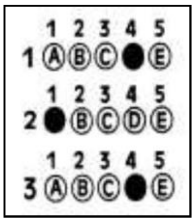
NORTH CAROLINA HOME INSPECTOR LICENSURE BOARD

STUDY GUIDE for the NC State Home Inspector Licensing Examination

General Information

The exams are closed book, and no reference materials are allowed in the examination room. Turn off and put away all cell phones and other communication devices. DO NOT MARK IN THE EXAM BOOKLET. Scratch paper will be provided. Only the answer "bubbles" filled in on the answer sheet will be graded by an Optical Mark Reader (OMR) scanner as shown in the diagram to the right. The Home Inspector exam contains 200 multiple-choice questions and has a four-hour time limit. The only time interval that will be announced is the last ten minutes. There is only one correct answer per question. **Choose the best answer**. Each correct answer is worth 1/2 point. The passing score is 70%.



Your exam will be scored after completion. If you pass, you will be shown a "P". If you do not pass this exam, you may come in and review your exam and the questions you answered incorrectly. Individuals requesting a review must notify Rich Hall by email rich.hall@ncdoi.gov to register. Location of exam reviews will be provided in the confirmation. If you do not pass this exam, you may register for additional exams as needed. However, you will have to pay the exam fee each time and NC General Statute § 143-151.57(b) requires 90 days (3 months) waiting period between exam attempts.

Preparing for the Home Inspector Examination

How does an applicant for licensure prepare for this test? What do I need to study?

The short answer is: ***" By getting the necessary education and training and becoming thoroughly familiar with the applicable laws and agency rules."*** The long answer is: The North Carolina Licensure Board exam is intended to test a minimum level of knowledge, defect recognition, understanding and client service across *all areas* needed to practice home inspection for compensation. There are training courses available through pre-licensing education sponsors and training centers some of which provide video courses for study at home or via websites on the internet. Additional courses are available through continuing education seminars offered by professional home inspection associations for their members. There are also some field training options with experienced inspectors.

Home inspectors may supplement their knowledge through community college courses on building code enforcement, construction trade licensing preparation (i.e. general contracting, carpentry, electrical, HVAC, plumbing, etc.). There are excellent books for tradespeople who want to study code requirements and building methods both *inside and outside* their area of expertise. While licensed contractors may have an advantage with certain parts of the home inspector exam in their specialty, a home inspector must have general knowledge in *all areas* of residential systems and components in order to provide a comprehensive written report to their client following the end of the physical inspection of the property.

While home inspectors in North Carolina are allowed by law to cite certain defects as violations of the Residential Building Code, strict requirements apply, and it is often difficult to do so since the construction date of the house and applicable codes at the time of construction must be reported. Therefore, such defects are commonly reported as conditions that "may affect the safety or habitability of the occupants." Candidates for licensure benefit by having a cursory knowledge of the codes, why the requirements are as they are, and how the codes have changed over time. The codes also provide useful definitions and terminology for common building systems and components.

North Carolina Home Inspector Licensure Board Standards of Practice (SOP)

The following is a list of topics for study to prepare for the license exam or considered for future exams. This is

not a complete list of all topics covered by the exam, nor a list of all skills or activities necessary to perform a competent inspection. For example, this list does not include specific minimum reporting requirements for each system or component that is essential for proper "**DDID"** – **D**escribe, **D**etermine, **I**mplication, **D**irection.

DDID includes:

Describe : Describe the component or system of concern specific to the property inspected. For example, the exterior covering components of a home such as brick veneer versus vinyl or wood siding. Describe the location.

Determine : What is wrong with it? What is the defect, malfunction, failure, or performance deficiency?

Implication : What can happen if the defect is not addressed? Can it get worse? Will it injure someone? Is it a safety concern?

Direction : What should be done?
Should it be repaired? Should it be further evaluated by a licensed professional to determine if action is needed at this time such as repair or replace? Should it be monitored over time?

