



COURSE 962915

Weatherization Guide Chapters 6 & 7

Exam Material

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Summary Of This Course

WEATHERIZATION GUIDE CHAPTERS 6 & 7

Approved by the

Wisconsin Department of Safety and Professional Services Safety and Buildings Division

Course Identification Number 962915

Educational Credit Hours: 6 Hours

Course Provider:

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Chapters 6 and 7 of the Weatherization Field Guide focus on repair standards and weatherization procedures that improve energy efficiency, durability, and occupant safety.

Chapter 6 emphasizes performing only necessary, cost-effective repairs that support weatherization measures, including proper repair or replacement of windows and doors, air sealing, weather-stripping, and quality assurance documentation.

Chapter 7 addresses manufactured-home weatherization, highlighting duct sealing, return-air improvements, floor, wall, and ceiling insulation, air sealing, combustion safety, and proper installation of replacement furnaces and water heaters. The chapter also covers ventilation, window improvements, and interior storm windows while stressing compliance with manufacturer instructions, applicable codes, combustion testing, gas leak detection, and thorough final inspections to ensure safe, effective, and long-lasting weatherization work.

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

[illegible]

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 6 - Repair

6.1 Windows and Doors

6.1.1 Window Repair and Replacement

6.1.2 Door Repair and Replacement

Chapter 7: Manufactured Home Weatherization

7.1 Manufactured Home Weatherization

7.2 Supply Distribution System

7.2.1 Pressure Pan Duct Testing

7.2.2 Interpreting Duct Leakage Results

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7.3.1 Measuring Temperature Rise

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7.4 Floor/Belly Insulation

7.4.1 Preparations for Belly Insulation

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7.4.3 Rim Blow through Rim Joists

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7.5.2 Blowing the Roof Cavity from the Roof Blowing from a Square Hole

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7.5.6 Interior Drill and Blow

7.6 Sidewall Insulation

7.6.1 Preparing Siding for Wall Insulation

7.6.2 Sidewall Blowing Technique

7.6.3 Sidewall Stuffing Technique

- 7.7 Air Sealing
- 7.8 Combustion Appliance and Fuel Distribution Safety
- 7.9 Heating Unit Replacement
- 7.10 Water Heater Replacement
 - 7.10.1 Gas Water Heater Installations
 - 7.10.2 Exterior Access Water Heater Closets
- 7.12 Window Replacement
- 7.13 Interior Storm Windows
- 7.14 Door Replacement

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

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Chapter 6 – Repair

Questions 1 thru 5 can be found in Section 6 - Repair

1. According to Chapter 6, repairs are defined as items necessary for the:

- A. Cosmetic improvement of the home
- B. Effective performance or preservation of installed weatherization materials
- C. Replacement of all aging building components
- D. Improvement of property value

2. Repair measures performed under the Weatherization Program must be:

- A. Decorative and permanent
- B. Reasonable, cost-effective, and only performed when needed
- C. Completed on every home regardless of condition
- D. Requested only by the homeowner

3. Which documentation is required for repair work?

- A. Utility bills only
- B. Verbal approval only
- C. Written documentation and photographs in the customer file
- D. Warranty registration

4. Which of the following is an example of an allowable repair?

- A. Installing decorative shutters
- B. Repairing a minor roof leak
- C. Remodeling a kitchen
- D. Installing new flooring throughout the home

5. When performing repairs, workers must follow applicable:

- A. Plumbing code only
- B. Electrical code only
- C. Lead-safe and asbestos-safe work practices
- D. Roofing manufacturer recommendations only

Questions 6 thru 8 can be found in Section 6.1 - Windows and Doors

6. Windows and doors generally make up:

- A. Most of the building's thermal boundary
- B. About half of the building's thermal boundary
- C. A small percentage of the building's thermal boundary
- D. None of the building's thermal boundary

