

# GMAW Welding Level 2 Practice Test (Sample)

## Study Guide



**Everything you need from our exam experts!**

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# Table of Contents

**Copyright** ..... 1

**Table of Contents** ..... 2

**Introduction** ..... 3

**How to Use This Guide** ..... 4

**Questions** ..... 5

**Answers** ..... 8

**Explanations** ..... 10

**Next Steps** ..... 15

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# Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

**Remember:** successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

# How to Use This Guide

**This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:**

## **1. Start with a Diagnostic Review**

**Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.**

## **2. Study in Short, Focused Sessions**

**Break your study time into manageable blocks (e.g. 30 - 45 minutes). Review a handful of questions, reflect on the explanations.**

## **3. Learn from the Explanations**

**After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.**

## **4. Track Your Progress**

**Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.**

## **5. Simulate the Real Exam**

**Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.**

## **6. Repeat and Review**

**Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.**

**There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!**

## Questions

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- 1. What drive-roll shape is designed for soft welding wires?**
  - A. V-shaped**
  - B. Flat**
  - C. Round**
  - D. U-shaped**
  
- 2. For short-circuiting transfer on carbon steels and low-alloy steels, which shielding gas is preferred?**
  - A. 75% Argon / 25% CO<sub>2</sub>**
  - B. 100% Argon**
  - C. 75% Helium / 25% Argon**
  - D. 50% Argon / 50% CO<sub>2</sub>**
  
- 3. Which polarity is most commonly used for GMAW?**
  - A. DCEN**
  - B. AC**
  - C. DCPS**
  - D. DCEP**
  
- 4. Which gas mixture is used for short-circuit transfer on carbon steels and low-alloy steels?**
  - A. 100% Argon**
  - B. 100% CO<sub>2</sub>**
  - C. 75% Argon / 25% CO<sub>2</sub>**
  - D. 95% Argon / 5% Oxygen**
  
- 5. Which statement about spray transfer conditions is true?**
  - A. Globular transfer is the transfer mode used at lower current.**
  - B. The spray transfer transition current varies depending on wire type, diameter, and shielding gas composition.**
  - C. Push angle refers to the torch pointing toward the beginning of the weld as the bead is deposited.**
  - D. CO<sub>2</sub> levels exceeding 50% do not allow spray transfer.**

- 6. Crater cracks can be caused by improperly filled craters.**
- A. False**
  - B. True**
  - C. Not sure**
  - D. Cannot determine**
- 7. Spray transfer produces high deposition rates with high welding-wire efficiencies.**
- A. True**
  - B. False**
  - C. Low deposition rates**
  - D. Poor wire efficiency**
- 8. Moisture in the electrode coating can cause porosity in GMAW.**
- A. True**
  - B. False**
  - C. Only with direct current**
  - D. Only with alternating current**
- 9. Which statement is false?**
- A. The spray transfer transition current varies depending on the type and diameter of the welding wire and the composition of the shielding gas.**
  - B. Two variables that affect droplet transfer in short circuiting transfer are slope and inductance.**
  - C. Incomplete fusion (overlap) occurs when the weld pool flows onto unwelded base metal without fusing.**
  - D. Globular transfer can be used in all welding positions.**
- 10. GMAW is not well suited for use in windy areas.**
- A. True**
  - B. False**
  - C. Not sure**
  - D. Depends**

## Answers

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1. D
2. A
3. D
4. C
5. B
6. B
7. A
8. A
9. D
10. A

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## **Explanations**

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### 1. What drive-roll shape is designed for soft welding wires?

- A. V-shaped
- B. Flat
- C. Round
- D. U-shaped**

Drive-roll shape affects how the wire is gripped and fed toward the gun. Soft wires deform easily, so they need a groove that supports them without biting or pinching. A U-shaped drive-roll provides a rounded cradle that distributes pressure evenly around the wire, reducing deformation and preventing slips as it feeds. This yields smoother, more consistent feeding for soft wires. In comparison, a V-shaped groove tends to pinch or indent a soft wire, while a flat groove doesn't cradle the wire well, leading to irregular feeding. So for soft welding wires, the U-shaped drive-roll is the best design.