1. **Structure**

A. Component Identification, Description and Terminology

- Identify different foundation, wall, floor and roof framing components.
- Identify different structure types (e.g., masonry vs frame wall)
- Identify wind load bracing components.
- Identify foundation waterproofing and drainage components.

B. Defect Recognition and Reporting

- Recognize importance of foundation and wall cracks.
- Recognize importance of defects of wood framing components (e.g., decay and deflection).
- Recognize conditions likely to result in decay and moisture deterioration.
- Recognize evidence of movement of the structure (differential settlement from uniform settlement).
- Recognize roof and floor truss defects.

C. Proper System Operation

- Understand difference between cosmetic and structurally significant cracks.
- Understand sequence of residential construction procedures.

D. Construction Methods and Materials

- Understand wood frame construction methods and materials of floors, walls, and roofs.
- Understand purpose of high wind and high water protection components.

2. **Roofing**

A. Component Identification and Terminology

- Identify roof types (e.g., hip, gable, gambrel, etc.)
- Identify roof covering and sheathing materials.
- Identify components of roof penetrations and flashings.
- Identify roof drainage system components.

B. Defect Recognition and Reporting

- Recognize the signs of deterioration of the different roof covering types and their impact on service life.
- Recognize roofing defects that can lead to damage of the structure.
- Recognize the common causes and locations of leakage.
- Recognize distinction between leakage and condensation.
- Recognize signs of improper roof covering installation.

C. Proper System Operation

- Understand roof drainage requirements.
- Understand the factors which affect the service life of roof covering materials.

D. Construction Methods and Materials

- Understand flashing installation for chimneys and walls.
- Understand basic installation requirements for each type of roof covering materials.
- Understand chimney size and height requirements.

3. <u>Exterior</u>

A. Component Identification and Terminology

- Identify different exterior surface materials, flashings and trim.

B. Defect Recognition and Reporting

- Recognize evidence of chimney movement
- Recognize distinction between normal wear and failure of the exterior surface materials.
- Recognize exterior trip and fall hazards (decks, railings, fences etc.)
- Recognize factors which contribute to basement leakage.
- Recognize the signs of water penetration.
- Recognize various window and door defects.
- Recognize distinction between normal soil behaviors from soil conditions which affect the structure.

C. Proper System Operation

- Understand how orientation and environmental factors affect exterior materials.

D. Construction Methods and Materials.

- Understand methods of attachment of exterior surface material to the structure.
- Understand importance of clearances of wood materials from soil level.
- Understand principles of drainage and grading.

4. <u>Electrical</u>

A. Component Identification and Terminology

- Identify components in the service and grounding systems.
- Identify distribution system components.
- Identify the service voltage and ampacity,
- Distinguish between wiring materials and their uses (copper, aluminum, etc.).
- Distinguish different wiring methods and cable types.

- Identify overcurrent protection devices and uses (fuses, circuit breakers).
- Identify ground fault protection types and uses.

B. Defect Recognition

- Recognize signs of electrical component overheating.
- Recognize improper branch circuit installation and modification.
- Recognize improper aluminum branch wiring.
- Recognize improper receptacle connections.
- Recognize improper conditions related to damp or wet locations.
- Recognize improper service grounding conditions.
- Recognize improper overhead service conductor clearances and insufficient protection.

- Proper System Operation Understand how GFCI's function.
- Understand how the neutral and grounding systems function
- Understand the operation of smoke and carbon monoxide detectors and alarms

C. Construction Methods and Materials

- Understand relationship of conductor sizes to overcurrent protection device sizes in different equipment applications (e.g., air conditioning compressors).
- Understand grounding and bonding.

5. <u>Plumbing</u>

A. Component Identification and Terminology

- Identify components of supply and drain systems within a building
- Distinguish different pipe materials used in supply and drainage pipe.
- Distinguish different types of traps and vents.
- Identify components and automatic safety devices of water heating systems.