7. Blower door testing has shown that windows and doors generally:

- A. Harbor the largest air leaks
- B. Tend not to harbor large air leaks
- C. Should always be replaced
- D. Leak more than attics

8. Replacing broken glass and installing weather-stripping are generally considered:

- A. Structural repairs
- B. Air sealing work
- C. Roofing repairs
- D. Electrical upgrades

Questions 9 thru 12 can be found in Section 6.1.1 - Window Repair and Replacement

9. Replacement windows should be sealed on:

- A. The interior only
- B. The exterior only
- C. Both the interior and exterior
- D. Neither side

10. When replacing exterior trim around a window, all bare wood should be:

- A. Painted immediately
- B. Primed
- C. Left unfinished
- D. Covered with flashing only

11. A replacement pane of glass should generally be:

- A. Exactly the size of the opening
- B. 1/8 to 3/16 inch smaller than the opening
- C. One inch smaller than the opening
- D. Larger than the opening

12. Before installing a new basement window, rotted framing should be replaced with:

- A. MDF
- B. Untreated lumber
- C. Pressure-treated lumber
- D. Particle board

Questions 13 thru 20 can be found in Section 6.1.2 - Door Repair and Replacement

13. Which doors may be replaced under the Weatherization Program?

- A. All exterior doors
- B. Primary doors only
- C. Storm doors only
- D. Interior doors only

14. Which of the following is an approved door repair?

- A. Replacing the roof over the door
- B. Replacing a deteriorated threshold
- C. Replacing the wall framing
- D. Installing decorative trim

15. After installing a replacement primary door, the installer should verify the door:

- A. Opens outward only
- B. Opens, closes, latches, and locks smoothly
- C. Is painted before testing
- D. Requires extra force to latch

16. Fabricated basement replacement doors should be made from:

- A. Untreated plywood
- B. Pressure-treated lumber
- C. MDF panels
- D. Particle board

17. If a fabricated basement door is insulated, the insulation should be at least:

- A. R-2
- B. R-3
- C. R-5
- D. R-10

18. During final inspection, replacement windows must be:

- A. ENERGY STAR® certified
- B. Triple-pane only
- C. Wood construction only
- D. Painted before inspection

19. Final inspection requires documentation of:

- A. Property tax records
- B. Lead-safe work practices and photographs showing the original window or door qualified for replacement
- C. Utility rebate forms only
- D. Manufacturer warranty registration

20. According to the final inspection standards, a replacement door must:

- A. Open and close easily, latch tightly, meet the R-value requirement, and not leak
- B. Match the original color only
- C. Be constructed only of wood
- D. Include a storm door

Chapter 7 – Manufactured Home Weatherization

Questions 21 thru 40 can be found in Section 7.1 - Manufactured Home Weatherization

21. Manufactured homes are also commonly known as:

- A. Modular homes
- B. Mobile homes
- C. Panelized homes
- D. Site-built homes

22. Manufactured homes present unique:

- A. Roofing warranties only
- B. Weatherization opportunities and challenges
- C. Plumbing code exemptions
- D. Foundation requirements only

23. Weatherization practices for manufactured homes:

- A. Are always identical to site-built homes
- B. Often differ from site-built dwellings
- C. Cannot include insulation upgrades
- D. Exclude air sealing

24. Compared to site-built homes, manufactured homes generally:

- A. Use less energy per square foot
- B. Use about the same amount of energy
- C. Use more energy per square foot
- D. Require no heating system

25. Manufactured homes are generally easier to weatherize because of their:

- A. Brick construction
- B. Standardized construction
- C. Concrete foundations
- D. Large attics

26. Which weatherization measure offers one of the greatest opportunities for energy savings?

- A. Interior painting
- B. Duct sealing
- C. Carpet replacement
- D. Exterior siding washing

27. Which insulation retrofit is identified as an important energy-saving opportunity?

- A. Foundation insulation
- B. Floor and ceiling insulation
- C. Garage insulation
- D. Porch insulation

