

API 572 RP - Inspection of Pressure Vessels Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

This is a sample study guide. To access the full version with hundreds of 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. Don't worry about getting everything right, 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, and take breaks to retain information better.

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.

7. Use Other Tools

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!

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Questions

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- 1. What is the primary impact of damaged column trays on a column operation?**
 - A. Affect the efficiency of the column operation**
 - B. Increase the pressure inside the column**
 - C. Enhance the separation process**
 - D. Improve liquid distribution**

- 2. What is the term for a break or void in a paint coating?**
 - A. Crack**
 - B. Holiday**
 - C. Chip**
 - D. Flaw**

- 3. What are the two primary factors of risk associated with pressure vessels?**
 - A. Temperature and pressure**
 - B. Consequence and probability of failure**
 - C. Material strength and fatigue**
 - D. Inspection frequency and equipment age**

- 4. During an internal inspection of a large vessel, the inspector discovers a significant coke deposit. What is the next appropriate action?**
 - A. Clean the deposit immediately.**
 - B. Measure the deposit thickness.**
 - C. Determine if base metal under deposit is corroding.**
 - D. Ignore the deposit if it is stable.**

- 5. For a vessel subject to uniform corrosion, what is the minimum number of thickness measurements required?**
 - A. One on the entire vessel**
 - B. Two on each major design section**
 - C. One on each major design section**
 - D. One per inspection quadrant**

6. Which testing method is effective for checking disbonded fireproofing?

- A. Visual inspection**
- B. Hammer testing with light taps**
- C. Thermal imaging**
- D. Ultrasonic testing**

7. In addition to resisting erosion, what else do non-metallic liners aim to achieve?

- A. Decrease structural integrity**
- B. Increase shell temperature**
- C. Reduce shell temperature**
- D. Enhance chemical reactivity**

8. What testing methods are generally used to inspect tray supports and baffles?

- A. Visual and Hammer Testing**
- B. Ultrasonic and Dye Penetrant Testing**
- C. WFMPT and Radiographic Testing**
- D. Electrical testing**

9. What are two primary reasons for using non-metallic liners in pressure vessels?

- A. Reduce weight and enhance strength**
- B. Resist erosion and insulate to reduce shell temperature**
- C. Enhance flexibility and increase thermal conductivity**
- D. Lower cost and simplify installation**

10. Cooling water tubes are often made of which of the following materials?

- A. Copper alloys**
- B. Stainless steel**
- C. Plastic composites**
- D. Carbon steel**

Answers

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

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Explanations

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1. What is the primary impact of damaged column trays on a column operation?

- A. Affect the efficiency of the column operation**
- B. Increase the pressure inside the column**
- C. Enhance the separation process**
- D. Improve liquid distribution**

Damaged column trays primarily affect the efficiency of the column operation by disrupting the intended flow patterns and mass transfer processes within the column. Column trays are designed to facilitate the contact between vapor and liquid phases, allowing for effective separation of components based on their volatilities. When trays are damaged, this contact area is impaired, leading to poor mass transfer and lower separation efficiency. This decreased efficiency can manifest as increased carryover of lighter components with the liquid or reduced removal of heavier components, which ultimately compromises the overall performance of the distillation or absorption process. Efficient operation depends on proper liquid distribution and vapor flow, which are directly impacted by the condition of the trays. While one might assume that damage could lead to increased pressure or improved separation, those outcomes are generally not associated with tray damage and often reflect misconceptions about column operations.

2. What is the term for a break or void in a paint coating?

- A. Crack**
- B. Holiday**
- C. Chip**
- D. Flaw**

The term for a break or void in a paint coating is referred to as a "holiday." In the context of protective coatings, a holiday indicates an area where the coating is absent or has failed, potentially exposing the underlying substrate to environmental elements and leading to deterioration or corrosion. The identification of holidays is critical in the inspection process of pressure vessels and other structures, as these voids can compromise the integrity and effectiveness of the protective layer meant to prevent damage from moisture, chemicals, and other potential hazards. Inspectors typically use various methods, such as holiday detectors or electrical testing, to locate these defects during the quality assurance processes. Understanding this term is essential for professionals involved in coating applications and inspections, ensuring that they can communicate effectively about the condition of the coatings and take appropriate remedial actions when necessary.

