

National Home Inspector Content Outline

Content Outline effective January 1, 2014

PERFORMANCE DOMAIN I: BUILDING SCIENCE (64%)

Task 1: Identify and inspect site conditions using applicable standards for material selection and installation procedures to assess immediate and long-term safety and maintenance issues that can affect the building or people. (4%).

a. Vegetation, Grading, Drainage, and Retaining Walls

- i. Common retaining wall types, materials, applications, installation methods, construction techniques, and clearance requirements
- ii. Common grading and drainage system types, materials, applications, installation methods, and construction techniques
- iii. Typical defects (e.g., negative grade, site drainage problems)
- iv. Typical vegetation and landscape conditions, maintenance practices, and how they affect the building
- v. Maintenance concerns and procedures
- vi. Safety issues, applicable standards, and appropriate terminology

b. Driveways, Patios, and Walkways

- i. Common types, materials, applications, installation methods, and construction techniques
- ii. Typical defects (e.g. root damage, trip hazards)
- iii. Maintenance concerns and procedures
- iv. Safety issues, applicable standards, and appropriate terminology

c. Decks, Balconies, Stoops, Stairs, Steps, Porches, & Applicable Railings

- i. Common types, materials, applications, installation methods, and construction techniques
- ii. Attachment methods (e.g., lag screws, bolts, web joists, tgi joists, cantilevered flooring)
- iii. Deck load to grade transfer theory (e.g., deck to joist to girder to post to grade)
- iv. Typical defects (e.g., flashing, railings, decayed wood, results of deferred maintenance)
- v. Maintenance/design concerns and procedures
- vi. Safety issues, applicable standards, and appropriate terminology

Task 2: Identify and inspect building exterior components using applicable standards for material selection and installation procedures to assess immediate and long-term safety and maintenance issues that can affect people or the performance of the building. (6%)

a. Wall Cladding, Flashing, Trim, Eaves, Soffits, and Fascia

- i. Common types (e.g., stucco, composite siding, aluminium and vinyl cladding, SIPs, EIFS, step flashing)
- ii. Typical defects (e.g., cracking, improper installation, water infiltration, decay)
- iii. Maintenance concerns and procedures
- iv. Safety issues, applicable standards, and appropriate terminology

b. Exterior Doors and Windows

- i. Common door and window types, materials, applications, installation methods, and construction techniques
- ii. Typical defects (e.g., delaminating, decayed wood, thermal seal failure, flashings, cracked glass)
- iii. Maintenance concerns and procedures
- iv. Safety issues, applicable standards, appropriate terminology, and glazing requirements (e.g., egress requirements, safety glazing, release for security bars)

c. Roof Coverings

- i. Common roof-covering types, materials, applications, installation methods, construction techniques, and manufacturing requirements
- ii. Typical roof covering repair methods and materials
- iii. Typical defects (e.g., improper installation, cracking, curling, deterioration, damage)
- iv. Characteristics of different roofing materials
- v. Sheathing and underlayment requirements for different types of roof coverings
- vi. Maintenance concerns and procedures
- vii. Safety issues, applicable standards, and appropriate terminology

d. Roof Drainage Systems

- i. Common drainage system types, materials, applications, installation methods, and construction techniques (e.g., slope, gutters, roof drains, scuppers)
- ii. Typical modifications, repairs, upgrades, and retrofits methods and materials
- iii. Typical defects (e.g., ponding, improper slopes, clogging/leaking, disposal of roof water runoff)
- iv. Maintenance concerns and procedures

- v. Safety issues, applicable standards, & appropriate terminology

e. Flashings

- i. Common types, materials, applications, installation methods, and construction techniques
- ii. Typical defects (e.g., separation, corrosion, improper installation, missing flashing)
- iii. Maintenance concerns and procedures
- iv. Safety issues, applicable standards, & appropriate terminology

f. Skylights and Other Roof Penetrations

- i. Common skylight and other roof penetration types, materials, applications, installation methods, & construction techniques
- ii. Typical defects (e.g., cracked glazing, improper installation, deterioration, failure, faulty flashing)
- iii. Maintenance concerns and procedures safety issues, applicable standards, and appropriate terminology