28. Replacement heating systems are considered:

- A. Decorative improvements
- B. Significant energy-saving opportunities
- C. Structural repairs
- D. Moisture-control measures

29. Which of the following is a typical manufactured-home component?

- A. Masonry basement wall
- B. Steel chassis
- C. Concrete floor slab
- D. Brick veneer

30. Manufactured homes commonly include:

- A. Steel outriggers and cross members
- B. Concrete beams
- C. Structural brick walls
- D. Steel roof trusses only

31. The underbelly of a manufactured home primarily contains:

- A. Chimneys
- B. Floor insulation and ductwork
- C. Roofing material
- D. Windows

32. Floor joists in manufactured homes support the:

- A. Roof decking
- B. Floor decking
- C. Exterior siding
- D. Ceiling board

33. Manufactured-home heating and air-conditioning ducts are commonly located:

- A. Inside attic trusses
- B. Beneath the floor
- C. In masonry walls
- D. Inside roof rafters

34. Wall insulation in many manufactured homes is commonly:

- A. Spray polyurethane foam
- B. Fiberglass insulation
- C. Rigid foam board
- D. Cellulose only

35. The exterior siding shown as typical in the Field Guide is:

- A. Vinyl lap siding
- B. Metal siding
- C. Fiber cement siding
- D. Brick veneer

36. Older manufactured homes commonly use what type of roof?

- A. Clay tile
- B. Galvanized steel one-piece roof
- C. Asphalt shingles only
- D. Slate roofing

37. Manufactured homes typically contain:

- A. Bowstring trusses
- B. Heavy timber trusses
- C. Concrete roof joists
- D. Steel bar joists

38. A vapor barrier in the roof assembly is located:

- A. Outside the roof covering only
- B. Above the insulation beneath the roof covering
- C. Under the floor
- D. Behind the siding

39. The typical windows shown in the manufactured-home construction diagram are:

- A. Wood casement windows
- B. Metal windows
- C. Fiberglass windows
- D. Vinyl awning windows

40. According to Chapter 7, manufactured-home weatherization focuses on improving:

- A. Only the home's appearance
- B. Energy efficiency through insulation, air sealing, duct sealing, and heating-system improvements
- C. Landscaping and drainage
- D. Interior remodeling

Questions 41 thru 40 can be found in Section 7.2 - Supply Distribution System

41. The primary purpose of the supply distribution system is to:

- A. Remove combustion gases
- B. Deliver conditioned air from the furnace to the living space
- C. Ventilate the attic
- D. Drain condensation

42. In most manufactured homes, the supply duct is located:

- A. In the attic
- B. Beneath the floor
- C. Inside exterior walls
- D. Above the ceiling

43. Leaks in the supply duct system primarily result in:

- A. Lower water pressure
- B. Energy loss and reduced heating efficiency
- C. Increased roof ventilation
- D. Better indoor air quality

44. One objective of duct sealing is to:

- A. Increase blower speed
- B. Reduce air leakage
- C. Increase thermostat settings
- D. Remove insulation

45. The supply duct should be inspected for:

- A. Paint defects
- B. Air leaks and physical damage
- C. Foundation settlement only
- D. Window operation

46. Duct joints should be:

- A. Left unsealed for expansion
- B. Properly sealed to minimize leakage
- C. Covered with fiberglass only
- D. Painted after installation

47. Which material is commonly recommended to seal duct joints?

- A. Latex caulk
- B. Approved duct mastic
- C. Silicone bathroom caulk
- D. Spray paint

48. Before insulating the belly, technicians should:

- A. Install carpet
- B. Complete duct repairs and sealing
- C. Replace windows
- D. Paint the underside

49. Damaged duct sections should generally be:

- A. Ignored if small
- B. Repaired or replaced
- C. Painted
- D. Covered with insulation only

