

API 572 RP - Inspection of Pressure Vessels 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. What tool is primarily used to check for buckling in support columns?**
 - A. Level**
 - B. Plumb line**
 - C. Measuring tape**
 - D. Laser alignment tool**

- 2. One of the properties of a solid alloy used in a pressure vessel is its ability to withstand:**
 - A. Radiation**
 - B. Extremely low temperatures**
 - C. High operating temperatures**
 - D. Electrical conductivity**

- 3. What is an important consideration when inspecting pressure vessels?**
 - A. Only external visual checks**
 - B. Internal corrosion assessments**
 - C. External paint conditions**
 - D. Availability of spare parts**

- 4. What is the critical temperature range for CUI in insulated low alloy steel vessels?**
 - A. 10-350°F**
 - B. 0-200°F**
 - C. 200-450°F**
 - D. 350-600°F**

- 5. What condition may cause fatigue in vibrating level bridles?**
 - A. Corrosion**
 - B. Fatigue**
 - C. Heat Stress**
 - D. Excessive Load**

- 6. What is a potential consequence of using poor quality materials in construction?**
- A. Increased durability**
 - B. Better aesthetics**
 - C. Fatigue in concrete structures**
 - D. Reduced costs**
- 7. Where do most cracks typically occur in pressure vessels?**
- A. In the body of the vessel**
 - B. At welds and heat affected zones**
 - C. Near the nozzles**
 - D. On the surface of the vessel**
- 8. What is a frequently overlooked issue that occurs during routine inspections of pressure vessels?**
- A. Surface corrosion**
 - B. Support structure integrity**
 - C. Insulation degradation**
 - D. Construction errors**
- 9. What stamp is required for a repair organization to meet the National Board Inspection Code?**
- A. R**
 - B. S**
 - C. P**
 - D. T**
- 10. What type of examination should be used for guy wires supporting tall vessels?**
- A. Visual Testing (VT)**
 - B. Magnetic Particle Testing**
 - C. Ultrasonic Testing**
 - D. Radiographic Testing**

Answers

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

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Explanations

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1. What tool is primarily used to check for buckling in support columns?

- A. Level
- B. Plumb line**
- C. Measuring tape
- D. Laser alignment tool

The primary tool used to check for buckling in support columns is the plumb line. A plumb line provides a vertical reference point, making it easier to visually assess whether a column is perfectly upright. When a support column is subject to buckling, its alignment can shift, resulting in a deviation from the vertical line of gravity. Using a plumb line, inspectors can quickly identify any misalignments that indicate potential structural issues. The accuracy and simplicity of the plumb line make it an effective choice for this specific inspection task, as it allows for direct observation of verticality without the complications that other tools might introduce in this scenario. This makes it particularly useful in determining if the columns are structurally sound and functioning as intended in maintaining the stability of the pressure vessel or any system relying on that support.

2. One of the properties of a solid alloy used in a pressure vessel is its ability to withstand:

- A. Radiation
- B. Extremely low temperatures
- C. High operating temperatures**
- D. Electrical conductivity

The ability of a solid alloy to withstand high operating temperatures is a crucial property for materials used in pressure vessels. Pressure vessels often operate under extreme conditions where not only internal pressure builds up but also where high temperatures can be present due to processes involved in storing or processing fluids. Alloys that are specifically designed for pressure vessel applications are engineered to maintain their mechanical strength and stability at elevated temperatures. They need to resist degradation, such as creep (the tendency of materials to deform permanently under the influence of mechanical stresses), oxidation, and other high-temperature-related failures. Such high-performance alloys are often employed in applications like refineries, chemical plants, and power generation, where consistent integrity under both pressure and temperature is vital for safety and efficiency. Understanding the thermal limits and mechanical properties of these materials ensures that engineers can choose the right alloy for the intended service conditions of a pressure vessel. The other options do not directly address the primary concern of pressure vessel performance under the typical operational conditions encountered in the industry. Radiation resistance is more relevant in contexts like nuclear reactors, while the ability to withstand extremely low temperatures pertains to cryogenic applications, and electrical conductivity is less significant in the context of pressure vessel integrity where thermal and mechanical stability is paramount.

