

API 1104 – WELDING OF PIPELINES AND RELATED FACILITIES PRACTICE TEST (SAMPLE) STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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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 is expected from inspection reports regarding welding?**
 - A. Generic comments without details
 - B. Full transparency of testing results
 - C. Only final outcomes without method descriptions
 - D. All of these are acceptable
- 2. If no defects exceed 1/16" in a weld, what would that signify?**
 - A. The weld is ideal
 - B. The weld is unacceptable
 - C. The weld requires rework
 - D. The weld is acceptable
- 3. What is a "joint agreement" in the context of API 1104?**
 - A. A documented agreement that outlines welding requirements between parties involved
 - B. A verbal promise between two welders to uphold standards
 - C. A checklist for welding safety measures
 - D. An informal understanding of welding procedures
- 4. When is it permissible to remove the lineup clamp before the root bead is completed for butt welds?**
 - A. The completed part of the bead shall be in equal segments spaced approximately around the joint
 - B. The completed part of the bead shall be removed and re welded after the clamp is removed
 - C. The completed part of the bead shall be peened before removing the clamp
 - D. None of the above
- 5. What does API stand for in API 1104?**
 - A. American Petroleum Institute
 - B. Automated Process Integration
 - C. Applied Pipeline Integrity
 - D. Alternate Pipeline Infrastructure

- 6. What must the exposed surfaces of each fillet weld show?**
- A. Slag inclusions over 1/8"
 - B. At least 3/4" sound weld metal
 - C. Complete penetration and fusion
 - D. The tensile strength of the specimen
- 7. Which of the following is a sign of excessive porosity in a weld?**
- A. High tensile strength
 - B. Presence of small holes or voids
 - C. Consistent bead appearance
 - D. Strong fusion between layers
- 8. Which non-compliance affects the weld quality significantly and must be avoided?**
- A. Excessive slag inclusions
 - B. Incomplete fusion
 - C. Contaminated base metal
 - D. Dimensional inaccuracies
- 9. What document must be completed prior to a welder performing work?**
- A. A quality assurance plan
 - B. A welding procedure specification
 - C. A welder qualification record
 - D. An operation manual
- 10. What is the maximum allowed weld reinforcement on the inside diameter of a flash weld?**
- A. 1/8"
 - B. 1/16"
 - C. 1/32"
 - D. No limit of reinforcement

Answers

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

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Explanations

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1. What is expected from inspection reports regarding welding?

- A. Generic comments without details
- B. Full transparency of testing results**
- C. Only final outcomes without method descriptions
- D. All of these are acceptable

The expectation for inspection reports regarding welding is full transparency of testing results. This means that inspection reports should provide comprehensive and clear documentation of all findings, including the methods used, the results of various tests, and any observations made during the inspection process. Detailed reports are crucial in ensuring quality control and compliance with applicable standards, as they inform stakeholders about the weld's integrity and any potential issues that need addressing. Thorough documentation allows for better traceability and accountability, enabling any necessary follow-up actions to be taken if defects are identified. It also serves as a critical resource for future inspections or maintenance work, ensuring that complete information is available for ongoing evaluation of the welded structures. In contrast, generic comments without details fall short of providing the necessary insights into the quality and safety of the welds. Similarly, final outcomes without method descriptions do not offer adequate context or clarity about how those outcomes were reached. Therefore, the focus on full transparency reflects the industry's commitment to safety and quality assurance in welding practices.

2. If no defects exceed 1/16" in a weld, what would that signify?

- A. The weld is ideal
- B. The weld is unacceptable
- C. The weld requires rework
- D. The weld is acceptable**

When evaluating the quality of a weld, dimensions of defects play a crucial role in determining whether the weld meets the required standards. In this case, if no defects exceed 1/16", it indicates that the defects present in the weld, if any, are within an acceptable limit as defined by industry standards and codes, such as those outlined in API 1104. A maximum allowable defect size often specifies that defects of this magnitude do not compromise the structural integrity or functionality of the weld. Therefore, when defects remain under the 1/16" threshold, it demonstrates that the weld passes inspection and meets the criteria for acceptability laid out in the applicable documentation. This assessment contributes to ensuring safety and reliability in welded pipelines and related infrastructure, confirming that the weld can be deemed acceptable for its intended purpose.

