



COURSE 962907

Weatherization Guide Chapter 2

Exam Material

Uscontractorlicense LLC

PO Box 268 / Platteville, Wisconsin 53818 / 608.348.6688 / www.uscontractorlicense.com

Summary Of This Course

WEATHERIZATION GUIDE CHAPTER 2

Approved by the
Wisconsin Department of Safety and Professional Services Safety and Buildings Division
Course Identification Number 962907
Educational Credit Hours: 6 Hours

Course Provider:
USCONTRACTORLICENSE LLC
P.O. Box 268
Platteville, WI 53818-0268
(608) 348-6688

www.uscontractorlicense.com

This Course is approved for the following electrical Registrations/Certifications or Licenses:

Dwelling Contractor Qualifier	6 Hours of Continuing Education	
Commercial Building Inspector	6 Hours of Continuing Education	

This course is a distance learning or e-learning course, which allows the attendee to complete the course on their time schedule.

Course Outline

This course is a distance learning or e-learning course, which allows the attendee to complete the course on their time schedule.

Chapter 2 - Heating Envelope Building Measures

2.1 Heating Envelope Insulation

2.2 Attic and Roof Insulation

2.2.1 Pre-insulation Attic and Roof Insulation Prep

2.2.2 Attic Ventilation

2.2.3 Attic Accesses, Walk-up Stairways, and Doors Attic Accesses

2.2.4 Calculating Attic Loose-Fill Insulation

2.2.5 Installing Blown-in Attic Insulation

2.2.6 Installing Attic Batt Insulation

2.2.7 Installing Attic Insulation in 1 1/2 Story Homes (Finished Attics)

2.2.8 Insulating Attics with Limited Accessibility

2.2.9 Insulating Closed Roof Cavities

2.3 Wall Insulation

2.3.1 Calculating Wall Coverage and Density

2.3.2 Inspecting and Repairing Walls Before Installing Insulation

2.3.3 Removing Siding and Drilling Sheathing

2.3.4 Dense-Packed Wall Insulation from the Exterior

2.3.5 Dense-Packed Wall Insulation from the Interior

2.3.6 Dense-Packing from Other Access Locations

2.3.7 Interior Open-Cavity Wall Insulation

2.4 Crawl Space Requirements

2.4.1 Crawl Space Access Requirements

2.4.2 Crawl Space Signage

2.5 Floor and Foundation Insulation

2.5.1 Establishing a Thermal Boundary

2.5.2 Rim Joist and Box Sill Insulation

2.5.3 Floor Insulation

2.5.4 Foundation Insulation

Final Inspection and Quality Assurance Standards

Exam

180 questions related to the reference materials are used to test the attendee on their comprehension of the materials. A 70% score will need to be attained in order to pass this course.

Answer Sheet(s)

2 bubble style answer sheets are included. When you are finished with the exam, you may return the answer sheets for grading to:

By Mail: Uscontractorlicense LLC
PO Box 268
Platteville, Wisconsin 53818

By Email: michael@uscontractorlicense.com
By Fax: 608-571-0096

Once we get the answer sheets back, we will grade them, enter your hours into the attendance portal and email or mail you back your certificate of completion(s). You will be responsible for renewing your license with the DSPS at www.license.wi.gov website.

Any questions, please contact us at 608.348.6688

Uscontractorlicense LLC

PO Box 268 / Platteville, Wisconsin 53818 / 608.348.6688 / www.uscontractorlicense.com

Weatherization Guide Chapter 2

Questions 1 thru 10 can be found in Section 2.1 - Heating Envelope Insulation

1. The heating envelope of a building consists primarily of:

- A. Interior partition walls only
- B. Surfaces forming the thermal boundary between conditioned and unconditioned spaces
- C. Plumbing and HVAC systems
- D. Only exterior siding

2. Insulation reduces heat transfer primarily by slowing:

- A. Evaporation only
- B. Conduction, convection, and radiation
- C. Air pressure only
- D. Solar gain

3. The pressure boundary is formed by:

- A. Structural framing
- B. Roofing materials
- C. Airtight materials that prevent air movement
- D. Vapor barriers only

4. Before work begins on the thermal boundary, crews should normally address:

- A. Landscaping
- B. Pressure boundary deficiencies
- C. Window replacement
- D. Interior finishes

5. Which insulation method may simultaneously address both the thermal and pressure boundaries?

- A. Fiberglass batts only
- B. Dense-pack insulation
- C. Loose-fill fiberglass only
- D. Reflective foil

6. An insulation certificate should be installed:

- A. In the basement only
- B. Near an attic hatch, electrical panel, or another visible location
- C. Behind drywall
- D. Under floor insulation