Task 3: Identify and inspect structural system elements using applicable standards for material selection and installation procedures to assess immediate and long-term safety and maintenance issues that may affect people or the structural stability of the building. (7%)

a. Foundation

- i. Common foundation types, materials, applications, installation methods, and construction techniques
- ii. Typical foundation system modifications, repairs, upgrades, and retrofits methods and materials
- iii. Typical defects (e.g., cracks, settlement, decomposition, failed damp-proofing) and their common causes and effects.
- iv. Soil types & conditions and how they affect foundation types
- v. Applied forces and how they affect foundation systems (e.g., wind, seismic, loads)
- vi. Safety issues, applicable standards, & appropriate terminology
- vii. Water management (e.g., grading, foundation drains, sumps)

b. Floor Structure

- i. Common floor system types (e.g., trusses, concrete slabs), materials, applications, installation methods, and construction techniques
- ii. Typical modifications, repairs, upgrades, and retrofits methods and materials
- iii. Typical defects (e.g., improper cuts and notches in structural members, decayed or damaged structural members, effects of long-term loading and/or bearing & environmental exposure)
- iv. Limitations of framing materials (e.g., span)

- v. Applied forces and how they affect floor systems (e.g., wind, seismic, loads)
- vi. Safety issues, applicable standards, & appropriate terminology

c. Walls and Vertical Support Structures

- i. Common types, materials, applications, installation methods, and construction techniques
- ii. Typical modifications, repairs, upgrades, and retrofits methods and materials
- iii. Typical defects (e.g., decayed or damaged structural members, earth to wood contact, structural deformation)
- iv. Seismic and wind-resistant construction methods and hardware
- v. Fire blocking and fire walls
- vi. Safety issues, applicable standards, & appropriate terminology

d. Roof and Ceiling Structures

- i. Common roof and ceiling structure types, materials, applications, installation methods, and construction techniques
- ii. Typical roof structure modifications, repairs, upgrades, and retrofits methods and materials
- iii. Acceptable truss and ceiling structural-member modifications, repairs, upgrades, and retrofits methods and materials
- iv. Roof and ceiling structure conditions and defects (e.g., moisture stains, fungal/mold growth, sagging rafters, modified/damaged trusses, decayed or damaged structural members)
- v. Limitations of framing materials (e.g., span)
- vi. Applied forces and how they affect roof/ceiling structures (e.g., wind, seismic, loads)
- vii. Safety issues, applicable standards, and appropriate terminology
- viii. Seismic and wind-resistant construction and hardware
- ix. Maintenance concerns and procedures

Task 4: Identify and inspect electrical system elements using applicable standards for material selection and installation procedures to assess immediate and long-term safety and maintenance issues or affect people. (7%)

a. Electrical Service: Service Entrance, Service Lateral, Service Conductors, Service Equipment, and Service Grounding

- i. Common types, materials, applications, installation methods, and construction techniques
- ii. Typical modifications, repairs, upgrades, and retrofits methods and materials
- iii. Typical defects (e.g., water and rust in panel equipment, height, deteriorated conductor sheathing)
- iv. Electrical service capacity
- v. Service grounding and bonding

- vi. Maintenance concerns and procedures
- vii. Safety issues, applicable standards, and appropriate terminology

b. Interior Components of Service Panels and Subpanels

- i. Common types, materials, applications, installation methods, and construction techniques
- ii. Typical modifications, repairs, upgrades, and retrofits methods and materials
- iii. Typical defects (e.g., un-bonded sub panels, double-tapping, over-fusing)
- iv. Main disconnects
- v. Panel grounding and sub-panel neutral isolation
- vi. Panel wiring
- vii. Over-current protection devices
- viii. Function of circuit breakers and fuses
- ix. Maintenance concerns and procedures
- x. Inspection safety procedures
- xi. Safety issues, applicable standards, & appropriate terminology

c. Wiring Systems

- i. Common types, materials, applications, & installation methods
- ii. Typical modifications, repairs, upgrades, and retrofits methods and materials
- iii. Typical defects (e.g., open splices, exposed non-metallic cable)
- iv. Problems with aluminum wire
- v. Obsolete electrical wiring system (e.g., knob & tube wiring)
- vi. Maintenance concerns and procedures
- vii. Safety issues, applicable standards, and appropriate terminology

d. Devices, Equipment, & Fixtures (e.g., switches, receptacles, lights)

