North Carolina Home Inspector Practice Exam (Sample)

Study Guide

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Questions

1. What is the correct method for flashing around a chimney on a tile roof?

A. Layered flashing

B. Overlapping flashing

C. Counter and Pan flashing

D. Single-piece flashing

2. If you find a notch in the bottom chord of an attic roof truss, what should you recommend?

A. Immediate repair on your own

B. Consult a structural engineer for evaluation

C. Leave it as it is

D. Document it, but make no recommendations

3. How many inches above the floor must all sources of flame in the garage be raised?

A. 12"

B. 15"

C. 18"

D. 24"

4. In batt insulation, where must the moisture barrier be facing?

A. Away from the heated side

B. The outside of the wall

C. The heated side of the room

D. The attic space

5. What is the most likely cause of ice forming on an A/C evaporator coil?

A. Low refrigerant levels

B. Not enough air

C. Defective thermostat

D. Faulty compressor

6. How long is an 8d common nail?

A. 1 inch

B. 2 inches

C. 2 1/2 inches

D. 3 inches

7. Which two basic elements must be inspected during a roof inspection?

A. Weather-resistant covering and insulation

B. Weather-resistant covering and sheathing

C. Underlayment and weather-resistant covering

D. Sheathing and insulation

8. What is a potential cause of horizontal cracking in basement walls besides soil pressure?

A. Water infiltration

B. Foundation design flaws

C. Back filling

D. Excessive loading

9. The fireplace flue size should be what fraction of the fireplace opening?

A. One-fifth

B. One-tenth

C. One-fourth

D. One-sixth

10. What is the primary concern regarding fireplaces?

A. The overall structure

B. The gap in the brick where it meets the firebox

C. The materials used in construction

D. The type of fuel used for burning

Answers

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

Explanations

1. What is the correct method for flashing around a chimney on a tile roof?

A. Layered flashing

B. Overlapping flashing

C. Counter and Pan flashing

D. Single-piece flashing

The correct method for flashing around a chimney on a tile roof is counter and pan flashing. This approach is effective in preventing water from entering the junction between the chimney and the roof. Counter flashing is installed into the masonry of the chimney, while pan flashing is positioned underneath the roof tiles and directs water away from the chimney, ensuring that it runs off the roof rather than pooling around the base of the chimney. This method is particularly important on tile roofs, which can have unique water flow characteristics due to their interlocking design. Using counter and pan flashing helps maintain the integrity of the roof and prevents leaks that could lead to damage both to the structure and to the chimney itself. Other methods, such as layered or single-piece flashing, may not provide the same level of protection or could result in water intrusion if not executed properly in conjunction with how tile roofs work.

2. If you find a notch in the bottom chord of an attic roof truss, what should you recommend?

A. Immediate repair on your own

B. Consult a structural engineer for evaluation

C. Leave it as it is

D. Document it, but make no recommendations

When you encounter a notch in the bottom chord of an attic roof truss, it is crucial to understand the potential implications of this finding on the structural integrity of the building. The bottom chord of a truss is vital for distributing loads and maintaining the stability of the roof structure. A notch can significantly weaken this component, leading to possible failures over time. Recommending a consultation with a structural engineer for evaluation is appropriate because these professionals are specifically trained to assess such structural issues. They can conduct a thorough analysis of the notch, considering factors like the extent of the notch, the specific design and load requirements of the truss, and any additional stresses that might be imposed on the structure. Their expertise will provide a clear understanding of whether the condition poses immediate risks that require repair or if it can be addressed through modifications or monitoring. This approach ensures that any necessary actions are taken based on a precise understanding of the situation, thereby safeguarding the property's structural integrity and the safety of its occupants.

3. How many inches above the floor must all sources of flame in the garage be raised?

A. 12"

B. 15"

C. 18"

D. 24"

The requirement for raising sources of flame above the floor in a garage is designed to minimize the risk of ignition from flammable vapors, which tend to settle near the ground. In this context, the correct height is 18 inches above the floor. This specification is consistent with safety standards that recognize the importance of keeping any potential ignition sources well above the level where flammable liquids or vapors may accumulate. This height ensures that items such as water heaters, furnaces, and other appliances that produce flame do not pose an increased risk of ignition in environments where combustible materials could be present. The safety standards for garages specifically address these conditions to protect property and prevent potential emergencies, reinforcing the necessity of compliance with this height regulation. Other options such as 12 inches, 15 inches, or 24 inches do not align with the established safety protocols that have determined the optimal height for minimizing fire risks in these spaces.

4. In batt insulation, where must the moisture barrier be facing?

A. Away from the heated side

B. The outside of the wall

C. The heated side of the room

D. The attic space

The correct placement of the moisture barrier in batt insulation is towards the heated side of the room. This orientation is crucial because the moisture barrier, often composed of materials such as polyethylene, serves to prevent moisture from seeping into the insulation from the interior of the home. By positioning it towards the heated space, it reduces the risk of condensation forming within the wall assembly, which can lead to mold growth, structural damage, and loss of insulation effectiveness. When warm, moist air from the inside of a home rises and cools as it permeates through walls, it may condense if it encounters cooler surfaces. By having the moisture barrier facing the heated side, it restricts this moisture movement, ensuring that the insulation remains dry and effective. Understanding this principle is key for home inspectors, as they must be able to identify proper insulation installation practices to mitigate potential issues related to moisture damage in walls.