3. What is an important consideration when inspecting pressure vessels?

- A. Only external visual checks
- B. Internal corrosion assessments**
- C. External paint conditions
- D. Availability of spare parts

When inspecting pressure vessels, internal corrosion assessments are crucial because they address a significant safety concern linked to the integrity of the vessel. Pressure vessels operate under high pressure and can contain corrosive substances that may lead to deterioration over time. Internal corrosion can compromise the structural integrity of the vessel, potentially leading to leaks or catastrophic failures. Therefore, conducting thorough internal inspections, which may include techniques like ultrasonic testing, radiography, or visual inspections with confined entry, is critical for ensuring that the vessel is safe for continued operation. Focusing solely on external visual checks may overlook critical internal issues that could pose serious risks, while assessing external paint conditions may not accurately reflect the internal state of the vessel. Although the availability of spare parts can impact maintenance strategies, it is not a direct consideration in the integrity assessment during inspections. Internal corrosion assessments ensure that potential failures can be detected early, which is essential for maintaining the overall safety and effectiveness of pressure vessel operations.

4. What is the critical temperature range for CUI in insulated low alloy steel vessels?

- A. 10-350°F**
- B. 0-200°F
- C. 200-450°F
- D. 350-600°F

The critical temperature range for Corrosion Under Insulation (CUI) in insulated low alloy steel vessels is indeed from 10 to 350°F. This temperature range is significant because it is where moisture can effectively condense and create an environment conducive to corrosion underneath insulation materials. Low alloy steels are particularly susceptible to CUI in this range due to their composition and the presence of moisture. At temperatures below 10°F, the risk of condensation is minimized, while above 350°F, the risk of corrosion decreases as temperatures rise, which often leads to rapid drying of any moisture that may be present. Thus, understanding this temperature range is vital for implementing appropriate inspection and maintenance strategies to prevent CUI, ensuring the integrity and safety of the pressure vessels.

5. What condition may cause fatigue in vibrating level bridles?

- A. Corrosion
- B. Fatigue**
- C. Heat Stress
- D. Excessive Load

Fatigue, in the context of vibrating level bridles, refers to the gradual deterioration of material properties due to repeated stress cycles over time. Vibrating level bridles are often subjected to dynamic forces that can lead to oscillations and vibrations, which, if sustained, can result in material fatigue. This fatigue is a critical concern, as it may lead to cracks or failure in the components, compromising their structural integrity and potentially leading to safety hazards. The phenomenon is particularly relevant in environments where the level bridles are expected to operate continually under mechanical stress. Cycles of loading and unloading contribute to the material's fatigue life, leading to potential failure even when the applied loads are within acceptable limits. Thus, understanding and monitoring the conditions that contribute to fatigue are vital in maintaining operational safety and reliability in pressure vessel applications.

6. What is a potential consequence of using poor quality materials in construction?

- A. Increased durability
- B. Better aesthetics
- C. Fatigue in concrete structures**
- D. Reduced costs

Utilizing poor quality materials in construction can lead to fatigue in concrete structures. This is primarily because inferior materials may lack the necessary structural integrity, strength, and durability expected in construction applications. When concrete is subjected to repeated loads or environmental stresses, the lower quality can result in micro-cracking and degradation over time, ultimately leading to structural fatigue. This can compromise the safety and longevity of the structure, increasing the risk of failure, which can have serious consequences in terms of safety and costly repairs or replacements. In contrast, options like increased durability and better aesthetics are unlikely outcomes of using subpar materials, as poor quality typically leads to deterioration rather than enhancement of the structure's properties. Additionally, while reduced costs might seem appealing, the long-term implications of using inferior materials often outweigh any initial financial savings by leading to more frequent repairs and maintenance requirements.

