

LA City Certified Welder Written Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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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. Interpass temperature is the temperature maintained between weld passes to control hydrogen diffusion, microstructure, and residual stresses; excessive temperatures can cause cracking. Which statement best describes interpass temperature?**
 - A. The temperature of the base metal during the welding pass**
 - B. Temperature maintained between weld passes to control hydrogen diffusion, microstructure, and residual stresses; excessive temperatures can cause cracking**
 - C. The temperature of the shielding gas supply**
 - D. Ambient temperature during welding**

- 2. In a groove weld, what is root opening and what is throat?**
 - A. Groove weld fills a groove with no root opening; throat is distance along axis**
 - B. Groove weld fills a groove in a joint; root opening is the gap at the root; throat is the minimum distance between weld face and root, controlling strength**
 - C. Groove weld is the same as a fillet weld; root opening is thickness; throat is width**
 - D. Groove weld does not involve a root opening; throat is weld length**

- 3. An E6011 electrode may be used with which current polarity?**
 - A. DC- only**
 - B. AC or DC+**
 - C. DC+ only**
 - D. AC only**

- 4. FCAW-S stands for which welding process?**
 - A. Flux-Cored Arc Welding Self-Shielded**
 - B. Flux-Cured Arc Welding Shielded**
 - C. Flux-Cored Arc Welding Shielded**
 - D. Fluxed-Cored Arc Welding Self-Shielded**

- 5. What is the effect of using an argon-based shielding gas with small percentages of CO₂ or O₂ for MIG welding of stainless steel?**
- A. Use pure oxygen as shielding gas.**
 - B. Use nitrogen enrichment.**
 - C. Shielding gas is not used for MIG.**
 - D. Use an argon-based shielding gas, often with small percentages of CO₂ or O₂ depending on alloy and process.**
- 6. In pre-weld checks, why is fit-up critical?**
- A. Improves arc stability.**
 - B. Reduces welding time.**
 - C. Ensures proper alignment, cleanliness, and safety readiness.**
 - D. Increases filler metal usage.**
- 7. Which statement best describes why moisture-sensitive electrodes require proper storage?**
- A. Moisture degrades arc stability and can cause hydrogen cracking; keep electrodes dry.**
 - B. Moisture causes corrosion of electrodes; reduces flux.**
 - C. It helps extend shelf life only.**
 - D. It prevents rust on storage container.**
- 8. What information is typically marked on filler metal spool or electrode packaging to indicate its composition and usage?**
- A. Diameter and length are the only markings.**
 - B. Manufacturer name and batch number.**
 - C. AWS classification, diameter, coating type, lot number, and approved usage or intended welding process.**
 - D. Color of coating only.**
- 9. Which welding process typically uses a non-consumable electrode and may require a separate filler metal?**
- A. SMAW (Stick)**
 - B. GMAW (MIG)**
 - C. GTAW (TIG)**
 - D. FCAW (Flux-Cored)**

10. Which of the following is a visual defect that indicates a weld does not fuse properly with the base metal?

- A. Adequate penetration**
- B. Lack of fusion**
- C. Even bead width**
- D. No undercut**

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Answers

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

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Explanations

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1. Interpass temperature is the temperature maintained between weld passes to control hydrogen diffusion, microstructure, and residual stresses; excessive temperatures can cause cracking. Which statement best describes interpass temperature?

- A. The temperature of the base metal during the welding pass**
- B. Temperature maintained between weld passes to control hydrogen diffusion, microstructure, and residual stresses; excessive temperatures can cause cracking**
- C. The temperature of the shielding gas supply**
- D. Ambient temperature during welding**

Interpass temperature is the temperature kept between weld passes to influence how hydrogen diffuses, how the microstructure develops in the heat-affected zone and weld metal, and how residual stresses are retained or relieved. Keeping this temperature within a controlled range helps prevent problems like cracking as the weld cools after each pass. If the interpass temperature gets too high, the repeated heating can coarsen the microstructure, raise residual stresses, and alter hydrogen behavior in a way that makes cracking more likely when the weld eventually solidifies. This is why welding procedures specify a maximum interpass temperature and require cooling between passes. The other described temperatures—during the actual weld pass, in the shielding gas supply, or ambient conditions—do not define interpass temperature.