3. What are the two primary factors of risk associated with pressure vessels?

- A. Temperature and pressure**
- B. Consequence and probability of failure**
- C. Material strength and fatigue**
- D. Inspection frequency and equipment age**

The two primary factors of risk associated with pressure vessels are consequence and probability of failure. Understanding these factors is essential in managing the safety and integrity of pressure vessels. Consequence refers to the potential impact that a failure of the pressure vessel may have, including possible injury to personnel, environmental damage, and economic loss. Evaluating consequence helps determine the severity of risks and the potential need for mitigation measures. Probability of failure, on the other hand, estimates the likelihood that a failure will occur. This assessment can be influenced by various factors such as material degradation, operational conditions, and maintenance practices. By understanding how likely a failure is to occur, organizations can prioritize inspections, maintenance, and monitoring activities effectively. Together, these two factors create a comprehensive risk profile for pressure vessels, allowing for better decision-making and resource allocation to enhance safety and reliability.

4. During an internal inspection of a large vessel, the inspector discovers a significant coke deposit. What is the next appropriate action?

- A. Clean the deposit immediately.**
- B. Measure the deposit thickness.**
- C. Determine if base metal under deposit is corroding.**
- D. Ignore the deposit if it is stable.**

Choosing to determine if the base metal under the coke deposit is corroding reflects an important aspect of pressure vessel inspection and integrity management. When significant coke deposits are found, it is critical to assess the condition of the underlying material. This is because the presence of deposits can often hide corrosion or other forms of degradation that may compromise the vessel's integrity. Measuring the deposit thickness could provide some information about the extent of the buildup, but it does not directly address the condition of the base metal beneath. Simply cleaning the deposit may not be advisable without understanding the condition of the metal underneath. Ignoring the deposit, even if it appears stable, poses a risk, as any undetected corrosion could lead to failure under operating conditions. Hence, the focus on evaluating the base metal ensures that the inspector is considering both the immediate safety and long-term reliability of the pressure vessel. This assessment is crucial for making informed decisions about maintenance or repairs that may be necessary to ensure continued safe operation.

5. For a vessel subject to uniform corrosion, what is the minimum number of thickness measurements required?

- A. One on the entire vessel**
- B. Two on each major design section**
- C. One on each major design section**
- D. One per inspection quadrant**

The minimum number of thickness measurements required for a vessel subject to uniform corrosion is one on each major design section. This practice is rooted in the need to effectively assess the structural integrity and safety of pressure vessels that experience corrosion over time. By taking one thickness measurement in each major design section, inspectors can determine the extent of corrosion and the remaining wall thickness. This method ensures that all significant areas are evaluated, allowing for a comprehensive understanding of the vessel's condition. Uniform corrosion can affect different sections of the vessel to varying degrees based on factors like fluid flow, temperature, and material properties. Therefore, measuring each major design section allows inspectors to identify areas that may be more susceptible to corrosion and require further monitoring or remedial action. This approach is aligned with best practices in vessel inspection because it provides a balanced assessment without overemphasizing any single area of the vessel while still being cost-effective in terms of required labor and time.

6. Which testing method is effective for checking disbonded fireproofing?

- A. Visual inspection**
- B. Hammer testing with light taps**
- C. Thermal imaging**
- D. Ultrasonic testing**

The effectiveness of hammer testing with light taps for checking disbonded fireproofing lies in its ability to identify areas where the fireproofing material has separated from the substrate. When the hammer is tapped against the fireproofing, the sound produced and the response felt through the hammer can indicate the integrity of the bond between the fireproofing and the surface it is meant to protect. Disbonded areas typically resonate differently, often producing a dull sound or feeling, which suggests that the insulation is not adequately adhered. This method is straightforward and cost-effective, making it suitable for field applications. Inspectors can gather immediate feedback on the condition of the fireproofing without needing complex equipment. It is particularly useful because it can be performed quickly and does not require extensive preparation or setup. Other testing methods have their advantages, but they may not be as direct in assessing disbondment as hammer testing. Visual inspection may be limited by what is immediately observable, thermal imaging can identify temperature differences but might not specifically indicate disbonding, and ultrasonic testing can provide detailed material properties yet may be more complex to apply in real-world scenarios. Hence, hammer testing is a preferred choice for its practical effectiveness in identifying disbonded fireproofing.

