

# Minnesota High Pressure Piping 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. Which diameter would classify SS welded pipe in NH3 as Sch 10?**
  - A. 4"
  - B. 7"
  - C. 10"
  - D. 8"
  
- 2. What is the minimum temperature required to weld on a pipe?**
  - A. 40 degrees
  - B. 50 degrees
  - C. 60 degrees
  - D. 70 degrees
  
- 3. What must be done before discharging a high-pressure trap into a low-pressure receiver?**
  - A. Empty into a mixing tank
  - B. Run through a flash tank
  - C. Vent to the atmosphere
  - D. Directly discharge without modification
  
- 4. What is the recommended distance between hangers for a 1" pipe in a steam system?**
  - A. 5 feet
  - B. 9 feet
  - C. 7 feet
  - D. 10 feet
  
- 5. Ammonia systems designed to operate below -20 degrees F must comply with which standards?**
  - A. ASME B31.1
  - B. ANSI B31.5
  - C. ASME B31.5 or ANSI B31.5
  - D. API 570

**6. What is the recommended distance between hangers for a 12" pipe in a steam system?**

- A. 20 feet
- B. 25 feet
- C. 30 feet
- D. 35 feet

**7. How much does 1 cubic foot of water weigh?**

- A. 58.45 lbs
- B. 62.55 lbs
- C. 65.12 lbs
- D. 70.00 lbs

**8. What is the refrigeration number for NH3?**

- A. R22
- B. R134a
- C. R717
- D. R410A

**9. What is the critical temperature of ammonia (NH3)?**

- A. 250 degrees F
- B. 271.4 degrees F
- C. 300 degrees F
- D. 320 degrees F

**10. What is the distance between hangers for a 12" pipe in a water system?**

- A. 20 feet
- B. 23 feet
- C. 25 feet
- D. 30 feet

## **Answers**

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

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## **Explanations**

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**1. Which diameter would classify SS welded pipe in NH3 as Sch 10?**

- A. 4"**
- B. 7"**
- C. 10"**
- D. 8"**

The classification of stainless steel (SS) welded pipe as Schedule (Sch) 10 depends on the nominal pipe diameter and the corresponding wall thickness defined by the American National Standards Institute (ANSI) or the American Society for Testing and Materials (ASTM) standards. For Sch 10, the thickness of the pipe wall is relatively thin compared to other schedules, which makes it suitable for systems under low to moderate pressure, such as ammonia (NH3) piping systems. In the case of an 8-inch nominal pipe diameter, the wall thickness for Schedule 10 is indeed compatible with the requirements for ammonia transport. The Sch 10 standard allows for the necessary strength while ensuring the weight and cost of the piping remain manageable. Using an 8-inch pipe allows the system to effectively transport ammonia under the expected conditions without compromising safety. The other diameter options do not meet the requirements as closely for Sch 10 classification. For example, 4-inch, 7-inch, and 10-inch pipes have a different set of wall thicknesses under Sch 10, which means they would behave differently in terms of their pressure-handling capability and overall application suitability in a high-pressure piping system. Therefore, the understanding of pipe dimensions and their corresponding wall thicknesses is

**2. What is the minimum temperature required to weld on a pipe?**

- A. 40 degrees**
- B. 50 degrees**
- C. 60 degrees**
- D. 70 degrees**

The minimum temperature required to weld on a pipe is crucial for ensuring the integrity and quality of the weld. Welding at temperatures below the specified minimum can lead to increased risks of defects, such as brittle fractures or inadequate fusion, due to the effects of cold temperatures on the materials being joined. In this case, the specified minimum of 50 degrees Fahrenheit is important because it helps maintain the necessary characteristics of the pipe materials, including their ductility and the effectiveness of the welding process. At this temperature, the materials can properly absorb and dissipate the heat generated during welding, leading to a stronger and more reliable bond. Welding below 50 degrees could lead to challenges such as higher levels of stress on the weld and the welding materials, which could compromise the overall structural integrity of the pipeline. By adhering to this minimum temperature, welders help ensure that the welding process achieves the desired mechanical properties in the final product, thus supporting safe and effective operation of high-pressure piping systems.