3. What is a "joint agreement" in the context of API 1104?

- A. A documented agreement that outlines welding requirements between parties involved**
- B. A verbal promise between two welders to uphold standards
- C. A checklist for welding safety measures
- D. An informal understanding of welding procedures

In the context of API 1104, a "joint agreement" refers to a documented agreement that outlines welding requirements between the parties involved in a project. This formal documentation is crucial because it ensures that all parties have a clear understanding of the specific standards, procedures, and expectations regarding welding practices. Such agreements help guarantee consistency, quality, and safety in welding operations, particularly when multiple contractors or teams are involved in the project. By having a documented agreement, it minimizes ambiguity and risk of miscommunication, ensuring that everyone adheres to the same set of established criteria. This is essential in the pipeline industry where safety and compliance with regulatory standards are paramount. The agreement serves as a legal reference that can be utilized if disputes arise or if inspection criteria need to be revisited, thereby facilitating accountability and clarity among all stakeholders.

4. When is it permissible to remove the lineup clamp before the root bead is completed for butt welds?

- A. The completed part of the bead shall be in equal segments spaced approximately around the joint**
- B. The completed part of the bead shall be removed and re welded after the clamp is removed
- C. The completed part of the bead shall be peened before removing the clamp
- D. None of the above

The correct choice highlights the importance of maintaining joint integrity during the welding process. It is permissible to remove the lineup clamp before completing the root bead for butt welds when the completed part of the bead itself is in equal segments spaced around the joint. This requirement ensures that the joint remains properly aligned and supported, preventing any distortion or misalignment that could occur if the clamp is removed prematurely. This practice allows the welder to assess the quality of the root pass and make adjustments as necessary before proceeding with subsequent welding passes. By ensuring that the bead is distributed evenly around the joint, this approach minimizes the risk of uneven thermal contraction during cooling, which can lead to defects such as cracking or warping. In contrast, the other choices suggest practices that could compromise the integrity of the weld joint. For example, removing and rewelding the completed part after removing the clamp might lead to alignment issues or added stress on the joint. Peening the completed part before clamp removal creates additional concerns regarding the weld's cooling and stress distribution, which are not aligned with best practices for maintaining joint stability. Therefore, the chosen answer reflects the best practice for ensuring the quality and integrity of butt welds in pipeline welded joints.

5. What does API stand for in API 1104?

- A. American Petroleum Institute**
- B. Automated Process Integration
- C. Applied Pipeline Integrity
- D. Alternate Pipeline Infrastructure

API stands for American Petroleum Institute in the context of API 1104. This organization is a prominent trade association that represents the interests of the oil and natural gas industry in the United States. It plays a crucial role in developing industry standards, promoting safety, and ensuring environmental protection. API 1104 specifically addresses the welding of pipelines and related facilities, outlining standards to ensure the integrity and safety of these structures. The significance of API as a governing body adds credibility and authority to the standards outlined in API 1104, impacting how welding practices are implemented across the industry. Understanding this term is essential for anyone engaged in pipeline welding and maintenance, as it provides insight into the regulatory framework and industry benchmarks that guide safe and effective practices.

6. What must the exposed surfaces of each fillet weld show?

- A. Slag inclusions over 1/8"
- B. At least 3/4" sound weld metal
- C. Complete penetration and fusion**
- D. The tensile strength of the specimen

The correct choice requires the exposed surfaces of each fillet weld to exhibit complete penetration and fusion. This ensures the weld properly bonds the two elements being joined, providing the necessary strength and durability to withstand operational conditions. Complete penetration indicates that the weld metal has fused all the way through the joint, reaching the base metal on either side. This is critical in pipeline welding because it prevents the likelihood of voids or weak spots that can lead to failures, especially under high pressure or stress. Fusion ensures that the base metals and the weld metal interconnect effectively, resulting in a cohesive structure that can perform reliably. In pipeline construction, adhering to the standards for weld quality as prescribed in API 1104 is paramount to ensure the integrity and safety of the pipeline system. Such quality controls are designed to mitigate risks associated with leaks or structural failures that could have significant consequences. Thus, emphasizing the importance of complete penetration and fusion in fillet welds directly correlates with meeting industry standards for safety and performance.