2. In a groove weld, what is root opening and what is throat?

- A. Groove weld fills a groove with no root opening; throat is distance along axis**
- B. Groove weld fills a groove in a joint; root opening is the gap at the root; throat is the minimum distance between weld face and root, controlling strength**
- C. Groove weld is the same as a fillet weld; root opening is thickness; throat is width**
- D. Groove weld does not involve a root opening; throat is weld length**

In groove welding, two dimensions define how the weld fuses and how strong it will be: the root opening and the throat. The root opening is the gap at the root of the joint before welding—the space between the pieces where the weld root will form. This opening matters because it affects penetration and the ability to fuse the root properly; if it's too small you can get lack of fusion at the root, and if it's too large you'll need more heat and filler and may risk distortion. The throat is the minimum distance from the weld face to the root across the weld cross-section. It's the part of the weld that actually carries the load, so it largely determines the joint's strength. A larger throat means a thicker effective cross-section and typically a stronger weld, within practical limits. Other descriptions misstate the concepts: groove welds do involve a root opening, and the throat is not simply a length or width along the axis—it's the smallest cross-sectional distance from root to face that governs strength. Groove welds are a different geometry from fillet welds, so the terms don't map to fillet dimensions.

3. An E6011 electrode may be used with which current polarity?

- A. DC- only
- B. AC or DC+**
- C. DC+ only
- D. AC only

Polarity compatibility and arc stability for E6011. E6011 uses a cellulose-based flux that supports a stable arc across different current modes, so it can be used with alternating current or with direct current in the positive polarity. With AC, the current reversals help keep the arc stable and easy to control, while with DC+ the electrode is positive and the arc remains reliable, giving good fusion and bead quality in various positions and on marginally prepared surfaces. That versatility is what makes this electrode suitable for AC or DC+. It isn't limited to a single polarity, which is why other polarities aren't the best fit for the way this coating behaves.

4. FCAW-S stands for which welding process?

- A. Flux-Cored Arc Welding Self-Shielded**
- B. Flux-Cured Arc Welding Shielded
- C. Flux-Cored Arc Welding Shielded
- D. Fluxed-Cored Arc Welding Self-Shielded

FCAW-S means Flux-Cored Arc Welding Self-Shielded. In this approach, the electrode is a hollow wire filled with flux, and as it melts, the flux generates shielding gases around the weld. That internal shielding makes external shielding gas unnecessary, hence "self-shielded." The other phrasings use nonstandard wording or omit the distinction between self-shielded and gas-shielded, so they don't match the standard terminology for this process.

5. What is the effect of using an argon-based shielding gas with small percentages of CO₂ or O₂ for MIG welding of stainless steel?

- A. Use pure oxygen as shielding gas.
- B. Use nitrogen enrichment.
- C. Shielding gas is not used for MIG.
- D. Use an argon-based shielding gas, often with small percentages of CO₂ or O₂ depending on alloy and process.**

The key idea is that MIG welding stainless steel relies on a shielding gas that is mainly argon to protect the weld from atmospheric contamination and to create a stable, controllable arc. Stainless steels are highly reactive with air, so a clean argon shield helps produce a clean weld with good bead shape and proper properties. Small additions of CO₂ or O₂ are used to fine-tune arc stability, wetting, and penetration, and these percentages are chosen based on the specific stainless alloy and the welding process being used. Too much of either gas can cause excessive oxidation, porosity, or degraded corrosion resistance, so the additives are kept at low levels to balance weld quality with protection. That's why an argon-based shielding gas with small percentages of CO₂ or O₂ is the best answer.