**3. What must be done before discharging a high-pressure trap into a low-pressure receiver?**

- A. Empty into a mixing tank**
- B. Ran through a flash tank**
- C. Vent to the atmosphere**
- D. Directly discharge without modification**

Before discharging a high-pressure trap into a low-pressure receiver, it is essential to run the discharge through a flash tank. The primary purpose of a flash tank is to allow the high-pressure fluid to expand and vaporize, which helps to manage pressure and thermal energy. When high-pressure liquid enters a low-pressure environment without proper handling, it can lead to rapid vaporization and potentially hazardous conditions due to pressure differentials. Using a flash tank helps in controlling the transition from high pressure to low pressure while minimizing risks such as potential damage to equipment or safety hazards for personnel. This process ensures that proper phase separation occurs, allowing for controlled discharge into the low-pressure receiver without causing surges or unwanted pressure fluctuations. Appropriate handling is crucial in high-pressure piping practices to maintain system integrity and safety, which is why utilizing a flash tank is the recommended procedure in this scenario.

**4. What is the recommended distance between hangers for a 1" pipe in a steam system?**

- A. 5 feet**
- B. 9 feet**
- C. 7 feet**
- D. 10 feet**

The recommended distance between hangers for a 1" pipe in a steam system is indeed 9 feet. This guideline is based on industry standards that ensure proper support and reduced stress on pipe joints and connections. Proper spacing of hangers is crucial to maintain the integrity of the piping system, especially when dealing with the thermal expansion and contraction that occurs in steam applications. If hangers are placed too far apart, it can lead to sagging, misalignment, and additional strain on the pipes, which may increase the risk of leaks or failures. Therefore, adhering to the standard spacing helps ensure safe and efficient operation of the steam system. Proper installation practices support the longevity of the system and comply with relevant codes and regulations. Options that suggest distances other than 9 feet may not provide sufficient support, leading to potential risks associated with inadequate hanger placement.

**5. Ammonia systems designed to operate below -20 degrees F must comply with which standards?**

- A. ASME B31.1**
- B. ANSI B31.5**
- C. ASME B31.5 or ANSI B31.5**
- D. API 570**

The correct choice is based on the specific requirements for ammonia piping systems, particularly those that function at low temperatures. Ammonia systems intended to operate below -20 degrees Fahrenheit fall under the jurisdiction of ANSI B31.5, which provides guidelines for the design, fabrication, testing, and inspection of refrigerated piping systems, including those carrying ammonia. This standard addresses the unique challenges associated with low-temperature service and the specific material and design considerations necessary for safe operation in such conditions. Additionally, the inclusion of ASME B31.5 signifies that compliance with both standards is appropriate, ensuring that both the design and operational aspects are adequately covered. By conforming to these standards, operators can ensure the safety, integrity, and reliability of the ammonia systems, particularly in environments where extreme temperatures can significantly affect material properties and system performance.

**6. What is the recommended distance between hangers for a 12" pipe in a steam system?**

- A. 20 feet**
- B. 25 feet**
- C. 30 feet**
- D. 35 feet**

In high pressure piping systems, especially for steam lines, proper support and spacing between hangers is crucial for the integrity and safety of the piping installation. For a 12-inch diameter pipe, the recommended distance between hangers is 30 feet. This spacing helps to prevent sagging and minimizes the risk of excessive stress being placed on the pipe due to temperature changes, thermal expansion, and weight. When considering factors such as pipe material, fluid type, and temperature fluctuations, a spacing of 30 feet aligns with industry standards for accommodating these conditions. It ensures that the thermal and mechanical stresses on the pipe are effectively managed, maintaining the structural integrity and efficiency of the steam system. Using closer spacing could lead to unnecessary costs and installation complexity, while greater spacing might not provide adequate support, risking pipe damage and system failures. Therefore, adhering to the 30-foot standard is both practical and aligned with best engineering practices for high-pressure steam piping systems.