50. A properly sealed duct system helps improve:

- A. Lighting efficiency
- B. Heating system performance
- C. Roof drainage
- D. Foundation strength

Questions 51 thru 55 can be found in Section 7.2.1 - Pressure Pan Testing

51. Pressure pan testing is used to evaluate:

- A. Roof leakage
- B. Duct leakage
- C. Plumbing leaks
- D. Window performance

52. Pressure pan testing is normally performed while operating:

- A. A furnace fan only
- B. A blower door
- C. An exhaust fan
- D. A dryer

53. The pressure pan is placed over:

- A. A roof vent
- B. A supply register
- C. A return grille
- D. A crawlspace vent

54. Higher pressure pan readings generally indicate:

- A. Better duct sealing
- B. Greater duct leakage
- C. Lower blower-door airflow
- D. Better insulation

55. Pressure pan readings should be recorded:

- A. Only after repairs
- B. Before and after duct sealing
- C. Only during final inspection
- D. Only if requested by the homeowner

Questions 56 thru 58 can be found in Section 7.2.2 - Interpretation of Pressure Pan Readings

56. Pressure pan readings help technicians:

- A. Determine paint thickness
- B. Locate areas of duct leakage
- C. Measure insulation depth
- D. Test furnace efficiency

57. Registers with the highest pressure pan readings generally:

- A. Require no additional work
- B. Are associated with the greatest duct leakage
- C. Should be closed permanently
- D. Indicate excessive insulation

58. Pressure pan testing should be used together with:

- A. Visual inspection of the duct system
- B. Window testing
- C. Roof inspections only
- D. Plumbing pressure testing

Questions 59 thru 70 can be found in Section 7.2.3 - Duct Sealing

59. Before sealing ducts, technicians should first:

- A. Replace insulation
- B. Locate and identify duct leaks
- C. Replace the thermostat
- D. Remove supply registers

60. After duct sealing is completed, technicians should:

- A. Perform pressure pan testing again to verify improvements
- B. Increase the thermostat setting
- C. Remove the blower door
- D. Install additional windows

61. Manufactured-home duct sealing should focus primarily on:

- A. Roof penetrations
- B. Leaks at joints, seams, and duct connections
- C. Window frames
- D. Foundation walls

62. One of the most common leakage locations is:

- A. Ridge vents
- B. Furnace-to-duct connection
- C. Ceiling drywall joints
- D. Window trim

63. When sealing ducts, technicians should use materials that are:

- A. Temporary and removable
- B. Durable and compatible with HVAC duct systems
- C. Decorative
- D. Water soluble

64. On double-wide manufactured homes, the crossover duct is generally constructed of:

- A. PVC pipe
- B. Insulated flexible duct
- C. Concrete duct
- D. Galvanized rigid pipe only

65. The inner sleeve of a crossover duct should be:

- A. Left unsecured
- B. Mechanically secured to the starter collar
- C. Attached only with tape
- D. Filled with insulation

66. The preferred sealant for crossover duct connections is:

- A. Latex paint
- B. Duct mastic
- C. Silicone caulk only
- D. Roofing cement

67. When central air conditioning is present, the plenum-to-trunk connection should be:

- A. Left untouched
- B. Reinforced and sealed with mastic
- C. Filled with fiberglass
- D. Covered with plastic

68. Take-offs from the main trunk to side registers are:

- A. Rarely accessible
- B. Accessed from beneath the manufactured home
- C. Located in the attic
- D. Above the ceiling

69. Ends of trunk runs and unusual seams should be:

- A. Ignored
- B. Physically inspected and sealed as needed
- C. Painted
- D. Covered with insulation only

70. After completing duct sealing, technicians should:

- A. Remove supply registers
- B. Retest the duct system to verify improvements
- C. Replace the thermostat
- D. Add additional insulation immediately

Questions 71 thru 80 can be found in Section 7.3 – Return-Air Distribution System