7. Which item is NOT required on the insulation certificate?

- A. Insulation type
- B. Coverage area
- C. Installer's driver's license number
- D. Installed thickness

8. Spray polyurethane foam (SPF) insulation certificates must also include:

- A. Homeowner's insurance information
- B. Foam density and flame/smoke ratings
- C. Roof pitch
- D. Furnace efficiency

9. Standard insulation products generally require a maximum flame spread/smoke development index of:

- A. 75/450
- B. 50/250
- C. 25/450
- D. 100/450

10. SPF used specifically for duct sealing must have a flame spread/smoke index of:

- A. 25/450 or less
- B. 75/450 or less
- C. 100/500
- D. 150/450

Questions 11 thru 25 can be found in Section 2.2.1 - Pre-insulation Attic and Roof Insulation Prep

11. Before attic insulation is installed, exhaust appliances must:

- A. Be disconnected
- B. Vent into the attic
- C. Vent directly outdoors through dedicated terminations
- D. Vent into crawl spaces

12. Exhaust ducts located in attics should be insulated to at least:

- A. R-4
- B. R-6
- C. R-8
- D. R-10

13. Active masonry chimneys require insulation clearance of at least:

- A. 1 inch
- B. 2 inches
- C. 3 inches
- D. 6 inches

14. Roof leaks should be repaired:

- A. After insulation installation
- B. Before insulating the attic
- C. Only if severe
- D. During final inspection

15. Electrical wire splices that will be covered by insulation must be:

- A. Painted red
- B. Covered with duct tape
- C. Enclosed in junction boxes and marked
- D. Removed

16. Existing live knob-and-tube wiring requires insulation to remain:

- A. In direct contact
- B. One inch away
- C. Three inches away
- D. Six inches away

17. Existing vapor retarders located on the cold side of insulation should be:

- A. Painted
- B. Removed or perforated
- C. Doubled
- D. Left untouched

18. If a recessed light fixture is not insulation-contact rated, insulation should remain:

- A. In contact
- B. One inch away
- C. Three inches away and not cover the fixture
- D. Six inches away

19. Forced-air ducts located in attics should generally be:

- A. Removed
- B. Left uninsulated
- C. Sealed and insulated appropriately
- D. Painted white

20. Depth markers for attic insulation should be installed approximately every:

- A. 100 square feet
- B. 200 square feet
- C. 300 square feet
- D. 500 square feet

21. Whole-house cooling fans should generally be protected by:

- A. Plastic sheeting only
- B. Constructing an insulated box around the fan
- C. Removing the fan
- D. Spraying foam directly onto the motor

22. Eave chutes are primarily installed to:

- A. Increase roof weight
- B. Prevent insulation from blocking ventilation airflow
- C. Drain roof water
- D. Support drywall

23. Eave chutes should extend at least:

- A. Flush with insulation
- B. 2 inches above insulation
- C. 6 inches above final insulation level
- D. 12 inches above insulation

24. Proper clearance between insulation and the roof deck at eave chutes is at least:

- A. ½ inch
- B. 1 inch
- C. 2 inches
- D. 3 inches

25. If workers enter an already insulated attic to perform air sealing or ventilation work:

- A. No preparation is required
- B. Only ventilation work is required
- C. All attic preparation requirements must be completed
- D. Only insulation dams are required

Questions 26 thru 29 can be found in Section 2.2.2 - Attic Ventilation

26. When installing attic ventilation, net free vent area should ideally be:

- A. Concentrated entirely at the ridge
- B. Concentrated entirely at the soffits
- C. Split equally between high and low ventilation
- D. Installed only in gable vents

27. Gable vents should be installed:

- A. Near the floor
- B. Midway on the wall
- C. As high in the gable as possible
- D. Under windows

28. Roof vents should generally be installed:

- A. Directly on the ridge cap
- B. Centered between rafters
- C. Beside plumbing vents only
- D. Under soffits

29. Soffit vents require what additional component to prevent airflow blockage?

- A. Flashing
- B. Chutes or baffles
- C. Ridge caps
- D. Vapor barriers

Questions 30 thru 41 can be found in Section 2.2.3 - Attic Accesses, Walk-up Stairways, and Doors Attic Accesses

30. Accessible attic hatches should be insulated to:

- A. R-13 only
- B. Half the attic insulation value
- C. The R-value of adjacent attic insulation or the maximum structurally allowable value
- D. No insulation is required

31. An attic access hatch should be permanently attached with insulation that is:

- A. Loose and removable
- B. In complete contact with the air barrier
- C. Covered with polyethylene only
- D. Installed only on the edges

32. An attic access hatch must also be:

- A. Painted white
- B. Weather-stripped and air sealed
- C. Left slightly open for ventilation
- D. Covered with plywood only