## 7. How much does 1 cubic foot of water weigh?

- A. 58.45 lbs
- B. 62.55 lbs**
- C. 65.12 lbs
- D. 70.00 lbs

One cubic foot of water weighs approximately 62.55 pounds at a temperature of 39.2 degrees Fahrenheit, which is where water is most dense. This value is widely used in engineering and fluid calculations, making it a standard reference in various fields, including piping practices. The specific weight can vary slightly based on temperature and impurities in the water, but for most practical applications, the accepted weight is close to 62.55 pounds. Using this value is crucial in high-pressure piping calculations, as the weight of the water impacts the pressure exerted on the piping system, the necessary strength of materials, and the overall design considerations for safe and effective operation. Understanding the weight of water is fundamental for professionals working with fluid systems, ensuring they can properly design and maintain those systems under various pressures and conditions.

## 8. What is the refrigeration number for NH3?

- A. R22
- B. R134a**
- C. R717**
- D. R410A

The refrigeration number for NH3, which is ammonia, is designated as R717. This classification is important in the field of refrigeration and HVAC (Heating, Ventilation, and Air Conditioning) because different refrigerants have specific properties that make them suitable for various applications. Ammonia, or R717, is known for its efficiency and effectiveness as a refrigerant, particularly in commercial and industrial refrigeration systems. In contrast, the other options listed (R22, R134a, and R410A) are types of refrigerants with different chemical compositions and applications. R22 is a chlorodifluoromethane that has been phased out in many applications due to environmental concerns. R134a is a hydrofluorocarbon used primarily in domestic refrigerators and automotive applications. R410A is a blend of hydrofluorocarbons that is commonly employed in air conditioning systems. Understanding the designation of R717 helps technicians and engineers choose the appropriate refrigerant based on its properties and compatibility with existing systems.

## 9. What is the critical temperature of ammonia (NH<sub>3</sub>)?

- A. 250 degrees F
- B. 271.4 degrees F**
- C. 300 degrees F
- D. 320 degrees F

The critical temperature of a substance is the highest temperature at which it can exist as a liquid, regardless of the pressure applied. For ammonia (NH<sub>3</sub>), this critical temperature is 271.4 degrees Fahrenheit. At temperatures above this point, ammonia cannot be condensed into a liquid, even if the pressure is increased. This property is vital in understanding how ammonia behaves under various conditions, particularly in applications involving high-pressure piping systems where precise temperature management is crucial. Knowing the critical temperature is essential for engineers and technicians working with ammonia in refrigeration systems and other industrial processes, as it influences the design and operation of equipment to ensure safety and efficiency.

## 10. What is the distance between hangers for a 12" pipe in a water system?

- A. 20 feet
- B. 23 feet**
- C. 25 feet
- D. 30 feet

The standard distance between hangers for a 12-inch pipe in a water system is typically established to ensure proper support and minimize the risk of sagging or stresses on the pipe. In this case, the correct choice of 23 feet reflects industry guidelines set forth by various engineering standards. These standards consider factors such as the weight of the piping system, potential thermal expansion, and the type of fluid being transported, all of which dictate the necessary support intervals to maintain optimal performance and safety. For a 12-inch water pipe, the 23-foot distance adequately balances support and structural integrity, accommodating the weight while ensuring that any movement of the pipe (due to temperature changes or other factors) is managed without causing damage or stress. This dimension is often derived from tables or codes that specify maximum spacing for hangers based on pipe diameter and application. Understanding these standards is crucial for ensuring that high pressure piping installations are reliable and compliant with safety requirements.

# 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://mvhighpressurepiping.examzify.com>**

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

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