- i. Common types, materials, applications, installation methods, and construction techniques
- ii. Typical modifications, repairs, upgrades, and retrofits methods and materials
- iii. Typical defects (e.g., reverse polarity, open grounds, faulty GFCIs)
- iv. Equipment grounding
- v. Wiring, operation, location of typical devices and equipment (e.g., receptacles and lights, appliances, GFCI protection, arc fault protection)
- vi. Maintenance concerns and procedures
- vii. Safety issues, applicable standards, and appropriate terminology

Task 5: Identify and inspect cooling systems using applicable standards for material selection and installation procedures to assess immediate and long-term safety and maintenance issues that may affect people or the performance of the building. (5%)

a. Cooling

- i. Common types, materials, applications, installation methods, and construction techniques
- ii. Typical defects (e.g., vacuum line insulation missing, condensation and/or rust on components, not cooling properly, un-level condenser, frost/ice formation on components, restriction of air flow at the condensing unit, location of condensing unit)
- iii. Theory of refrigerant cycle (latent and sensible heat)
- iv. Theory of heat transfer
- v. Theory of equipment sizing
- vi. Methods of testing the systems
- vii. Condensate control and disposal
- viii. Maintenance concerns and procedures
- ix. Safety issues, applicable standards, & appropriate terminology

b. Distribution Systems

- i. Common distribution system types, materials, applications, installation methods, and construction techniques
- ii. Typical defects (damaged ducts, incorrect configuration/installation, insufficient air flow, condensation at supply registers, blower operation, and improper air temperature at register)
- iii. Methods of testing the system
- iv. Maintenance concerns and procedures (e.g., filter, condensation pump and lines)
- v. Safety issues, applicable standards, & appropriate terminology

Task 6: Identify and inspect heating systems using applicable standards for material selection and installation procedures to assess immediate and long-term safety and maintenance issues that may affect people or the performance of the building. (6%)

a. Heating

- i. Common types, materials, applications, installation, methods, and construction techniques
- ii. Typical defects (e.g., cracked heat exchanger, humidifier, dirty fan, improper fuel line installation/material)
- iii. Theory of heat transfer and how it takes place in different heating system types
- iv. Heating system types (e.g., forced draft, gravity, boiler, hydronic, heat pump, solid fuel)
- v. Theory of equipment sizing
- vi. Methods of testing the systems
- vii. Performance parameters
- viii. Condensate control and disposal

- ix. By-products of combustion (e.g., H₂O, CO₂, CO, NO₂), their generation, & how & when they become a safety hazard
- x. Maintenance concerns and procedures
- xi. Safety issues, applicable standards, and appropriate terminology

b. Distribution Systems

- i. Common distribution system types, materials, applications, installation methods, and construction techniques
- ii. Typical defects (e.g., damaged ducts, incorrect configuration/installation, insufficient airflow, blower operation, and improper air temperature at register)
- iii. Methods of testing the system
- iv. Maintenance concerns and procedures (e.g., filter, humidifier)
- v. Safety issues, applicable standards, & appropriate terminology

c. Flue and Venting Systems

- i. Common venting system types, materials, applications, installation methods, and construction techniques
- ii. Typical defects (e.g., separated flue, back drafting, clearance to combustible materials, proper slope, combustion make-up air vent sizing and configuration)
- iii. Theory of venting and exhaust flues
- iv. Equipment sizing
- v. Safety issues, applicable standards, & appropriate terminology

Task 7: Identify and inspect insulation, moisture management systems, and attic/interior/crawl space ventilation systems in conditioned and unconditioned spaces using applicable standards for material selection and installation procedures to assess immediate condition and long-term safety and maintenance issues that may affect people or the performance of the building. (6%)

a. Thermal Insulation

- i. Common thermal insulation types, materials, applications, installation methods, and construction techniques
- ii. Typical defects (e.g., lack of insulation, uneven insulation, damaged insulation, flame spread concerns, improper clearances and alignment)
- iii. Theory of heat transfer and energy conservation
- iv. Performance parameters (e.g., R-value)
- v. Maintenance concerns and procedures
- vi. Safety issues, applicable standards, & appropriate terminology

b. Moisture Management

- i. Common vapor retarder types, materials, applications, installation methods, and construction techniques
- ii. Typical defects (e.g., inadequate ventilation, evidence of condensation)