33. Durable boxing material around attic accesses is primarily installed to:

- A. Support drywall
- B. Prevent loose-fill insulation from entering the living space while maintaining insulation depth
- C. Increase attic ventilation
- D. Reduce roof loads

34. Access openings to attics containing asbestos or vermiculite should include:

- A. Smoke alarms
- B. Warning signs
- C. Fire extinguishers
- D. Carbon monoxide detectors

35. Method 1 for insulating walk-up attic stairways requires insulating:

- A. Only the ceiling hatch
- B. Stairwell walls and beneath landings, treads, and risers
- C. Only the attic floor
- D. Only exterior walls

36. The attic stairway door should be insulated to:

- A. R-5 only
- B. The R-value of the adjacent wall insulation or the maximum structurally allowable
- C. R-13 minimum
- D. Twice the wall insulation value

37. Before insulating stairwell walls, crews should investigate for:

- A. Plumbing leaks only
- B. Fire blocking or other barriers preventing insulation
- C. Roof ventilation
- D. Window flashing

38. Method 2 establishes the thermal boundary at the:

- A. Foundation
- B. Ceiling level above the stairs
- C. Exterior wall
- D. Roof ridge

39. A horizontal hatch installed above attic stairs should be:

- A. Uninsulated
- B. Insulated and air sealed
- C. Covered with plastic only
- D. Vented

40. Retractable attic stairways are best insulated by:

- A. Covering them with plastic
- B. Building an insulated box
- C. Spraying paint
- D. Removing the stairs

41. The insulated box over retractable stairs should have an R-value:

- A. Equal to the attic insulation or the highest structurally allowable
- B. R-5
- C. Half the attic insulation
- D. Equal to wall insulation only

Questions 42 thru 45 can be found in Section 2.2.4 - Calculating Attic Loose-Fill Insulation

42. Loose-fill attic insulation should be installed:

- A. At random depths
- B. At a uniform depth
- C. Only over ceiling joists
- D. In piles

43. Proper loose-fill installation is based on:

- A. Number of workers
- B. Manufacturer's coverage and density instructions
- C. Outside temperature
- D. Roof pitch

44. Cellulose insulation typically settles approximately:

- A. 1-2%
- B. 3-5%
- C. 10-20%
- D. 30-40%

45. Blown fiberglass insulation generally settles approximately:

- A. 3-10%
- B. 15-20%
- C. 25-30%
- D. It does not settle

Questions 46 thru 53 can be found in Section 2.2.5 - Installing Blown-in Attic Insulation

46. The preferred attic insulation material is:

- A. Fiberglass batts
- B. Blown-in insulation
- C. Foam board
- D. Reflective foil

47. Blown insulation is preferred because it:

- A. Costs less than every other insulation
- B. Forms a seamless blanket
- C. Eliminates ventilation
- D. Requires no blower

48. When blowing attic insulation, installers should begin:

- A. Near the attic hatch
- B. At the attic edges and work back toward the hatch
- C. At the roof ridge
- D. In the center

49. Proper blown insulation should be installed to:

- A. Random depths
- B. Consistent depth
- C. Two different depths
- D. Half depth near eaves

50. Performing a bag count helps verify:

- A. Attic size
- B. Proper insulation depth and density
- C. Ventilation rate
- D. Roof loading

51. "Fluffing" insulation should be:

- A. Encouraged
- B. Avoided
- C. Done only over eaves
- D. Required with fiberglass

52. Floored attic cavities should generally receive:

- A. Lower-density insulation
- B. Higher-density insulation to minimize settling
- C. No insulation
- D. Batt insulation only

53. Additional insulation may be installed over floored attics that:

- A. Are used for storage
- B. Are not used for storage
- C. Have skylights
- D. Have ridge vents

Questions 54 thru 57 can be found in Section 2.2.6 - Installing Attic Batt Insulation

54. Fiberglass batt insulation installed horizontally should be:

- A. Faced
- B. Unfaced
- C. Foil-faced only
- D. Kraft-faced only

55. Batt insulation should be cut:

- A. Oversized by one foot
- B. Carefully for a tight fit
- C. Smaller than the cavity
- D. Randomly

56. Two layers of batt insulation should generally be installed:

- A. Parallel
- B. At right angles to one another
- C. Only over rafters
- D. Only near eaves

57. Installing batt insulation in two perpendicular layers helps:

- A. Increase roof ventilation
- B. Minimize voids and improve thermal resistance
- C. Reduce attic height
- D. Prevent ice dams only

Questions 58 thru 79 can be found in Section 2.2.7 - Installing Attic Insulation in 1½ Story Homes (Finished Attics)