### 2. For short-circuiting transfer on carbon steels and low-alloy steels, which shielding gas is preferred?

- A. 75% Argon / 25% CO<sub>2</sub>**
- B. 100% Argon
- C. 75% Helium / 25% Argon
- D. 50% Argon / 50% CO<sub>2</sub>

Short-circuit transfer needs a shielding gas that keeps the arc stable and the weld pool easy to control at low current. A mostly argon mix with a little CO<sub>2</sub> hits that balance: argon provides arc stability and a smooth, well-wetted puddle, while a small amount of CO<sub>2</sub> adds the right amount of oxidizing action to promote reliable short-circuit transfer without making the process too hot or spattery. About 75% argon with 25% CO<sub>2</sub> is the standard recipe for carbon and low-alloy steels in short-circuit MIG welding because it gives good bead quality, manageable spatter, and dependable fusion at typical welding currents. Using 100% argon removes the CO<sub>2</sub> part that helps with transfer and can lead to less stable short-circuit behavior on these steels. A helium-argon mix increases heat input and bead width, which is not ideal for the common short-circuit setup on carbon or low-alloy steels. A higher CO<sub>2</sub> mix, like 50% argon / 50% CO<sub>2</sub>, tends to raise spatter and can compromise arc stability and bead appearance at the currents used for short-circuit transfer.

### 3. Which polarity is most commonly used for GMAW?

- A. DCEN
- B. AC
- C. DCPS
- D. DCEP**

In GMAW, the polarity determines where most of the heat goes in the arc. Using reverse polarity, with the electrode as the positive pole, sends more heat into the workpiece and promotes stable transfer and deeper penetration for solid-wire, gas-shielded welding. This setup gives better bead profile and fusion for the common MIG welding applications, making it the typical choice. AC is used for some aluminum work, but for the common MIG welding of steel with a solid wire and shielding gas, DCEP (electrode positive) is the standard. Electrode negative concentrates heat in the wire, which is less common for this process, and other polarities are not preferred for the typical MIG setup.

**4. Which gas mixture is used for short-circuit transfer on carbon steels and low-alloy steels?**

- A. 100% Argon**
- B. 100% CO<sub>2</sub>**
- C. 75% Argon / 25% CO<sub>2</sub>**
- D. 95% Argon / 5% Oxygen**

Short-circuit transfer on carbon steels and low-alloy steels benefits from a shielding gas that provides arc stability while promoting smooth short-circuit metal transfer. A mix of about 75% argon and 25% CO<sub>2</sub> delivers that balance: argon stabilizes the arc and helps good bead formation, while CO<sub>2</sub> adds a bit of reactivity that supports reliable short-circuit transfer and penetration control. Pure argon would be too inert for this mode, and pure CO<sub>2</sub> tends to cause more spatter and less control on carbon steels. The other options either lack the right arc stability or introduce conditions (like more spatter or different bead characteristics) that aren't ideal for short-circuit transfer on these steels.

**5. Which statement about spray transfer conditions is true?**

- A. Globular transfer is the transfer mode used at lower current.**
- B. The spray transfer transition current varies depending on wire type, diameter, and shielding gas composition.**
- C. Push angle refers to the torch pointing toward the beginning of the weld as the bead is deposited.**
- D. CO<sub>2</sub> levels exceeding 50% do not allow spray transfer.**

Spray transfer depends on having enough heat and a stable arc to create many fine droplets, and the current at which you switch into that spray mode isn't fixed. It varies with the wire you're using (its alloy and properties change how it melts and droplets form), the wire diameter (larger wires need more heat to reach spray conditions), and the shielding gas composition (gas affects arc stability and heat input). Because all three factors influence how easily the arc supports spray transfer, the transition current isn't a constant value, making the statement that it varies with wire type, diameter, and shielding gas the true one. The other ideas don't fit as well. Globular transfer is a different transfer mode tied to lower heat input, not the spray mode. Push angle describes how the torch is oriented during deposition, not the conditions that govern spray transfer. And claiming that CO<sub>2</sub> levels above 50% categorically prevent spray transfer oversimplifies the gas effects, which depend on the overall balance of current, voltage, and gas mix.

**6. Crater cracks can be caused by improperly filled craters.**

**A. False**

**B. True**

**C. Not sure**

**D. Cannot determine**

Crater cracking is tied to how the weld pool finishes and how the crater is filled. If the crater isn't filled properly, it leaves a notch and weak fusion with the surrounding metal. As the weld cools and contracts, that notch concentrates stresses and can initiate a crack that propagates through the crater area. Filling the crater properly helps ensure good fusion to the crater walls and reduces those stress concentrations, making crater cracks less likely. So crater cracks can be caused by improperly filled craters.

