

HVAC ENGINEER

INTERVIEW QUESTIONS & ANSWERS



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HVAC Technical Knowledge Interview Questions

Since **HVAC engineers** work on complex and highly technical jobs, it's important a candidate possesses the right level of knowledge and technical skill.

Engineering candidates should possess comprehensive knowledge of heating and air conditioning systems, which includes selecting, sizing, and configuring air handling units (AHUs), fan coil units (FCUs), air-cooled or water-cooled chillers, and boilers. They must also thoroughly understand the refrigeration cycle and refrigerants.

HVAC design relies heavily on an understanding and analysis of psychrometric principles. Besides technical expertise, candidates should possess knowledge of HVAC standards and guidelines. Ask questions with technical aptitude in mind to narrow your list of eligible candidates.

1. What was your most challenging project, and what did you learn from it?

Ask candidates for an example of a challenging project to determine their level of expertise and the processes used to uncover solutions.

If confronted with an exceptionally complicated HVAC problem, engineers need to know when to reach out to other **HVAC professionals** for a solution. The ability to understand complex processes and learn from challenges is vital and determines the success of a project.

2. What are the pros and cons of VAV and CAV systems?

HVAC engineers must understand the benefits and drawbacks of a **variable air volume** (VAV) system versus a **constant air volume** (CAV) system to make the right decision for a project. Engineers need to take all factors into consideration when designing a system to most efficiently heat and cool buildings and effectively manage indoor air quality.

3. What's the difference between sensible and latent heat loads?

In the HVAC world, accurate application of **energy principles** results in comfortable building environments. Sensible heat refers to air temperature, while latent heat refers to moisture in the air. **Calculations** that include measuring airflow in cubic feet per minute (CFM) enable HVAC engineers to determine the correct size of an HVAC system.

4. How do you calculate heating and cooling loads?

Sizing HVAC units by heating and cooling loads requires following the proper methods.

An HVAC load calculation shows the exact number of BTUs (British thermal unit) a certain size of space requires for sufficient heating and cooling. By **definition**, a BTU is the amount of heat required to raise the temperature of one pound of water by one-degree Fahrenheit.

5. What's your experience with sustainable HVAC solutions?

Modern customers want new, sustainable HVAC solutions that deliver benefits to the environment and their wallets. If your company provides services such as geothermal, solar power, or hydronics, ask about the candidate's knowledge of those systems, so you can continue to provide eco-friendly solutions to your customers.

Technology Interview Questions

1. How do you view mobile software in the HVAC industry?

Engineers and project managers profit by using HVAC job costing **software** to accurately track project costs, integrating financial data from sold estimates, job invoices, purchase orders, payroll, and accounts receivable. These tools allow your HVAC employees to perform better as a team and complete projects more efficiently.

2. What is your experience with using mobile technology on the job?

Mobile technology allows an HVAC engineer or manager to easily view schedules, materials and labor costs, and other critical job information from anywhere.

On the customer service side, team members can notify customers about the project in a timely manner. A seamless customer experience results in more return customers, and increased word-of-mouth referrals.

3. What tools do you use to explain a problem and solutions to a customer?

An HVAC project engineer or project manager may be the one to explain problems and solutions to customers, especially when it comes to big-ticket proposals. When employees confidently use HVAC software to present **good-better-and-best proposals**, it gives customers a clear picture of their options and benefits of each one. They may decide the "best" proposal saves them more money in the long run.

Behavioral Interview Questions

While many HVAC engineer interview questions focus on technical aptitude, HVAC companies should ask **behavioral interview questions** to determine how candidates approach work-related challenges.

Experienced hiring managers actively listen to a candidate's answer so they can follow up with additional, probing questions. It's important to focus on how a candidate answers, too—does a candidate directly answer the question, or do they provide a vague response? Do they choose to answer in a negative, blaming tone?

Even answers to seemingly off-hand questions can indicate the attitudes of your applicants, giving insight into how they view their work, approach problems, and interact with others.

1. How has your oversight prevented mistakes on projects?

Good HVAC engineers should know how to proactively minimize mistakes with oversight, communication, and a strong accountability process. Ask about what checks and balances they use to ensure projects follow proper technical specifications, and how they communicate with other team members. Determine how they detect mistakes, and what steps they take when mistakes do occur.

2. How do you prioritize and delegate projects?

When it comes to handling multiple, complex HVAC projects, the ability to prioritize and effectively manage time is a must. How does the candidate decide what aspects of a project to focus on first? How do they delegate tasks to subordinates? Knowing how to prioritize and reallocate work as needed is key to keeping projects on time and on budget.

3. How have you handled interactions with an unhappy customer?

If the HVAC engineering position requires customer interaction, asking about a difficult customer service experience shows the candidate's overall attitude about customers, as well as what steps they take to provide a positive customer experience. Whether it's explaining an HVAC system design problem or communicating a change in a project's timeline due to unforeseen supply issues, clear communication and the right attitude is of utmost importance.

4. Here's a specific HVAC design challenge. What steps would you take to resolve this?

Asking a question about an unknown HVAC design scenario gives HVAC engineering applicants the opportunity to demonstrate quick thinking and problem-solving skills. Their answers will indicate their critical thinking and breadth of knowledge.

Proper and efficient HVAC operations are essential. Knowing how to solve complex problems and effectively coordinating projects requires knowledge and excellent communication.