58. A finished 1½-story attic generally contains how many separate attic sections?

- A. Two
- B. Three
- C. Four
- D. Five

59. The short wall between the living space and the exterior wall is called the:

- A. Gable wall
- B. Knee wall
- C. Fire wall
- D. Rim joist

60. Under Method A for finished attics, the space behind the knee wall is treated as:

- A. Conditioned living space
- B. Unconditioned attic space
- C. Mechanical space only
- D. Conditioned crawl space

61. Under Method A, built-in closets, dressers, or cabinets that protrude into the knee wall should be:

- A. Removed before insulating
- B. Carefully air sealed and insulated
- C. Left untreated
- D. Covered only with polyethylene

62. An airtight seal beneath the knee wall is commonly created using:

- A. Only fiberglass batts
- B. Rigid board, drywall, or ductboard sealed with one-part foam
- C. Roofing felt
- D. Plastic vapor barrier only

63. The Bag Method is primarily used to:

- A. Measure insulation weight
- B. Create a dense-packed insulation plug in joist cavities
- C. Store insulation
- D. Ventilate attic spaces

64. The Bag Method limits:

- A. Air leakage only
- B. The amount of insulation required to plug a cavity
- C. Roof ventilation
- D. Moisture migration

65. Insulation coverage should be especially verified where the:

- A. Roof rafter meets the knee wall and collar beam
- B. Foundation meets the footing
- C. Chimney meets the roof
- D. Windows meet the siding

66. Roof rafters under Method A are commonly insulated using:

- A. Reflective foil
- B. Dense-packed insulation
- C. Loose straw
- D. Mineral board

67. Knee walls may be insulated using:

- A. Dense-pack insulation, fiberglass batts, or two-part foam
- B. Roofing shingles
- C. Concrete
- D. Only spray paint

68. If two-part foam remains exposed in an accessible attic, it must be protected with:

- A. Roofing felt
- B. A thermal barrier
- C. Plastic sheeting
- D. Fiberglass mesh only

69. Fiberglass batt insulation installed in knee walls should be covered with:

- A. Aluminum flashing
- B. Vapor-permeable material to reduce wind washing
- C. Roofing shingles
- D. House wrap only

70. Knee wall attic access panels should be insulated to:

- A. R-13 only
- B. The R-value of adjacent knee wall insulation or the maximum structurally allowable
- C. Half the attic insulation
- D. No insulation

71. Operable knee wall access panels should be:

- A. Permanently sealed shut
- B. Weather-stripped and tightly latched
- C. Left loose for ventilation
- D. Painted only

72. A dam may be installed near knee wall access panels primarily to:

- A. Increase ventilation
- B. Maintain insulation depth and prevent loose-fill insulation from spilling
- C. Support the roof
- D. Reduce roof weight

73. Under Method B, the space behind the knee wall is treated as:

- A. Unconditioned attic
- B. Conditioned space
- C. Crawl space
- D. Garage space

74. In Method B, the thermal boundary is located primarily at the:

- A. Floor joists
- B. Roof deck and gable end walls
- C. Foundation wall
- D. Knee wall only

75. Under Method B, crews should air seal:

- A. Along the gable end walls
- B. Only the attic floor
- C. Crawl space vents
- D. Basement windows

76. Under Method B, workers should NOT air seal:

- A. Gable walls
- B. The floor of the outer ceiling joist attic
- C. Roof rafters
- D. Roof penetrations

77. Existing roof sheathing can be insulated by:

- A. Dense-packing through drilled holes
- B. Removing all rafters
- C. Applying only batt insulation
- D. Spraying water

78. Batt insulation installed under Method B should be covered with:

- A. Vapor retarder that is also air sealed
- B. House wrap
- C. Roofing felt
- D. Nothing

79. Two-part foam generally eliminates the need for a vapor retarder because it functions as:

- A. Roofing material
- B. Both insulation and air seal
- C. Structural reinforcement
- D. Fire blocking only

Questions 80 thru 82 can be found in Section 2.2.8 - Insulating Attics with Limited Accessibility

80. Limited-access attics should generally receive:

- A. Loose-fill insulation installed at sufficient density
- B. Only fiberglass batts
- C. Reflective foil
- D. No insulation

81. Before insulating inaccessible attic cavities, crews should first:

- A. Paint the roof
- B. Verify the roof is in good condition
- C. Remove all soffit vents
- D. Install ridge vents

82. Hidden air bypasses discovered in inaccessible attics should be:

- A. Ignored
- B. Sealed before insulation
- C. Filled with loose insulation only
- D. Covered with plywood

Questions 83 thru 84 can be found in Section 2.2.9 - Insulating Closed Roof Cavities