B. Defect Recognition and Analysis

- Recognize conditions which may result in contamination of potable water supply.
- Recognize improper trap and vent installation.
- Recognize improper fixture trap connections.
- Recognize corrosion related to dissimilar metals (e.g., copper to galvanized steel).
- Recognize piping deterioration (e.g., rusted or broken piping).
- Recognize water heater safety defects

C. Proper System Operation

- Understand the role of vents in preserving trap seals.
- Understand how pipes are incorporated into the electrical grounding and bonding system.

D. Construction Methods and Materials

- Understand shower and tub design requirements for water resistance.
- Understand the operating principles of different types of water heaters.
- Understand proper gas and oil pipe installation.

6. <u>Heating</u>

A. Component Identification and Terminology

- Identify types of heating systems
- Identify the different energy sources.
- Identify combustion air, vent, and chimney systems.
- Identify heat distribution component systems.
- Identify ancillary components (e.g., humidifiers, filters).
- Identify operating controls and automatic safety devices.
- Identify types of heating systems

B. Defect Recognition and Reporting

- Recognize heat exchanger failure.
- Recognize improper venting.
- Recognize improper combustion air.
- Recognize improper burner/fan operation.

C. Proper System Operation

- Understand the normal temperature rise for hydronic and forced air systems.
- Understand the normal cycle operation for hydronic and forced air systems.

D. Construction Methods and Materials

- Understand operation of hydronic, steam, and forced air heating system components.
- Understand heat distribution systems design and methods.
- Identify cooling system types.
- Identify cooling system and heat pump components.

E. Defect Recognition and Reporting

Recognize abnormal operation from temperature differences. Distinguish cooling condensate leaks from other leaks and corrosion.
Recognize impediments to normal condenser operation and general cooling effectiveness.

F. Proper System Operation

Understand the normal outside operating temperature range and the impact on performance.

G. Construction Methods and Materials

Understand condensate discharge methods.
Understand the modifications required of a forced air heating system to accommodate central air conditioning.

8. <u>Insulation and Ventilation</u>

A. Component Identification and terminology

Identify common insulation types and vapor barriers.
Identify common means of natural and mechanical ventilation

B. Defect Recognition and Reporting

- Recognize signs of condensation.

- Recognize signs of inadequate ventilation.

C. Proper System Operation
- Understand basic attic and crawl space ventilation requirements.
- Understand application of venting and vapor barriers relative to climate.

D. Construction Methods and Materials
- Understand proper installation of vapor barriers.
- Understand the locations within a house where exterior ventilation is needed.
- Understand original insulation levels and retrofit methods.
- Know the current levels of insulation and ventilation required.

9. Interior

A. Component Identification and Terminology
- Identify basic operating window types
- Identify basics of safe stair construction

B. Defect Recognition and Reporting
- Recognize wall, ceiling, and floor surface defects which arise from underlying structural conditions.
- Recognize separations, gaps, proper door type and other issues related to the separation of the dwelling from an attached garage or from another dwelling.
- Recognize defects in normal operation of doors and windows.
- Recognize potential trip and fall hazards (e.g., railings, guards, steps and stairwells).

C. Proper System Operation
- Understand basic characteristics of common interior wall, ceiling and floor materials.

D. Construction Methods and Materials
- Understand basic installation methods for common floor, wall and ceiling finishes and basic reasons for surface cracks.

10. Fireplaces

A. Component Identification and Terminology
- Identify masonry and prefabricated fireplace and flue components.

B. Defect Recognition and Reporting
- Recognize improper clearances and other visible safety hazards.

C. Proper System Operation
- Understand proper operation of fireplaces.

D. Construction Methods and Materials
- Understand installation methods of fireplaces.

11. <u>Contracts, Report and Summary</u>

- Understand the requirements in the NC Administrative Code, Rule .1103 concerning agreements/contracts and home inspection report.
- Understand the requirements in the NC General Statutes § 143-151.58 regarding the written home inspection report, summary page, State Building Code, insurance requirements, and records retention.