- iii. Theory of moisture generation and movement
- iv. Performance parameters
- v. Vapor pressure and its effects
- vi. Theory of relative humidity
- vii. Effects of moisture on building components, occupants, and indoor air quality
- viii. Moisture control systems
- ix. Appearance or indications of excessive moisture and likely locations for condensation to occur
- x. Maintenance concerns and procedures
- xi. Safety issues, applicable standards, & appropriate terminology

c. Ventilation Systems of Attics, Crawl Spaces, and Roof Assemblies

- i. Common types, materials, applications, installation methods and construction techniques
- ii. Typical ventilation defects and how they affect buildings and people
- iii. Theory of air movement in building assemblies (e.g., conditioned vs. unconditioned, draft stopping)
- iv. Theory of relative humidity
- v. Interdependence of mechanical systems and ventilation systems
- vi. Appliance vent systems requirements (e.g., clothes dryers, range hoods, bathroom exhausts)
- vii. Screening, sizing, and location requirements for vent openings
- viii. Maintenance concerns and procedures
- ix. Safety issues, applicable standards, & appropriate terminology

Task 8: Identify and inspect plumbing systems using applicable standards for material selection and installation procedures to assess immediate and long-term safety and maintenance issues that may affect people or the performance of the building. (6%)

a. Water Supply Distribution System

- i. Common water distribution types, materials, applications, installation methods, and construction techniques
- ii. Typical modifications, repairs, upgrades, and retrofits methods and materials
- iii. Typical defects (e.g., cross-connection, back flow)
- iv. Common water pressure/functional flow problems and how they affect the water distribution system (e.g., softeners, private well equipment, hard water build-up, old galvanized piping, pressure reducer valves, expansion tanks)
- v. Pipe defect/deterioration issues (e.g., PVC, galvanized, brass, polybutylene, PEX)
- vi. Maintenance concerns and procedures
- vii. Safety issues, applicable standards, and appropriate terminology (e.g., understanding of term “functional flow”)

b. Fixtures and Faucets

- i. Common fixture and faucet types, materials, applications, installation methods, and construction techniques
- ii. Typical modifications, repairs, upgrades, and retrofits methods and materials
- iii. Typical defects (e.g., cross-connection/back-flow, fixture attachment)
- iv. Maintenance concerns and procedures
- v. Safety issues, applicable standards, & appropriate terminology

c. Drain, Waste, and Vent Systems

- i. Common types, materials, applications, installation methods, and construction techniques (e.g., supports/spacing)
- ii. Typical modifications, repairs, upgrades, & retrofits methods and materials (e.g., joining dissimilar piping materials)
- iii. Theory and usage of traps and vents
- iv. Identification of public or private disposal (when possible)
- v. Typical defects (e.g., faulty installation, deterioration, leakage, defective venting or drain slope)
- vi. Maintenance concerns and procedures
- vii. Safety issues, applicable standards, and appropriate terminology (e.g., understanding of term “functional drainage”)

d. Water Heating Systems

- i. Common types, materials, applications, installation methods, and construction techniques (e.g., conventional, instant, tank less, indirectly heated, atmospheric/gravity/induced draft)
- ii. Typical water heater defects (e.g., improper vent/flue materials and configuration, condition, unsafe locations, connections, compatible to fuel type, temperature and pressure relief system problems)
- iii. Accessory items (e.g., drain pans, seismic restraints, expansion tanks, recirculation systems)
- iv. Connections to and controls for energy source
- v. Combustion, make-up, and dilution air requirements
- vi. Maintenance concerns and procedures
- vii. Safety issues, applicable standards, and appropriate terminology

e. Fuel Storage and Fuel Distribution Systems

- i. Common types, materials, applications, installation methods, and construction techniques
- ii. Typical defects (e.g., piping supports/spacing, shut-off requirements, unprotected fuel lines, leaking fuel fittings)
- iii. Defects in above-ground oil/gas storage tanks
- iv. Fuel leak indications, repairs, and remediation methods
- v. Basic components of gas appliance valves & their functions
- vi. Tank restraints and supports
- vii. Underground storage tank indicators and reporting requirements
- viii. Maintenance concerns and procedures

f. Safety issues, applicable standards, appropriate terminology, drainage sumps, sump pumps, sewage ejection pumps, related valves and piping