83. Closed roof cavities include areas such as:

- A. Cathedral ceilings
- B. Flat roofs
- C. Dormers
- D. All of the above

84. Closed roof cavities should generally be insulated using:

- A. Dense loose-fill insulation
- B. Straw
- C. Fiberglass blankets only
- D. Reflective foil only

Questions 85 thru 90 can be found in Section 2.3 - Wall Insulation

85. Properly installed dense-packed wall insulation reduces:

- A. Roof weight
- B. Air leakage through walls
- C. Window condensation only
- D. Foundation settlement

86. Wisconsin's preferred wall insulation method is:

- A. Loose-fill without tubing
- B. Tube-fill dense-pack method
- C. Batt insulation only
- D. Foam board only

87. Empty wall cavities encourage:

- A. Reduced convection
- B. Air movement similar to chimneys
- C. Better insulation performance
- D. Lower heating bills automatically

88. Dense-packing walls requires caution because excessive pressure may:

- A. Damage plaster, drywall, or paneling
- B. Damage shingles
- C. Crack foundations
- D. Break windows

89. Before insulating walls, crews should inspect for:

- A. Hidden openings where insulation may escape
- B. Roof flashing only
- C. Foundation drains only
- D. Chimney liners only

90. Infrared cameras are valuable because they help verify:

- A. Electrical voltage
- B. Insulation coverage and density differences
- C. Plumbing pressure
- D. Roof slope

Questions 91 thru 93 can be found in Section 2.3.1 - Calculating Wall Coverage and Density

91. Dense-packed cellulose wall insulation should be installed at a density of:

- A. 1.0–2.0 lb/ft³
- B. 2.0–3.0 lb/ft³
- C. 3.5–4.5 lb/ft³
- D. 5.0–6.0 lb/ft³

92. Dense-packed fiberglass wall insulation should be installed at a density of:

- A. 0.5–1.0 lb/ft³
- B. 2.0–2.5 lb/ft³
- C. 3.5–4.5 lb/ft³
- D. 5.0–6.0 lb/ft³

93. Density calculations primarily determine:

- A. Roof pitch
- B. Number of insulation bags required
- C. Number of workers needed
- D. Blower door pressure

Questions 94 thru 100 can be found in Section 2.3.2 - Inspecting and Repairing Walls Before Installing Insulation

94. Before insulating walls, crews should first inspect for:

- A. Moisture damage
- B. Roof snow load
- C. Furnace efficiency
- D. Interior paint color

95. Obvious gaps around exterior window trim should be:

- A. Left alone
- B. Sealed to prevent water penetration
- C. Filled with insulation only
- D. Covered with siding

96. Before removing siding, workers should detach:

- A. Interior trim
- B. Gutters, conduit clamps, and similar attachments
- C. Windows
- D. Foundation flashing

97. Weak interior wall surfaces should be:

- A. Ignored
- B. Reinforced or repaired before dense-packing
- C. Painted only
- D. Removed completely

98. Hidden openings such as pocket doors or balloon framing should be:

- A. Left open
- B. Sealed to prevent insulation loss
- C. Filled with water
- D. Used for ventilation

99. Wall cavities used as forced-air distribution systems should be:

- A. Dense-packed
- B. Left uninsulated
- C. Filled with batt insulation
- D. Filled with foam board

100. Live knob-and-tube wiring inside wall cavities requires:

- A. Dense-packed cellulose
- B. No insulation in that cavity
- C. Spray foam
- D. Fiberglass batts only

Questions 101 thru 107 can be found in Section 2.3.3 - Removing Siding and Drilling Sheathing

101. When insulating from the exterior, the preferred practice is to:

- A. Drill through finished siding
- B. Remove siding to drill through the sheathing
- C. Remove drywall
- D. Remove windows

102. Drilling directly through siding should occur:

- A. On every house
- B. Only as a last resort
- C. Whenever vinyl siding exists
- D. Before attempting removal

103. If siding cannot be removed, agencies must:

- A. Notify the IRS
- B. Document the reason in the customer file
- C. Replace all siding
- D. Install batt insulation

104. Cement-asbestos (transite) siding may only be disturbed by:

- A. Any weatherization worker
- B. Certified personnel when required by policy
- C. Homeowners only
- D. Roofing contractors only

105. Sidewall insulation involving lead hazards should follow:

- A. Plumbing standards
- B. Lead-safe work practices
- C. Roofing standards
- D. HVAC commissioning

106. Vinyl or metal siding is commonly removed using:

- A. Circular saw
- B. Zip tool
- C. Hammer drill
- D. Chisel

107. Lap siding should be removed carefully using:

- A. Utility knife and flat bar
- B. Pry bar only
- C. Axe
- D. Grinder

Questions 108 thru 115 can be found in Section 2.3.4 - Dense-Packed Wall Insulation from the Exterior