7. In addition to resisting erosion, what else do non-metallic liners aim to achieve?

- A. Decrease structural integrity**
- B. Increase shell temperature**
- C. Reduce shell temperature**
- D. Enhance chemical reactivity**

Non-metallic liners are primarily used to protect pressure vessels from erosion, but they also serve to reduce shell temperature. These liners can enhance thermal insulation properties, which helps in maintaining the desired operating temperature of the vessel. By reducing the shell temperature, these liners help prevent potential thermal-related issues, such as reducing the risk of corrosion or fatigue in the underlying metal structure. This is particularly relevant in systems where temperature management is critical to ensure safety and extend the lifespan of the pressure vessel. The other options relate to undesirable outcomes. Decreasing structural integrity or increasing shell temperature would compromise the safety and performance of the vessel. Additionally, enhancing chemical reactivity is not a function of non-metallic liners; instead, they are designed to minimize chemical interactions that could lead to deterioration or failure. Therefore, reducing shell temperature is a beneficial attribute that aligns with the role of non-metallic liners.

8. What testing methods are generally used to inspect tray supports and baffles?

- A. Visual and Hammer Testing**
- B. Ultrasonic and Dye Penetrant Testing**
- C. WFMPT and Radiographic Testing**
- D. Electrical testing**

The use of visual and hammer testing as the correct choice for inspecting tray supports and baffles is based on the fundamental principles of maintaining structural integrity and ensuring the effectiveness of these components in pressure vessels. Visual testing is a straightforward and effective method that allows inspectors to identify obvious signs of wear, corrosion, cracks, or other deficiencies that could affect the functionality of tray supports and baffles. This method is often the first step in any inspection process because it can reveal surface defects without any special equipment. Hammer testing, on the other hand, is used to assess the integrity of the material by striking it lightly with a hammer and listening for the sound it produces. Variability in sound can indicate material degradation such as thinning or the presence of voids. This acoustic response provides valuable information about the condition of the material, helping inspectors to verify the mechanical properties and identify areas that may require more in-depth inspection or remediation. In contrast, some of the other testing methods listed are less suited for this specific application. While ultrasonic and dye penetrant testing are excellent for identifying subsurface defects and surface-breaking flaws respectively, they may not be the primary methods employed for inspection of tray supports and baffles, which usually require a combination of surface examination and structural integrity assessments. Similarly

9. What are two primary reasons for using non-metallic liners in pressure vessels?

- A. Reduce weight and enhance strength**
- B. Resist erosion and insulate to reduce shell temperature**
- C. Enhance flexibility and increase thermal conductivity**
- D. Lower cost and simplify installation**

The use of non-metallic liners in pressure vessels serves several important functions, two of which are to resist erosion and to provide insulation to help reduce shell temperature. Non-metallic liners are often made from materials that have excellent resistance to corrosion and erosion, thereby prolonging the life of the pressure vessel and enhancing its reliability. This is particularly important in environments where aggressive chemicals or high flow velocities can cause wear and damage to the vessel's structural integrity. Additionally, the insulating properties of non-metallic liners play a crucial role in temperature control within the pressure vessel. By providing a barrier against heat transfer, these liners can help maintain operational efficiency and protect the vessel's outer shell from excessive heat, which can lead to thermal fatigue or failure. Insulation also contributes to energy savings by reducing heat losses. These functions highlight why the choice regarding non-metallic liners significantly impacts the overall performance and longevity of pressure vessels in various industrial applications.

10. Cooling water tubes are often made of which of the following materials?

- A. Copper alloys**
- B. Stainless steel**
- C. Plastic composites**
- D. Carbon steel**

Copper alloys are commonly used for cooling water tubes due to their excellent thermal conductivity, which allows for efficient heat transfer. These materials are also resistant to corrosion and erosion in water applications, making them ideal for use in heat exchangers and similar systems. The high ductility and strength of copper alloys contribute to their longevity and reliability in environments where thermal and flow conditions can be challenging. In contrast, while other materials such as stainless steel, plastic composites, and carbon steel might be used in certain applications, they do not offer the same combination of thermal performance and corrosion resistance that copper alloys provide. Stainless steel, for instance, is more resistant to certain types of corrosion but is generally not as effective in heat transfer compared to copper alloys. Plastic composites may not withstand high temperatures or pressures typically found in cooling applications, and carbon steel can be prone to rust and corrosion unless adequately treated or coated. Therefore, the preference for copper alloys in cooling water tubes is based on their superior properties in relation to the demands of heat exchange processes.

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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