7. Which of the following is a sign of excessive porosity in a weld?

- A. High tensile strength
- B. Presence of small holes or voids**
- C. Consistent bead appearance
- D. Strong fusion between layers

Excessive porosity in a weld is indicated by the presence of small holes or voids within the welded material. Porosity occurs when gas is trapped in the weld puddle as it solidifies, leading to the formation of these voids. This can weaken the weld joint by compromising its overall integrity and is typically a result of contamination, improper welding technique, or poor shielding gas coverage during the welding process. The presence of small holes or voids is a clear visual and physical sign that quality control measures have not been adequately met during the welding operation. Thus, identifying porosity through these small holes is essential for assessing the soundness of a weld and ensuring it meets the required standards for strength and reliability in pipeline applications. In contrast, high tensile strength, consistent bead appearance, and strong fusion between layers would not indicate excessive porosity. In fact, these characteristics are generally associated with well-executed welds that display proper bonding and structural integrity.

8. Which non-compliance affects the weld quality significantly and must be avoided?

- A. Excessive slag inclusions
- B. Incomplete fusion**
- C. Contaminated base metal
- D. Dimensional inaccuracies

Incomplete fusion is a significant non-compliance issue that directly affects weld quality. It occurs when the weld metal does not completely bond with the base metal, resulting in a lack of uniformity and strength in the weld joint. This can compromise the integrity of the pipeline and lead to potential failure under stress, pressure, or environmental conditions. Quality welds require complete metallurgical bonding between the welding rod and the base metal to ensure strength and resistance to cracks and other defects. If fusion is incomplete, the joint may exhibit weak points that can lead to failures, leaks, or other operational hazards. Hence, ensuring complete fusion during the welding process is critical for maintaining the structural integrity and performance of pipelines and related facilities. While other non-compliances like excessive slag inclusions, contaminated base metal, and dimensional inaccuracies can also impact the overall quality and performance of a weld, they do not jeopardize the fundamental bonding necessary for a reliable and safe weld joint to the same extent as incomplete fusion.

9. What document must be completed prior to a welder performing work?

- A. A quality assurance plan
- B. A welding procedure specification
- C. A welder qualification record**
- D. An operation manual

The requirement for a welder to have a completed welder qualification record prior to performing work is essential for ensuring that the welder has the necessary skills and competencies to adhere to the relevant specifications and standards. This record demonstrates that the welder has successfully passed qualifications tests that verify their ability to perform the required welding processes in accordance with established guidelines. A welder qualification record typically includes details about the welder's identification, the specific welding processes they're qualified in, the test results, and the test conditions. This documentation is crucial in the pipeline industry as it aims to assure both the employer and the regulatory bodies that the welder has been adequately trained and certified, thus contributing to the overall safety and integrity of the welding operations. While documents such as a quality assurance plan, a welding procedure specification, and an operation manual are important in the overall process of welding and ensuring quality and compliance, they do not specifically validate the individual capabilities of the welder. The welder qualification record focuses directly on the welder's proven skills and is a fundamental requirement for starting any welding operations.

10. What is the maximum allowed weld reinforcement on the inside diameter of a flash weld?

A. 1/8"

B. 1/16"

C. 1/32"

D. No limit of reinforcement

The maximum allowed weld reinforcement on the inside diameter of a flash weld is established to ensure both the structural integrity of the weld and the safety of the pipeline system. In the case of a flash weld, the permissible reinforcement is limited to 1/16". This specification helps maintain proper flow within the pipeline and prevents potential turbulence or stress concentrations that could lead to fatigue failure over time. Excessive weld reinforcement on the inside of a pipe could interfere with the flow characteristics and create points of weakness, which could be detrimental to the overall performance and integrity of the pipeline. By adhering to the 1/16" limit, welders ensure that the internal surfaces are as smooth as possible while providing enough structural support for the weld itself. This regulation aligns with best practices in pipeline construction and maintenance, enhancing the long-term durability of the system.

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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://api1104.examzify.com>

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

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