108. Dense-packed wall insulation is best installed using:

- A. Open-blow method
- B. Tube-fill method
- C. Batt-only method
- D. Foam board

109. Fill tubes are commonly marked at:

- A. Six-inch intervals
- B. One-foot intervals
- C. Two-foot intervals
- D. Three-foot intervals

110. Exterior wall access holes are generally:

- A. ½ inch
- B. 1 inch
- C. 2-3 inches in diameter
- D. 6 inches

111. Wall cavities should be probed before blowing insulation to identify:

- A. Roof leaks
- B. Fire blocking and other obstructions
- C. Plumbing fixtures
- D. Flooring type

112. Initial dense-packing should begin with:

- A. Random wall cavities
- B. Several unobstructed full-height cavities
- C. Basement walls
- D. Knee walls

113. During tube-filling, the hose should be:

- A. Pulled out immediately
- B. Slowly withdrawn while filling the cavity
- C. Left stationary
- D. Removed before insulation starts

114. After dense-packing is complete, workers should:

- A. Leave holes open
- B. Plug, seal, and replace siding
- C. Spray paint the wall
- D. Remove flashing

115. Balloon-framed floor cavities should be insulated to:

- A. Increase ventilation
- B. Create insulation plugs that reduce air movement
- C. Drain water
- D. Support drywall

Questions 116 thru 118 can be found in Section 2.3.5 - Dense-Packed Wall Insulation from the Interior

116. When insulating from the interior, drilled holes should be restored:

- A. With exposed foam
- B. As close as possible to the original appearance
- C. With duct tape
- D. Only if requested

117. Interior wall insulation work must follow:

- A. Lead-safe work practices
- B. Roofing safety rules only
- C. Plumbing code only
- D. Landscaping requirements

118. When required by testing, interior wall work must also follow:

- A. OSHA ladder rules only
- B. Asbestos protocols
- C. Appliance installation instructions
- D. Window installation standards

Question 119 can be found in Section 2.3.6 - Dense-Packing from Other Access Locations

119. Dense-packing from attic or basement access is especially useful in:

- A. Concrete walls
- B. Balloon-framed wall cavities
- C. Brick veneer only
- D. Crawl space walls only

Question 120 can be found in Section 2.4 - Crawl Space Requirements

120. Every weatherization agency should have a written policy establishing:

- A. Vehicle maintenance
- B. Minimum crawl space working requirements
- C. Employee vacation schedules
- D. Roofing inspections

Questions 121 thru 124 can be found in Section 2.4.1 - Crawl Space Access Requirements

121. The recommended minimum size for a new floor crawl space access opening is:

- A. 12" × 18"
- B. 16" × 24"
- C. 18" × 24"
- D. 24" × 24"

122. The recommended minimum size for a new perimeter wall crawl space access opening is:

- A. 12" × 18"
- B. 16" × 24"
- C. 18" × 24"
- D. 24" × 24"

123. New crawl space access openings may be smaller only when:

- A. The homeowner requests it
- B. Existing framing constrains the work
- C. The crawl space is insulated
- D. The foundation is concrete

124. When creating a crawl space access opening, workers should:

- A. Cut structural framing if necessary
- B. Avoid disturbing framing or structural systems
- C. Remove floor joists
- D. Remove rim joists

Questions 125 thru 130 can be found in Section 2.4.2 - Crawl Space Signage

125. Crawl space signage should be:

- A. Handwritten on cardboard
- B. Laminated and at least 8½ × 11 inches
- C. Spray painted on the foundation
- D. Posted only outside the crawl space

126. Crawl space signs should be installed:

- A. At every access, inside the crawl space
- B. On the roof
- C. At the electrical panel
- D. In the attic

127. Crawl space signage should identify:

- A. Mechanical components installed in the crawl space
- B. Property tax information
- C. Roof framing dimensions
- D. Electrical service size

128. Crawl space signs should prohibit storage of:

- A. Furniture
- B. Hazardous and flammable materials
- C. Lumber
- D. Appliances

129. Crawl space signage should caution workers not to damage the:

- A. Air barrier, vapor retarder, and insulation
- B. Foundation paint
- C. Roof sheathing
- D. Exterior siding

130. Crawl space signs should include:

- A. Installer contact information
- B. Mortgage information
- C. Utility account numbers
- D. Building permit number

Questions 131 thru 142 can be found in Section 2.5 - Floor and Foundation Insulation

131. Before installing floor or foundation insulation, crews should assess the crawl space for:

- A. Roofing materials only
- B. Health and safety issues and debris
- C. Landscaping
- D. Driveway condition