71. Many manufactured homes do not have:

- A. Supply ducts
- B. Ducted return-air systems
- C. Heating systems
- D. Floor insulation

72. In many manufactured homes, the _____ serves as the return-air duct.

- A. Chimney
- B. Floor cavity or attic space
- C. Crawlspace
- D. Roof vent

73. The Field Guide recommends eliminating floor and ceiling cavities used as:

- A. Supply ducts
- B. Return-air plenums
- C. Plumbing chases
- D. Electrical raceways

74. After eliminating the return plenum, return air should flow through the:

- A. Crawlspace
- B. Hallway directly to the furnace
- C. Roof cavity
- D. Exterior wall

75. To eliminate a belly return-air system, technicians should first:

- A. Remove insulation
- B. Block all floor return registers with a durable, airtight barrier
- C. Replace the furnace
- D. Seal supply registers

76. Hidden floor return registers may be located:

- A. Only in bathrooms
- B. Under built-ins, behind furniture, or in cabinet kick spaces
- C. Only in bedrooms
- D. Only beneath stairways

77. In the furnace closet, technicians should:

- A. Remove all ductwork
- B. Completely block floor duct openings
- C. Increase combustion air
- D. Install insulation over the burner

78. If the existing atmospheric furnace is retained, technicians should avoid sealing the:

- A. Supply register
- B. Combustion air inlet
- C. Thermostat wire
- D. Filter rack

79. Floor return-air systems can reduce efficiency because the floor cavity becomes:

- A. A sealed return duct
- B. One large leaky return duct
- C. A combustion chamber
- D. A conditioned plenum

80. When return-air leakage is significant, the recommended action is to:

- A. Leave the system unchanged
- B. Eliminate the floor return-air system
- C. Install additional supply registers
- D. Increase blower speed

Questions 81 thru 85 can be found in Section 7.3.1 – Temperature Rise

81. Temperature rise is measured across the:

- A. Water heater
- B. Furnace
- C. Air conditioner condenser
- D. Chimney

82. Temperature rise is determined by subtracting:

- A. Outdoor temperature from room temperature
- B. Return-air temperature from supply-air temperature
- C. Supply-air temperature from return-air temperature
- D. Thermostat setting from outdoor temperature

83. The acceptable temperature-rise range is established by the:

- A. Utility company
- B. Furnace manufacturer
- C. Weatherization agency
- D. Building inspector

84. A temperature rise outside the manufacturer's specified range may indicate:

- A. Proper airflow
- B. Airflow or furnace performance problems
- C. Correct thermostat calibration
- D. Adequate insulation

85. Temperature rise should be measured after:

- A. The furnace has reached normal operating conditions
- B. The blower door has been removed
- C. The thermostat has been turned off
- D. Windows have been opened

Questions 86 thru 100 can be found in Section 7.3.2 – Measuring Room Pressure Differences

86. Measuring room pressure differences helps determine:

- A. Roof leakage
- B. Whether rooms are properly connected to the central return-air pathway
- C. Insulation depth
- D. Furnace efficiency

87. Room pressure measurements are typically made with:

- A. A thermometer
- B. A digital manometer
- C. A moisture meter
- D. A pressure pan

88. During room pressure testing, interior doors are generally:

- A. Removed
- B. Closed
- C. Locked open
- D. Replaced

89. Excessive room pressure indicates:

- A. Good return-air flow
- B. Restricted return-air pathways
- C. Proper duct sealing
- D. High attic ventilation

90. According to the Field Guide, room pressure should generally be:

- A. Less than or equal to 3 Pascals
- B. Less than 10 Pascals
- C. Greater than 5 Pascals
- D. Equal to outdoor pressure

91. If a room exceeds the recommended pressure limit, one corrective action is to:

- A. Replace the furnace
- B. Increase the return-air pathway
- C. Close additional supply registers
- D. Remove insulation

