

# WELD 101 C PRACTICE TEST (SAMPLE)

## STUDY GUIDE



## SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

<https://weld101c.examzify.com>



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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. In the designation F49P4-EM12K, what does the 12 indicate?**
- A. .12% carbon
  - B. 12% carbon
  - C. 0.12% carbon
  - D. .012% carbon
- 2. What does CAD stand for?**
- A. Computer Aided Drafting
  - B. Computer Aided Design
  - C. Computer Assisted Drafting
  - D. Computer Aided Engineering
- 3. Which gas is commonly used as the sole shielding gas for FCAW on mild steel?**
- A. CO<sub>2</sub>
  - B. Argon
  - C. Helium
  - D. Oxygen
- 4. What types of expansion are encountered during welding?**
- A. Solid, transitional and fluid
  - B. Thermal, magnetic, electrical
  - C. Elastic, plastic, creep
  - D. Gas, liquid, solid
- 5. What does SAW stand for?**
- A. Submerged arc welding
  - B. Spot arc welding
  - C. Shielded arc welding
  - D. Standard arc welding

- 6. The explosive mixture range of acetylene in air is expressed as which percent range?**
- A. 2.5 - 80%
  - B. 5 - 95%
  - C. 1 - 10%
  - D. 10 - 50%
- 7. What are 2 common problems encountered when using CAC-A?**
- A. Surface hardening and carbonization
  - B. Porosity and cracking
  - C. Warping and undercutting
  - D. Incomplete fusion and slag inclusion
- 8. Which property of copper makes it suitable for chill strips?**
- A. Electrical conductivity
  - B. Thermal conductivity
  - C. Magnetic permeability
  - D. Density
- 9. What does voltage affect in the weld puddle?**
- A. Fluidity and arc striking
  - B. Puddle color
  - C. Weld width
  - D. Cooling rate
- 10. Which of the following is a reason aluminum may be chosen for a specific job?**
- A. Weight
  - B. Cost
  - C. High Density
  - D. Magnetic Properties

## **Answers**

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

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## **Explanations**

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**1. In the designation F49P4-EM12K, what does the 12 indicate?**

- A. .12% carbon**
- B. 12% carbon
- C. 0.12% carbon
- D. .012% carbon

*In this kind of steel designation, the numeric portion encodes the carbon content as a percent, written in decimal form. The digits 12 indicate a carbon content of 0.12 percent. That's why the correct interpretation is .12% carbon—the decimal form used in the code. It's not 12% (far too high for steel) or 0.012% (which would be a smaller value). The focus here is that the number after the letters conveys the carbon percentage, expressed as a decimal, so 12 stands for 0.12%.*

**2. What does CAD stand for?**

- A. Computer Aided Drafting**
- B. Computer Aided Design
- C. Computer Assisted Drafting
- D. Computer Aided Engineering

*CAD is commonly understood as Computer Aided Drafting in this context. The idea is that computer software helps drafters create precise technical drawings—things like dimensions, tolerances, and multiple views—more quickly and accurately than hand drawing. This reflects the roots of CAD in the drafting process, where the focus is on producing exact drawings and plans. While many modern references use Computer-Aided Design to emphasize the broader design workflow, this question uses the traditional wording that centers on creating drawings. The other options shift the meaning: Design points to the wider creative and engineering process rather than the drawing task, Assisted is not the standard terminology, and Engineering refers to the broader engineering field rather than the drafting toolset.*

**3. Which gas is commonly used as the sole shielding gas for FCAW on mild steel?**

- A. CO2**
- B. Argon
- C. Helium
- D. Oxygen

*Shielding gas protects the weld pool from the surrounding air, preventing porosity and contamination. For flux-cored arc welding on mild steel, using carbon dioxide as the sole shielding gas is the most common approach because it provides good arc stability and penetration while keeping costs low with flux-cored wire. Argon is an inert gas favored in other welding methods (like TIG or different metal types) and is not typically used by itself for FCAW on mild steel. Helium is more expensive and tends to produce a hotter, less economical arc, not standard for this application. Oxygen used alone would oxidize the weld surface and lead to poor quality, so it's not used as the sole shielding gas. Therefore, CO2 is the typical choice for shielding FCAW on mild steel.*

#### 4. What types of expansion are encountered during welding?

- A. Solid, transitional and fluid**
- B. Thermal, magnetic, electrical
- C. Elastic, plastic, creep
- D. Gas, liquid, solid

When metal is heated in welding, expansion happens in three distinct ways that match its state. First, while the metal is still solid, it expands thermally as the atoms vibrate more and take up more space. Then, as it reaches the melting range, it goes through a solid-to-liquid transition, which involves a volume change due to the phase change. Finally, once molten, it expands as a fluid—the liquid metal occupies more volume than the solid did at the same temperature. So the three expansion types are solid-state expansion, expansion during the solid-to-liquid transition, and fluid expansion in the molten pool. (Other options describe different ideas like states of matter or other kinds of deformation, but they don't capture these expansion modes.)