132. Vegetation and objects larger than _____ should generally be removed before installing a ground vapor retarder.

- A. ½ inch
- B. 1 inch
- C. 2 inches
- D. 4 inches

133. Ground vapor retarders installed over exposed earth shall be at least:

- A. 2 mil
- B. 4 mil
- C. 6 mil
- D. 10 mil

134. Ground vapor retarder seams should overlap at least:

- A. 3 inches
- B. 6 inches
- C. 12 inches
- D. 18 inches

135. Ground vapor retarder seams should be installed using a:

- A. Horizontal weave method
- B. Reverse shingle (upslope lapping) technique
- C. Random overlap
- D. Vertical butt joint

136. Seams and penetrations in the ground vapor retarder should be:

- A. Left open
- B. Mechanically fastened only
- C. Completely sealed
- D. Covered with batt insulation

137. Interior drainage collection points should remain:

- A. Covered
- B. Accessible
- C. Filled with insulation
- D. Permanently sealed

138. On sloping ground or maintenance areas, the vapor retarder should be secured with:

- A. Roofing nails only
- B. Fasteners or ballast
- C. Loose gravel only
- D. Adhesive only

139. If a ground vapor retarder is damaged during installation, workers should:

- A. Replace the entire crawl space floor
- B. Seal holes and tears with appropriate materials
- C. Ignore minor damage
- D. Cover the damage with insulation only

140. Existing floor drains should:

- A. Be permanently sealed
- B. Continue allowing moisture to reach the drain
- C. Be insulated over
- D. Be removed

141. The decision to insulate the floor or the foundation depends primarily on:

- A. Paint color
- B. Accessibility and location of heating distribution or plumbing
- C. Roof pitch
- D. Number of windows

142. Basements are generally:

- A. Completely insulated during weatherization
- B. Not insulated, but typically air sealed
- C. Filled with cellulose
- D. Spray foamed from floor to ceiling

Questions 143 thru 145 can be found in Section 2.5.1 - Establishing a Thermal Boundary

143. An effective thermal boundary places the air barrier:

- A. Outside the insulation
- B. Between the insulation and conditioned space
- C. On the roof only
- D. Beneath the foundation

144. In northern climates, the preferred strategy is to:

- A. Insulate only the floor
- B. Insulate and air seal the foundation walls
- C. Leave crawl spaces vented
- D. Insulate only the ceiling

145. Sealing crawl space vents while insulating foundation walls helps place which components inside the thermal boundary?

- A. Roofing materials
- B. Furnaces, ducts, and pipes
- C. Windows
- D. Chimneys

Questions 146 thru 156 can be found in Section 2.5.2 - Rim Joist and Box Sill Insulation

146. The rim joist and box sill are considered:

- A. Strongest parts of the roof
- B. Weak points in the thermal boundary
- C. Crawl space access points
- D. Ventilation pathways

147. In balloon-framed homes, insulating the rim joist should include:

- A. Air sealing stud cavities
- B. Installing ridge vents
- C. Painting exposed framing
- D. Removing sill plates

148. Two-part spray foam is advantageous in the rim joist because it:

- A. Eliminates framing
- B. Insulates and air seals in one application
- C. Requires no curing
- D. Replaces structural members

149. Spray polyurethane foam applied in the box sill area should generally not exceed:

- A. 1 inch
- B. 2 inches
- C. 3 inches
- D. 6 inches

150. Before applying spray polyurethane foam, the substrate should be:

- A. Wet and dusty
- B. Dry and reasonably clean
- C. Painted
- D. Covered with plastic

151. Two-part spray polyurethane foam installed in the box sill should generally have a density of:

- A. 0.1–0.3 lb/ft³
- B. 0.5–2.0 lb/ft³
- C. 3.0–4.0 lb/ft³
- D. 5.0–6.0 lb/ft³

152. Spray polyurethane foam installed below the sill box requires:

- A. No additional protection
- B. A thermal barrier on the interior
- C. A vapor retarder only
- D. Fiberglass batts over the foam

153. When installing two-part foam, workers should:

- A. Wear appropriate personal protective equipment (PPE)
- B. Remove all ventilation
- C. Wet the surface before spraying
- D. Cover electrical panels

154. Rigid foam board used at the rim joist should typically be:

- A. Left unsealed
- B. Sealed around the edges with spray foam
- C. Installed without air sealing
- D. Covered with loose-fill insulation

155. Cellulose insulation should generally NOT be used where it is:

- A. Behind drywall
- B. In direct contact with the foundation
- C. Installed in wall cavities
- D. Dense-packed in attics

156. Fiberglass batt insulation may be used at the rim joist only if:

- A. The box sill is effectively air sealed
- B. The cavity is vented
- C. The batt is loosely installed
- D. Foam board is removed