6. In pre-weld checks, why is fit-up critical?

- A. Improves arc stability.**
- B. Reduces welding time.**
- C. Ensures proper alignment, cleanliness, and safety readiness.**
- D. Increases filler metal usage.**

Fit-up controls how the parts come together before welding, and that has a direct impact on the weld's quality and safety. When joints are properly aligned, the root and edge geometry match the design, the gaps and bevels are correct, and there's no movement during welding. This makes achieving full root penetration and uniform fusion much more reliable and helps prevent distortions later on. Cleanliness matters because contaminants such as oil, grease, rust, paint, or moisture can trap porosity and slag inclusions in the weld. A clean, dry surface ensures the weld metal fuses properly to the base metal and that the arc interacts with the metal rather than contaminants. Safety readiness is about securing the work and preventing movement or hazards during welding. Proper fixtures, clamps, and supports keep the joint from shifting, reduce the risk of burns or fire, and ensure the operator can work safely and maintain stable arc conditions. So, fit-up is critical because it directly ensures correct alignment, cleanliness, and safe, secure setup—foundations for a sound weld design and a safe welding process.

7. Which statement best describes why moisture-sensitive electrodes require proper storage?

- A. Moisture degrades arc stability and can cause hydrogen cracking; keep electrodes dry.**
- B. Moisture causes corrosion of electrodes; reduces flux.**
- C. It helps extend shelf life only.**
- D. It prevents rust on storage container.**

Moisture absorption in these electrodes leads to hydrogen being released into the weld when you strike an arc. That hydrogen can cause porosity and hydrogen-induced cracking, especially with low-hydrogen/high-strength welds. Keeping electrodes dry prevents that hydrogen from forming, which is why proper storage is essential for reliable arc stability and sound welds. The other ideas miss the main danger: moisture isn't primarily about corrosion, shelf life, or rust on the container. It's about hydrogen-related defects in the weld.

- 8. What information is typically marked on filler metal spool or electrode packaging to indicate its composition and usage?**
- A. Diameter and length are the only markings.**
 - B. Manufacturer name and batch number.**
 - C. AWS classification, diameter, coating type, lot number, and approved usage or intended welding process.**
 - D. Color of coating only.**

Filler metal packaging carries markings that quickly tell you what the weld metal will do and how to use it. The AWS classification communicates the weld metal's chemistry and typical properties, which helps you match it to the base metal and the required weld strength. The diameter shows the wire thickness, which affects bead size, deposition rate, and the equipment you'll use. The coating type describes the flux or coating on the electrode, which influences arc stability, slag formation, and welding characteristics. The lot number provides traceability in case of quality issues. And the statement of approved usage or intended welding process tells you which welding methods and conditions the filler is proven for (for example SMAW, GMAW, FCAW, or GTAW) and any relevant performance notes. That's why this combination of markings is the most informative and useful—it covers composition, physical fit, handling characteristics, traceability, and correct application. Other options miss one or more of these essential details.

- 9. Which welding process typically uses a non-consumable electrode and may require a separate filler metal?**
- A. SMAW (Stick)**
 - B. GMAW (MIG)**
 - C. GTAW (TIG)**
 - D. FCAW (Flux-Cored)**

TIG welding uses a non-consumable electrode. The electrode is a tungsten rod that does not melt into the weld pool, so the electrode itself stays intact while the weld metal is added separately—usually with a filler rod if filler is needed for the joint. This setup is often chosen when precise control, clean welds, or specific filler metal chemistry are important. Shielding gas, typically argon, protects the weld area from contamination, but the key point is that the tungsten electrode isn't consumed as the weld progresses, unlike other processes that rely on a consumable electrode that melts away to form the weld.

10. Which of the following is a visual defect that indicates a weld does not fuse properly with the base metal?

- A. Adequate penetration**
- B. Lack of fusion**
- C. Even bead width**
- D. No undercut**

Fusion between the weld metal and the base metal is what you're assessing. A visual defect that shows the weld metal didn't fuse with the base metal is lack of fusion. You'd look for a clear line or gap where the weld bead ends and the base metal remains unjoined, which can appear as un-welded areas at the root or along the interface. This happens when heat input, travel speed, or joint preparation isn't right, so the weld never actually fuses the base metal together. That's why it's the telltale sign of improper fusion. By contrast, adequate penetration means the weld has fused through the thickness where it's supposed to; an even bead width indicates consistent deposition; and no undercut means the weld toe isn't grooved. None of those point to a lack of fusion.

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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.

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

<https://lacitycertwelder.examzify.com>

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

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