**7. Spray transfer produces high deposition rates with high welding-wire efficiencies.**

**A. True**

**B. False**

**C. Low deposition rates**

**D. Poor wire efficiency**

Spray transfer in GMAW uses a high-current, stable arc to emit a continuous spray of molten wire droplets that are transferred to the weld pool. Because nearly all of the feed wire is melted and incorporated into the weld metal, the deposition rate is very high and the welding-wire efficiency is also high—the wire you feed mostly ends up as weld metal rather than being lost as spatter or re-melted elsewhere. This mode works best with argon-rich shielding gas and appropriate wire diameter, and it's favored for flat or horizontal positions where high deposition and efficiency are beneficial. So the statement is true.

**8. Moisture in the electrode coating can cause porosity in GMAW.**

**A. True**

**B. False**

**C. Only with direct current**

**D. Only with alternating current**

Moisture in the electrode coating releases hydrogen when the coating is heated in the welding arc. That hydrogen gas can form bubbles in the molten weld pool and get trapped as the metal solidifies, producing hydrogen porosity in the weld. This can happen with damp or poorly dried electrodes, especially flux-coated types, and isn't prevented by the type of current used. The formation of porosity from moisture occurs with both direct current and alternating current, so the moisture-related porosity is possible regardless of polarity. So the statement is true.

## 9. Which statement is false?

- A. The spray transfer transition current varies depending on the type and diameter of the welding wire and the composition of the shielding gas.
- B. Two variables that affect droplet transfer in short circuiting transfer are slope and inductance.
- C. Incomplete fusion (overlap) occurs when the weld pool flows onto unwelded base metal without fusing.
- D. Globular transfer can be used in all welding positions.**

Understanding how metal is transferred in GMAW and where each transfer mode works best is what this item is about. Spray transfer relies on a stable, high-current arc that produces a fine mist of small droplets. The boundary current at which spraying starts isn't fixed; it shifts with the type and diameter of the welding wire and with the shielding gas composition because these factors shape the arc pressure, heat input, and how easily droplets form and detach. Different wires and gas mixes create different arc conditions, so the spray regime is tied to those specifics. In short-circuit transfer, droplets form and transfer during brief contact between the wire tip and the weld pool. The way current rises during these events—the slope—and the energy stored and released by the power source through inductance both affect how cleanly droplets form and detach, how often transfer occurs, and how stable the arc remains. Adjusting slope and inductance helps control spatter and bead quality, which is why those two variables are cited as affecting dropout and transfer in this mode. Incomplete fusion, or overlap, is a weld defect where the weld metal flows onto base metal without properly fusing to it. This happens when heat input or joint fit-up isn't producing the necessary fusion between the weld and the base material, leaving a visible seam or overlap rather than a solid, fused joint. Globular transfer features large, irregular droplets and a lot of spatter, and the arc can be unstable. Because gravity and poor droplet control make it hard to maintain consistent welds in vertical or overhead positions, globular transfer isn't suitable for all welding positions. It's typically not used where precise, clean beads are required in non-flat positions. So the statement about globular transfer being usable in all welding positions is not correct; the other statements describe well-supported realities of transfer modes and welding defects.

## 10. GMAW is not well suited for use in windy areas.

- A. True**
- B. False
- C. Not sure
- D. Depends

Gas Metal Arc Welding relies on a shielding gas to protect the molten weld from the surrounding air. In windy conditions, that shielding gas can be blown away or quickly dispersed, allowing air to contaminate the weld. This contamination causes porosity and a weaker, inconsistent weld bead. Because the gas shield is easily disrupted by wind, GMAW is not well suited for windy outdoor areas. In practice, welders often switch to flux-cored arc welding, which shields the weld with flux fumes, or they use windbreaks or enclosures to minimize gas loss when outdoor welding is necessary.

## Next Steps

**Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.**

**As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.**

**If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at [hello@examzify.com](mailto:hello@examzify.com).**

**Or visit your dedicated course page for more study tools and resources:**

**<https://gmawweldinglvl2.examzify.com>**

**We wish you the very best on your exam journey. You've got this!**

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