Questions 157 thru 166 can be found in Section 2.5.3 - Floor Insulation

157. Prior to insulating floors, crews should first establish:

- A. Roof ventilation
- B. An effective air barrier
- C. Window flashing
- D. Gable ventilation

158. Ground vapor retarders in crawl spaces should extend:

- A. Six inches up the foundation walls
- B. To the roof deck
- C. To the attic floor
- D. Across the ceiling

159. Before installing a vapor retarder, problems such as plumbing leaks or poor drainage should be:

- A. Ignored
- B. Corrected
- C. Covered with insulation
- D. Painted

160. In balloon-framed homes, the bottoms of stud cavities should be:

- A. Left open
- B. Air sealed before insulating the floor
- C. Filled with gravel
- D. Covered with plywood

161. Floor insulation should be installed:

- A. Loose within the cavity
- B. Tightly against the subfloor and rim joist
- C. Hanging below the joists
- D. Only between every other joist

162. Floor insulation should be installed without:

- A. Compression
- B. Voids, edge gaps, or end gaps
- C. Vapor retarders
- D. Mechanical supports

163. Batt insulation installed beneath floors should be supported with:

- A. Roofing felt only
- B. Insulation hangers, plastic mesh, or other approved supports
- C. Loose wire
- D. Plastic sheeting only

164. Ducts remaining in crawl spaces should generally be:

- A. Removed
- B. Sealed and insulated
- C. Left exposed
- D. Filled with insulation

165. Installing a vapor-permeable air barrier beneath floor insulation helps:

- A. Increase roof ventilation
- B. Reduce convective looping and support insulation
- C. Replace vapor retarders
- D. Increase crawl space humidity

166. Enclosed floor cavities are commonly insulated using:

- A. Loose batts
- B. Dense-packed insulation
- C. Reflective foil
- D. Fiberglass blankets only

Questions 167 thru 176 can be found in Section 2.5.4 - Foundation Insulation

167. Foundation insulation is most commonly installed:

- A. On the exterior siding
- B. On the inside surface of the foundation wall
- C. On the roof deck
- D. Under the slab

168. In areas where termite pressure exists, removable band joist insulation should maintain approximately:

- A. A 1-inch inspection gap
- B. A 2-inch inspection gap
- C. A 3-inch inspection gap
- D. A 6-inch inspection gap

169. Interior foundation insulation should be attached using:

- A. Tape only
- B. Appropriate fasteners and/or adhesive
- C. Roofing nails
- D. Wire ties only

170. Foil-Scrim-Kraft (FSK) fiberglass insulation should be attached to the:

- A. Roof rafters only
- B. Sill plate, floor joists, and/or floor
- C. Windows only
- D. Ceiling drywall

171. Before installing FSK-faced insulation, rim joists should first receive:

- A. Unfaced fiberglass insulation
- B. Reflective foil
- C. Cellulose only
- D. Plastic sheeting

172. Rigid insulation boards installed on flat foundation walls should be:

- A. Loose fitted
- B. Sealed and mechanically fastened
- C. Glued only
- D. Installed without sealing

173. Two-part foam applied to foundation walls should be installed:

- A. Without regard to curing
- B. According to manufacturer recommendations and applicable building codes
- C. Only in a single heavy application
- D. Without PPE

174. Two-part foam generally expands to approximately:

- A. The same thickness as applied
- B. Twice its initial thickness
- C. Three times its initial thickness
- D. Four times its initial thickness

175. During cold weather, installers should first apply:

- A. Water
- B. A skim coat of foam
- C. Fiberglass batt insulation
- D. Vapor retarder

176. One purpose of the skim coat is to:

- A. Dry the crawl space
- B. Warm the wall and improve foam adhesion
- C. Reduce foam density
- D. Replace the thermal barrier

180. The primary objective of the final inspection and quality assurance process is to ensure:

- A. The job is completed as quickly as possible
- B. All weatherization measures comply with program requirements, are properly installed, and perform as intended
- C. Only insulation thickness is measured
- D. Equipment is returned to storage

Questions 177 thru 180 can be found in Section - Final Inspection & Quality Assurance Standards

177. During the final inspection, inspectors should verify that insulation is:

- A. Installed only where visible
- B. Installed completely and according to specifications
- C. Installed only in attics
- D. Installed without documentation

178. Quality assurance inspections should confirm that installed materials:

- A. Meet program specifications and manufacturer requirements
- B. Are the least expensive available
- C. Are installed only for appearance
- D. Require no documentation

179. Final inspections should verify that completed weatherization work:

- A. Meets required workmanship and performance standards
- B. Matches neighboring homes
- C. Requires no customer review
- D. Eliminates all future maintenance