#### 5. What does SAW stand for?

- A. Submerged arc welding**
- B. Spot arc welding
- C. Shielded arc welding
- D. Standard arc welding

SAW stands for Submerged Arc Welding. In this process, the welding arc is buried under a blanket of granular flux, which melts to form a protective slag that shields the molten weld from the air. A continuous filler wire is fed into the joint, allowing very high deposition rates and making it ideal for welding thick sections and long welds. The shielding isn't from a gas around the arc, but from the flux beneath the surface, which is what gives it the "submerged" name. The other options don't fit SAW because they describe different welding concepts: spot arc welding refers to localized spot welds, shielding arc welding isn't the standard term for this method, and standard arc welding isn't a recognized process name.

#### 6. The explosive mixture range of acetylene in air is expressed as which percent range?

- A. 2.5 - 80%**
- B. 5 - 95%
- C. 1 - 10%
- D. 10 - 50%

Acetylene will ignite only if its concentration in air falls between its lower and upper explosive limits. For acetylene, this range is about 2.5% to 80% by volume in air. Below 2.5%, the mixture is too lean to ignite; above 80%, it's too rich to sustain a flame. The option 2.5% to 80% matches these LEL/UEL values, making it the correct range. The other ranges don't reflect acetylene's actual flammable limits.

## 7. What are 2 common problems encountered when using CAC-A?

- A. Surface hardening and carbonization**
- B. Porosity and cracking
- C. Warping and undercutting
- D. Incomplete fusion and slag inclusion

CAC-A uses a carbon electrode in ambient air to cut metal, and the process deposits carbon onto the workpiece. That carbon buildup leads to carbonization of the cut surface, forming a carbon-rich layer. The intense heat and rapid cooling near the cut edge also create a hardened surface, or surface hardening, which can make the edge more brittle and harder to machine or finish. Because the electrode is carbon, carburization and the resulting hard, carbon-rich surface are a natural byproduct of CAC-A, making surface hardening and carbonization common problems. The other issues listed are more typical of welding rather than cutting, so they're not characteristic of CAC-A.

## 8. Which property of copper makes it suitable for chill strips?

- A. Electrical conductivity
- B. Thermal conductivity**
- C. Magnetic permeability
- D. Density

Heat transfer is what matters here. Chill strips are used to pull heat away from the welded area so the metal cools and solidifies quickly, which helps control the weld bead and reduce distortion. Copper's high thermal conductivity means heat moves rapidly from the hot weld zone into the strip and then dissipates into the surroundings. This makes copper an effective heat sink for rapid cooling. Electrical conductivity is not the factor being leveraged in this context—it's about how well copper conducts heat, not electricity. Magnetic permeability is negligible for copper and doesn't influence cooling, and density doesn't determine how well a material can remove heat.

## 9. What does voltage affect in the weld puddle?

- A. Fluidity and arc striking**
- B. Puddle color
- C. Weld width
- D. Cooling rate

Voltage governs how the arc behaves and how much energy hits the weld pool. When voltage is higher, the arc length tends to be longer and more heat is delivered into the puddle each moment, making the molten metal flow more readily and spread out. That increased heat input also helps establish and maintain a stable arc, aiding in striking and re-striking the arc as you weld. Puddle color, width, and cooling rate are influenced more by other factors like material properties, current, travel speed, and overall heat input, so the direct, most noticeable effects of voltage on the puddle are its fluidity and the ease of arc initiation.

10. Which of the following is a reason aluminum may be chosen for a specific job?

A. Weight

B. Cost

C. High Density

D. Magnetic Properties

*Weight is the key factor. Aluminum's low density means you can achieve the required strength with significantly less mass, which reduces overall weight of the part or structure and leads to better performance, handling, and efficiency. In many applications, lighter components translate to improved fuel economy, speed, or ease of installation, making weight the primary reason to choose aluminum. Cost can influence decisions, but it isn't universally cheaper, so it isn't the defining reason here. High density would be the opposite of what aluminum offers, since aluminum has a relatively low density. While aluminum is non-magnetic, that trait isn't usually the main driver for material selection in this context.*

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## 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://weld101c.examzify.com>

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

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