7. Where do most cracks typically occur in pressure vessels?

- A. In the body of the vessel**
- B. At welds and heat affected zones**
- C. Near the nozzles**
- D. On the surface of the vessel**

Most cracks in pressure vessels typically occur at welds and in heat-affected zones due to the stress concentrations and metallurgical changes that happen during the welding process. When two pieces of metal are joined together, the intense heat can alter the microstructure of the material in the vicinity of the weld. This can lead to a reduction in toughness and increased susceptibility to cracking, particularly under stress or in the presence of corrosive environments. Additionally, welds are often subject to different thermal cycles than the base metal, which can create residual stresses. These residual stresses, combined with the notches created at the weld interface, can significantly increase the likelihood of crack formation. As vessels are subjected to internal pressure and operational stresses, these areas become critical points where failures are more likely to initiate and propagate. While cracks can occur in other areas of the vessel, such as the body, near the nozzles, or on the surface, the combination of stresses and material changes at the welds and heat-affected zones makes them the most common locations for crack initiation.

8. What is a frequently overlooked issue that occurs during routine inspections of pressure vessels?

- A. Surface corrosion**
- B. Support structure integrity**
- C. Insulation degradation**
- D. Construction errors**

Insulation degradation is often a frequently overlooked issue during routine inspections of pressure vessels. Insulation plays a crucial role in maintaining temperature control, thermal efficiency, and protecting personnel from hot surfaces. Over time, insulation can become damaged due to factors such as moisture intrusion, physical wear, or chemical exposure. This degradation can lead to increased energy costs, loss of temperature control, and potentially hazardous conditions if not addressed. During routine inspections, inspectors may focus primarily on visible components like surface corrosion or support structures without adequately assessing the condition of insulation. This oversight can result in unrecognized thermal inefficiencies or safety risks. By regularly evaluating the integrity of insulation, facilities can mitigate these risks and ensure the overall safety and efficiency of their pressure vessels.

9. What stamp is required for a repair organization to meet the National Board Inspection Code?

- A. R**
- B. S**
- C. P**
- D. T**

The R stamp is specifically designated for organizations that perform repairs and alterations to pressure vessels and boilers in accordance with the National Board Inspection Code (NBIC). This certification demonstrates that the organization has met the necessary qualifications and adheres to strict safety and quality standards required by the NBIC for the repair and alteration of these critical components. To receive the R stamp, a repair organization must implement a quality control program that complies with the NBIC requirements, and the organization must also be capable of conducting repairs in accordance with applicable codes and standards. The R stamp signifies that the organization's personnel are qualified and that they complete repairs using approved procedures, thereby ensuring the integrity and safety of the pressure vessels and boilers after modifications or repairs are made. The other stamps referenced, such as the S, P, and T stamps, are meant for different purposes. The S stamp is for manufacturers of pressure vessels, the P stamp is for companies that manufacture pressure relief devices, and the T stamp applies to those who fabricate thermal vessels. Each of these stamps addresses specific areas of expertise and compliance, but none pertain to the functions covered by the R stamp concerning repairs and alterations.

10. What type of examination should be used for guy wires supporting tall vessels?

- A. Visual Testing (VT)**
- B. Magnetic Particle Testing**
- C. Ultrasonic Testing**
- D. Radiographic Testing**

The appropriate examination method for guy wires supporting tall vessels is Visual Testing (VT). This method involves a thorough visual inspection of the guy wires to identify any visible signs of deterioration, such as corrosion, wear, or physical damage. Visual Testing is particularly valuable for guy wires because it allows inspectors to observe both the general condition of the wires and their connections, ensuring that they are properly tensioned and securely anchored. This method is effective, as it can quickly highlight any immediate issues that may affect the structural integrity of the guy wires. It's a straightforward and cost-effective approach, typically conducted by trained personnel who can identify any potential safety hazards associated with the supporting cables. Given the risk factors involved in the support of tall vessels, maintaining the integrity of these components through regular visual inspections is crucial. Other testing methods like Magnetic Particle Testing, Ultrasonic Testing, and Radiographic Testing are more suited for assessing the integrity of welds, structural components, or materials where subsurface or internal flaws are a concern. They involve more complex procedures and equipment that are not necessary for the routine examination of guy wires, where visual conditions are usually sufficient to assess their condition effectively.

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://api572rp.examzify.com>

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

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