92. One method of increasing the return-air pathway is to:

- A. Install a transfer grille
- B. Replace windows
- C. Seal the supply duct
- D. Add roof vents

93. Another acceptable method is to install a:

- A. Ridge vent
- B. Jumper duct
- C. Plumbing vent
- D. Dryer vent

94. Door undercutting may be used to:

- A. Improve drainage
- B. Increase return-air flow
- C. Reduce ceiling insulation
- D. Improve window operation

95. Before selecting a pressure-relief method, technicians should:

- A. Replace the furnace
- B. Discuss options with the homeowner
- C. Install a new thermostat
- D. Remove floor insulation

96. To estimate the size of the required opening, technicians should:

- A. Measure duct diameter
- B. Slowly open the door until room pressure falls to 3 Pascals or less
- C. Measure ceiling height
- D. Remove the return grille

97. The measured door opening represents the minimum:

- A. Door width
- B. Net free opening area required
- C. Supply register size
- D. Duct diameter

98. After modifications are completed, technicians should:

- A. Paint the door
- B. Repeat the room pressure test
- C. Replace the thermostat
- D. Increase blower speed

99. Proper return-air pathways help ensure:

- A. Balanced airflow throughout the home
- B. Higher fuel consumption
- C. Greater duct leakage
- D. Increased roof ventilation

100. The primary objective of room pressure testing is to:

- A. Increase furnace output
- B. Verify that rooms have adequate return-air pathways and are not excessively pressurized
- C. Measure insulation density
- D. Test combustion efficiency

Questions 101 thru 106 can be found in Section 7.4 - Floor/Belly Insulation

101. The primary purpose of floor (belly) insulation is to:

- A. Reduce roof temperatures
- B. Reduce heat loss through the floor system
- C. Increase attic ventilation
- D. Protect the exterior siding

102. In many manufactured homes, the original floor insulation consists of:

- A. Loose cellulose
- B. Fiberglass blankets attached beneath the floor joists
- C. Spray polyurethane foam
- D. Rigid foam board

103. Typical manufactured-home floor joists are commonly:

- A. 2×4
- B. 2×6
- C. 2×10
- D. Steel I-beams

104. In homes with transverse floor joists, the main supply duct is generally attached to the:

- A. Roof trusses
- B. Bottom of the floor joists
- C. Exterior wall studs
- D. Ceiling joists

105. When insulating the belly cavity, technicians should avoid:

- A. Air sealing
- B. Overfilling or dense-packing the cavity
- C. Repairing damaged ductwork
- D. Inspecting the road barrier

106. The recommended installed density for fiberglass belly insulation is approximately:

- A. 0.5 lb/ft^3
- B. 0.75 lb/ft^3
- C. $1.25\text{--}1.75 \text{ lb/ft}^3$
- D. 3.0 lb/ft^3

Questions 107 thru 116 can be found in Section 7.4.1 - Preparations for Belly Insulation

107. Before insulating the belly, technicians should first verify that there are no:

- A. Missing shingles
- B. Water or sewer leaks
- C. Broken windows
- D. Damaged gutters

108. Any evidence of previous frozen pipes or water leaks should be:

- A. Ignored
- B. Discussed with the homeowner and documented
- C. Covered with insulation
- D. Painted

109. Which measure should normally be completed before installing belly insulation?

- A. Interior painting
- B. Duct sealing
- C. Window replacement
- D. Carpet installation

110. A ground vapor barrier may be installed primarily to:

- A. Increase the insulation R-value
- B. Provide a cleaner work surface and reduce ground moisture
- C. Strengthen the floor joists
- D. Support the duct system

111. If a ground vapor barrier is likely to trap standing water, it should:

- A. Be doubled
- B. Not be installed
- C. Be insulated
- D. Be sealed with mastic

112. Water pipes should be secured:

- A. Below the insulation
- B. Close to the floor joists
- C. Directly against the road barrier
- D. Next to the ground