5. What is the most likely cause of ice forming on an A/C evaporator coil?

A. Low refrigerant levels

B. Not enough air

C. Defective thermostat

D. Faulty compressor

The formation of ice on an A/C evaporator coil is most commonly caused by insufficient airflow over the coil. When air doesn't circulate properly, it prevents the coil from absorbing heat effectively. This lack of airflow can occur for various reasons, such as a dirty air filter, blocked ducts, or a malfunctioning blower fan. When warm air is unable to flow across the cold coil, the moisture in the air condenses and freezes on the coil, leading to icing. While low refrigerant levels and other system malfunctions can contribute to performance issues, they tend to lead to other symptoms and are less directly connected to the specific phenomenon of ice formation due to airflow problems. The thermostat and compressor also play important roles in the system's overall function but are not the primary causes of ice buildup on the evaporator coil. Understanding the significance of airflow helps in diagnosing and resolving issues related to air conditioning systems effectively.

6. How long is an 8d common nail?

A. 1 inch

B. 2 inches

C. 2 1/2 inches

D. 3 inches

An 8d common nail, commonly used in carpentry and construction, measures 2 1/2 inches in length. The "8d" designation comes from the penny system, where the "d" stands for "penny," a term that has its roots in historical trade practices. Traditionally, a nail's size in the penny system corresponds to its length: an 8d nail is specifically standardized to 2 1/2 inches. Understanding the sizes of nails and their corresponding lengths is crucial for home inspectors, as it allows them to assess the suitability of materials used in construction and renovation work. Knowledge of hardware specifications like this is essential for accurate inspections and recommendations.

7. Which two basic elements must be inspected during a roof inspection?

A. Weather-resistant covering and insulation

B. Weather-resistant covering and sheathing

C. Underlayment and weather-resistant covering

D. Sheathing and insulation

During a roof inspection, it's crucial to assess the weather-resistant covering and sheathing because these elements play essential roles in the overall integrity and functionality of the roofing system. The weather-resistant covering, often roofing shingles or other materials, protects the structure from water infiltration, which can lead to significant damage over time. This covering also deflects UV radiation and resists other weather-related threats. Sheathing, typically made of plywood or oriented strand board (OSB), is the structural foundation on which the roofing materials are installed. It provides support and rigidity to the roof and is critical for a secure installation of the weather-resistant covering. By inspecting both the weather-resistant covering and the sheathing, home inspectors can evaluate not only the immediate performance of the roof in preventing leaks and structural issues but also determine the long-term durability and potential need for repairs or replacements. Understanding these components allows inspectors to provide a thorough assessment of the roof's condition.

8. What is a potential cause of horizontal cracking in basement walls besides soil pressure?

A. Water infiltration

B. Foundation design flaws

C. Back filling

D. Excessive loading

Horizontal cracking in basement walls can indeed be influenced by a variety of factors beyond just soil pressure. While the question identifies backfilling as a potential cause, it is essential to understand how this process contributes to cracking. When backfilling occurs, the soil placed around the foundation after excavation adds weight and pressure on the walls. If the backfill is not compacted properly, it may lead to uneven pressure distribution against the wall. This uneven pressure can create stress points, resulting in horizontal cracking. Also, if the backfill material is particularly heavy or expands upon wetting, this can further exacerbate the pressure exerted against the concrete or masonry walls. While other options like water infiltration, foundation design flaws, and excessive loading can indeed contribute to structural issues, in the context of horizontal cracking specifically related to the way a foundation is treated post-excavation, backfilling stands out as a significant factor. Understanding these interactions can help in assessing potential issues in basement walls effectively.

9. The fireplace flue size should be what fraction of the fireplace opening?

A. One-fifth

B. One-tenth

C. One-fourth

D. One-sixth

The fireplace flue size should be one-tenth of the fireplace opening. This guideline is based on the principle that a properly sized flue is essential for efficient drafting of smoke and gases. A flue that is too small will restrict the flow of smoke, potentially leading to backdrafts and poor combustion, while a flue that is too large may not create enough updraft to effectively vent the smoke. The one-tenth ratio allows for optimal airflow, ensuring that the fire burns effectively and that smoke is properly expelled from the home. Proper flue sizing not only enhances the performance of the fireplace but also contributes to safety by minimizing the risk of harmful gases entering the living space. This information is critical for home inspectors to evaluate the performance and compliance of fireplaces in residential properties.

10. What is the primary concern regarding fireplaces?

A. The overall structure

B. The gap in the brick where it meets the firebox

C. The materials used in construction

D. The type of fuel used for burning

The primary concern regarding fireplaces, particularly when it comes to safety and functionality, centers on the gap in the brick where it meets the firebox. This area is critical because it is where the combustion process occurs and where hot gases are vented out of the fireplace. Any gaps or cracks can allow heat to escape or create the potential for fire hazards, as they may permit flames or hot embers to unintentionally reach combustible materials nearby. Inspectors must ensure that this junction is secure and intact to prevent dangerous situations, such as chimney fires or structural damage from heat exposure. While the overall structure of the fireplace, the materials used in construction, and the type of fuel used also hold importance, they are considerations that come into play after addressing the integrity of the gap between the brick and firebox. Structural issues, material quality, and fuel type could affect the performance and safety of the fireplace, but the immediate focus on the firebox gap is crucial for preventing direct hazards during operation.