by the instructor, use GMAW with carbon steel solid electrodes and appropriate shielding gas to make a multiple-pass groove weld using stringer beads on carbon steel plate, with or without backing, as shown.



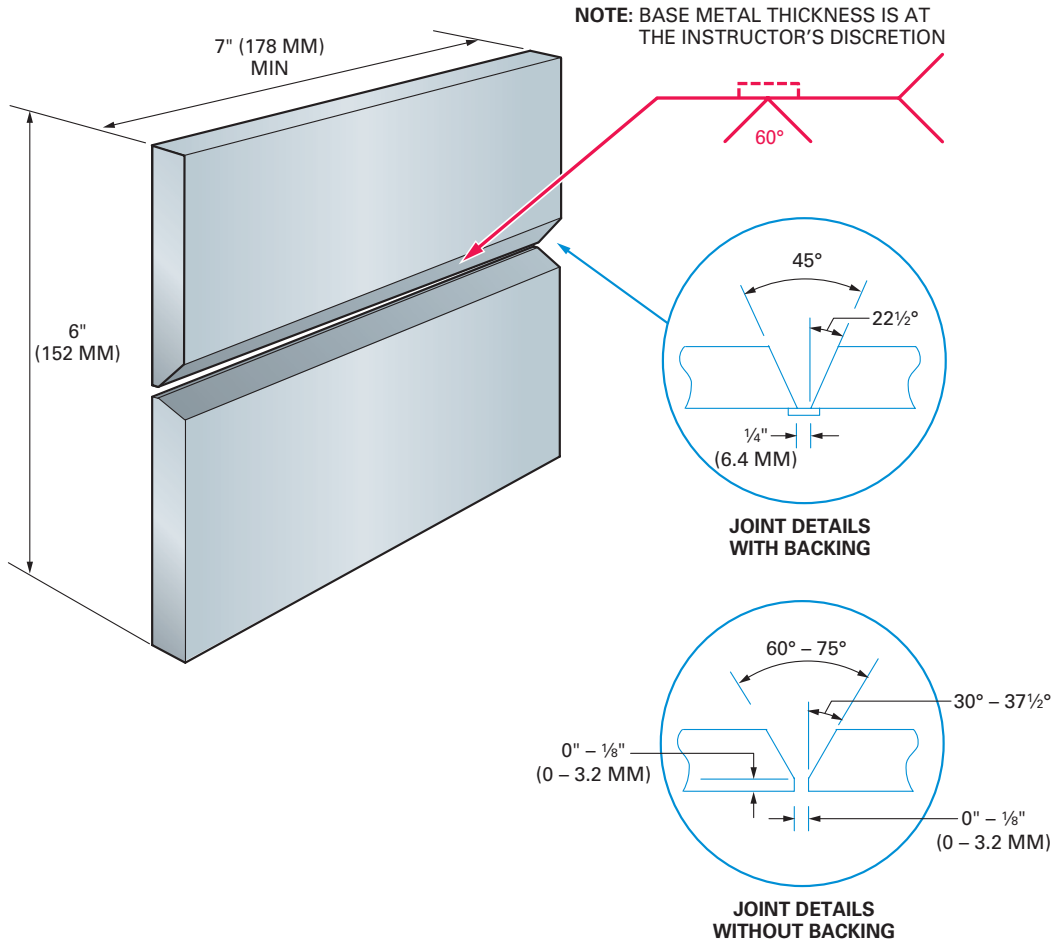
Criteria for Acceptance:

- Uniform rippled appearance on the bead face _____
- Craters and restarts filled to the full cross section of the weld _____
- Uniform weld width $\pm 1/16$ " (1.6 mm) _____
- Acceptable weld profile in accordance with the applicable code or standard _____
- Smooth transition with complete fusion at the toes of the weld _____
- Complete joint penetration with uniform root and face reinforcement at least flush with the base metal to a maximum buildup of $1/8$ " (3.2 mm), if applicable _____
- No porosity _____
- No undercut _____
- No inclusions _____
- No cracks _____

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MAKE A GROOVE WELD, WITH OR WITHOUT BACKING, IN THE (2G) HORIZONTAL POSITION

As directed by the instructor, use GMAW with carbon steel solid electrodes and appropriate shielding gas to make a multiple-pass groove weld on carbon steel plate, with or without backing, as shown.