- i. Common types, materials, applications, installation methods, and construction techniques
- ii. Typical defects (e.g., inoperative sump pumps, improperly installed/designed equipment and systems, alarms, lid seals)
- iii. Sump pump location significance
- iv. Pump discharge location significance
- v. Maintenance concerns and procedures
- vi. Safety issues, applicable standards, & appropriate terminology

Task 9: Identify and inspect interior components using applicable standards for material selection, installation procedures, and maintenance to assess immediate and long-term safety issues as they may affect people or the performance of the building. (5%)

a. Walls, Ceiling, Floors, Doors, and Windows, and other Interior System Components

- i. Types of defects in interior surfaces not caused by defects in other systems (e.g., attachment defects, damage)
- ii. Typical defects in interior surfaces caused by defects in other systems (e.g., structural movement, moisture stains)
- iii. Common wall, ceiling, floor, door, and window type, materials, applications, installation methods and construction techniques
- iv. Egress requirements (e.g., window security bar release, basement windows, opening size, sill height, and ladders)
- v. Applicable fire/safety and occupancy separation requirements (e.g., fire barriers, fire walls, fire rated doors, & penetrations)
- vi. Operation of windows or doors
- vii. Fire and life safety equipment (e.g., smoke/CO detectors inoperative or missing)
- viii. Maintenance concerns and procedures
- ix. Safety issues, applicable standards, and appropriate terminology of common wall, ceiling, floor, door, and window types, materials, applications, installation methods, and construction techniques

b. Steps, Stairways, Landings, and Railings

- i. Common step, stairway, landing, and railing types, materials, applications, installation methods, & construction techniques
- ii. Maintenance concerns and procedures
- iii. Typical defects (e.g., loose/damage elements, improper rise/run, inadequate/omitted handrails)
- iv. Safety issues, applicable standards, & appropriate terminology

c. Garage Vehicle Doors and Operators

- i. Common garage vehicle doors and door operator types, materials, applications, installation methods, and construction techniques

- ii. Typical defects (e.g., damaged components, safety considerations, spring retention, opener adjustment)
- iii. Maintenance concerns and procedures
- iv. Safety issues, applicable standards, & appropriate terminology

Task 10: Identify and inspect fireplace and chimney systems using applicable standards for material selection and installation procedures to assess immediate and long-term safety and maintenance issues that may affect people or the performance of the building. (6%)

a. Fireplaces, Solid-Fuel Burning Appliances, Chimneys, & Vents

- i. Common manufactured fireplaces (e.g., vented, direct vent, non-vented) & solid-fuel burning appliance types, materials, applications, installation methods, & construction techniques
- ii. Common manufactured fireplaces and solid-fuel burning appliance chimney, vent connector, and vent types, materials, applications, installation methods and construction techniques of direct-vent and non-vented fireplaces
- iii. Common masonry fireplace types, masonry flues, materials, applications, installation methods, & construction techniques
- iv. Chimney terminations (e.g., spark arrestors, chimney cap)
- v. Chimney foundation, height and clearance requirements
- vi. Theory of heat transfer
- vii. Effects of moisture and excessive heat on fireplaces
- viii. Fuel types and combustion characteristics, air supply, and combustion air requirements
- ix. Typical defects (e.g., hearth defects, clearance requirements, firebox damage, damper problems, smoke chamber and flue issues, shared flue considerations)
- x. Operation of equipment, components, and accessories
- xi. Maintenance concerns and procedures
- xii. Safety issues, fire safety fundamentals, applicable standards, and appropriate terminology

Task 11: Identify and inspect common permanently installed kitchen appliances for proper condition and operation. (3%)

a. Installation

b. Operating using normal controls

c. Typical defects (e.g., appliance not anchored/leveled, rusting racks, leaking unit, missing air gap)

d. Maintenance concerns and procedures

e. Safety issues, applicable standards, manufacturer's specifications, and appropriate terminology