Criteria for Acceptance:

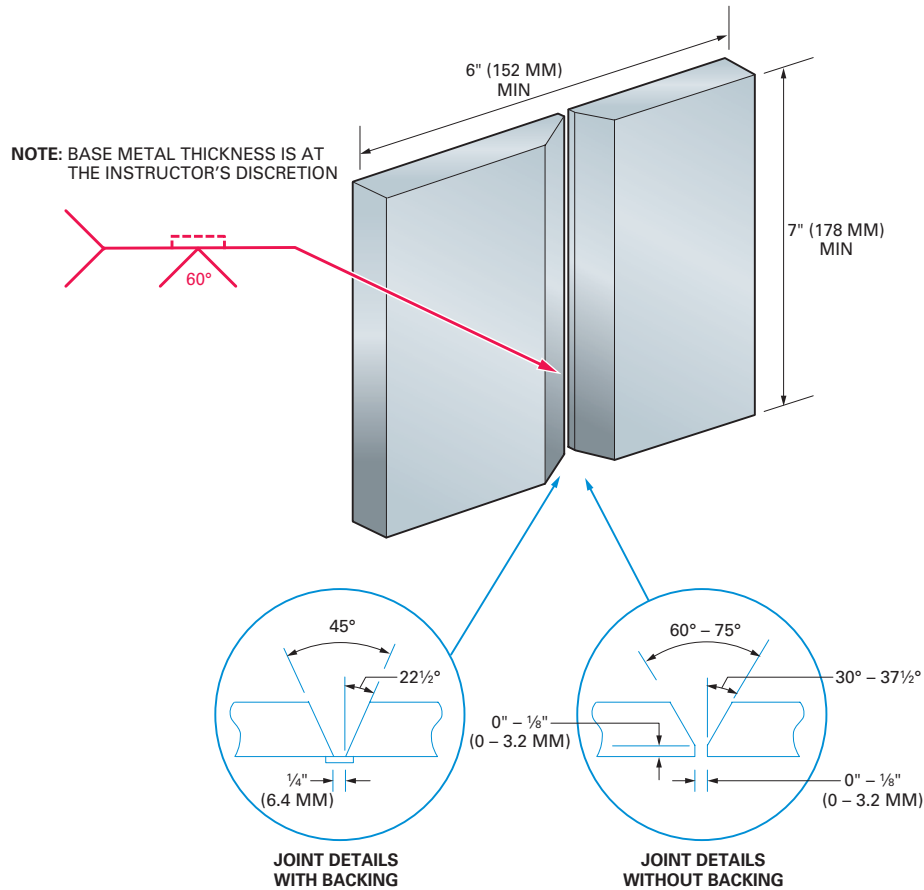
- Uniform rippled appearance on the bead face _____
- Craters and restarts filled to the full cross section of the weld _____
- Uniform weld width $\pm 1/16$ " (1.6 mm) _____
- Acceptable weld profile in accordance with the applicable code or standard _____
- Complete joint penetration with uniform root and face reinforcement at least flush with the base metal to a maximum buildup of $1/8$ " (3.2 mm), if applicable _____
- Smooth transition with complete fusion at the toes of the weld _____
- No porosity _____
- No undercut _____
- No inclusions _____
- No cracks _____

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MAKE A GROOVE WELD, WITH OR WITHOUT BACKING, IN THE (3G) VERTICAL POSITION

As directed by the instructor, use GMAW with carbon steel solid electrodes and appropriate shielding gas to make a multiple-pass groove weld on carbon steel plate, with or without backing, as shown.



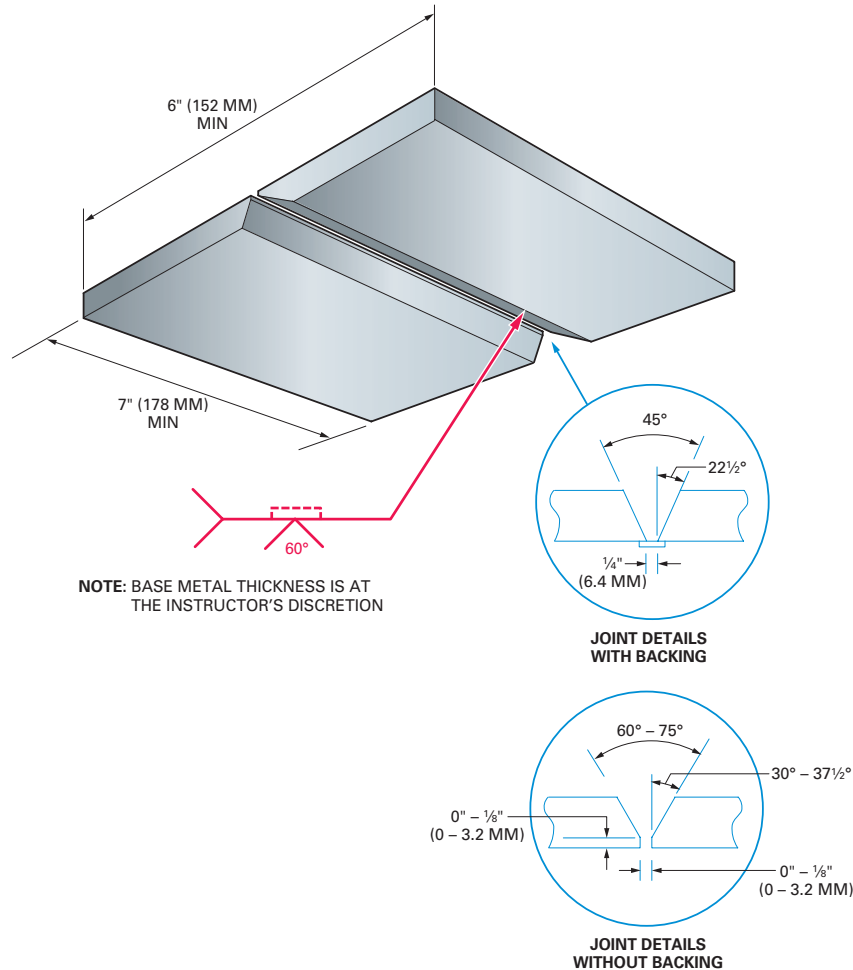
Criteria for Acceptance:

- Uniform rippled appearance on the bead face _____
- Craters and restarts filled to the full cross section of the weld _____
- Uniform weld width $\pm 1/16$ " (1.6 mm) _____
- Acceptable weld profile in accordance with the applicable code or standard _____
- Complete joint penetration with uniform root and face reinforcement at least flush with the base metal to a maximum buildup of $1/8$ " (3.2 mm), if applicable _____
- Smooth transition with complete fusion at the toes of the weld _____
- No porosity _____
- No undercut _____
- No inclusions _____
- No cracks _____

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MAKE A GROOVE WELD, WITH OR WITHOUT BACKING, IN THE (4G) OVERHEAD POSITION

As directed by the instructor, use GMAW with carbon steel solid electrodes and appropriate shielding gas to make a multiple-pass groove weld on carbon steel plate, with or without backing, as shown.



Criteria for Acceptance:

- Uniform rippled appearance on the bead face _____
- Craters and restarts filled to the full cross section of the weld _____
- Uniform weld width $\pm 1/16$ " (1.6 mm) _____
- Acceptable weld profile in accordance with the applicable code or standard _____
- Complete joint penetration with uniform root and face reinforcement at least flush with the base metal to a maximum buildup of $1/8$ " (3.2 mm), if applicable _____
- Smooth transition with complete fusion at the toes of the weld _____
- No porosity _____
- No undercut _____
- No inclusions _____
- No cracks _____

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