Task 12: Identify and inspect pool and spa systems using applicable standards for material selection and installation procedures to assess immediate and long-term safety and maintenance issues. (2%)

a. Types of construction

- i. Perimeter coping and water level finish
- ii. Shell interior finish (e.g., plaster, vinyl, pebble/synthetic)
- iii. Entrapment prevention (e.g., dual drains, anti-vortex lid)
- iv. Permanently installed handrails and ladders

b. Mechanical systems

- i. Pump, motors, blowers, skimmer, filter, drains, gauges
- ii. Piping and valves
- iii. Cleaning systems (e.g., in-floor heads, pool sweeps)
- iv. Heating (e.g., gas, electric, solar)

c. Electrical systems

- i. Lighting and GFCI protection
- ii. Timers and controls
- iii. External bonding (e.g., pump motors, blowers, heater shell)

d. Typical defects (e.g., inoperative equipment, piping leaks, damage/deterioration of components)

e. Maintenance concerns and procedures

f. Safety issues (e.g., child-safe barriers or components), applicable standards, and appropriate terminology

Task 13: Identify and inspect lawn irrigation systems using applicable standards for material selection and installation procedures and to assess immediate and long-term safety and maintenance issues that may affect the performance of the system and building. (1%)

a. Common material types, applications, installation methods, and construction techniques

- i. Typical modifications, repairs, upgrades, and retrofits methods and materials
- ii. Timers and controls (e.g., timing device, manual valves)
- iii. Typical defects (e.g., leaks, poor adjustment, inoperative components, cross-connection/back flow, proximity and possible effects on building)
- iv. Common water pressure/flow problems and how they affect the water distribution system
- v. Visible and accessible pipe deterioration issues (e.g., PVC, galvanized, brass)
- vi. Maintenance concerns and procedures
- vii. Safety issues, applicable standards, and appropriate terminology

PERFORMANCE DOMAIN II: ANALYSIS AND REPORTING (24%)

Task 1: In the inspection report, identify building systems and components by their distinguishing characteristics (e.g., purpose, type, size, location) to inform the client what was inspected. (6%)

- a. **Minimum information required in an inspection report (e.g., property data, construction materials, installation techniques and procedures, locations of main system shutoffs)**
- b. **Describing the type of systems & the location of system components**
- c. **Correct technical terms to describe systems and components of the building**

Task 2: Describe inspection methods and limitations in the inspection report to inform the client what was inspected and what was not inspected and the reason why it was not inspected. (6%)

- a. **Minimum and critical information required in an inspection report (e.g., weather conditions, inspection safety limitations, components not accessible)**
- b. **Common methods used to inspect particular components (e.g., roofs, attics, sub-floor crawl spaces, mechanical components)**

Task 3: Describe systems and components inspected that are not functioning properly or are defective. (7%)

- a. **Common expected service life of building & mechanical components**
- b. **Common indicators of potential failure (e.g., rust & corrosion, unusual noise, excessive vibration, and/or lack of routine maintenance)**
- c. **Common safety hazards**
- d. **Common test instruments and their proper use for qualitative analysis (e.g., moisture meters, CO meters, probes)**

Task 4: List recommendations to correct deficiencies or items needing further evaluation. (5%)

- a. **Correct professional or tradesperson required to effect repairs or perform further evaluations**
- b. **Common remedies for correction**
- c. **Relationships between components in the building**
- d. **When to immediately inform building occupants of a life-threatening safety hazard (e.g., gas leak, carbon monoxide accumulation)**

PERFORMANCE DOMAIN III: BUSINESS OPERATIONS (12%)

Task 1: Identify the elements of the written inspection contract (e.g., scope, limitations, terms of services) to establish the rights and responsibilities of the inspector and client. (6%)

- a. **Purpose of a contract**
- b. **Elements of a contract (e.g., names of parties, scope of inspection, terms of service, exclusions and limitations, address, date and times of inspection, limits of liability, dispute resolution, and understanding State specific elements)**
- c. **Timing of delivery and signing contract**

Task 2: Identify responsibilities to the client in order to maintain the quality, integrity, reputation, and objectivity of the inspection process while protecting the client's interests. (6%)

- a. **Fundamental legal concepts (e.g., fiduciary responsibility, contractual responsibility, liability, negligence, due diligence, consumer fraud, knowledge of licensing requirements)**
- b. **Identify conflicts of interest to the client (e.g., inspector interest in the property, third-party stakeholders with financial interest in the outcome of the inspection)**
- c. **Boundaries of personal expertise and professional scope of practice (e.g., don't exceed your area of expertise)**
- d. **Understand the types and purpose of financial protection (e.g., general liability, professional E&O, bonding, and warranties)**