113. Keeping water pipes near the floor helps keep them:

- A. Cooler during summer
- B. On the warm side of the thermal boundary
- C. Easier to replace
- D. Below the insulation

114. A dropped belly should be fastened to the floor joists to:

- A. Increase crawlspace ventilation
- B. Reduce the cavity volume before insulating
- C. Improve drainage
- D. Support plumbing

115. Existing holes in the road barrier should generally be:

- A. Left open
- B. Repaired unless they are being used for insulation access
- C. Enlarged
- D. Covered with fiberglass only

116. Large openings in the belly material should preferably be repaired using:

- A. Cardboard
- B. Insulated sheathing board, fiberboard, or reinforced mesh
- C. Roofing felt
- D. Plastic sheeting only

Questions 117 thru 119 can be found in Section 7.4.2 – Insulating the Belly from Underneath

117. The preferred method of insulating the belly is to:

- A. Remove the finished floor
- B. Blow insulation from underneath using a large-diameter fill tube
- C. Install fiberglass batts from inside the home
- D. Spray foam through the floor covering

118. The decision to insulate from underneath depends primarily on:

- A. The color of the siding
- B. Access beneath the manufactured home and site conditions
- C. The size of the windows
- D. The type of thermostat

119. Existing openings in the road barrier may be used:

- A. As permanent ventilation openings
- B. As insulation access points before being repaired
- C. Only for plumbing repairs
- D. Only for electrical wiring

Questions 120 thru 126 can be found in Section 7.4.3 – Rim Blow Through Rim Joists

120. Before drilling through a rim joist for insulation, technicians should verify that the rim joist is not:

- A. Painted
- B. A structural foundation-support component
- C. Insulated
- D. Constructed of wood

121. Rim joists may not be drilled when the floor joists are:

- A. 12 inches or greater on center
- B. 16 inches or greater on center
- C. 24 inches or greater on center
- D. 36 inches or greater on center

122. Drilling through a rim joist can be dangerous without:

- A. A hand saw and pry bar
- B. A good drill and sharp bit
- C. A pressure pan and manometer
- D. A caulk gun and staple gun

123. Technicians should not drill beneath doors because doing so may:

- A. Damage the siding
- B. Weaken the door threshold
- C. Restrict return airflow
- D. Damage the furnace duct

124. Technicians should avoid drilling directly through:

- A. Exposed rim joists
- B. Trim covering the rim joist
- C. Existing wooden plugs
- D. Belly patch material

125. Holes drilled in a rim joist should be sealed using:

- A. Plastic caps
- B. Wooden plugs
- C. Fiberglass batts
- D. Roofing cement

126. When possible, the rim-blow method should be replaced by the:

- A. Interior drill-and-blow method
- B. Wing-blow method
- C. Open-blow method
- D. Roof-edge method

Questions 127 thru 130 can be found in Section 7.4.4 - Wing Blow

127. The wing-blow method is a variation of:

- A. Sidewall stuffing
- B. Rim-joist blowing
- C. Open attic blowing
- D. Pressure-pan testing

128. The wing-blow method combines some advantages of blowing:

- A. Through the roof and wall
- B. From underneath and through the rim joist
- C. Through the ceiling and siding
- D. Through the floor and return duct

129. The floor cavity between the access hole and the installer should be insulated using:

- A. A shorter flexible fill tube
- B. A rigid metal duct
- C. A pressure pan
- D. A fiberglass batt only

130. When insulating from the wing or underneath, the preferred tool is a:

- A. Small vacuum hose
- B. Large-diameter fill tube
- C. One-inch rigid pipe
- D. Spray-foam nozzle

Questions 131 thru 136 can be found in Section 7.5 - Attic/Ceiling Insulation

131. Manufactured-home roof cavities usually contain existing:

- A. Cellulose insulation
- B. Fiberglass batts or blankets
- C. Spray polyurethane foam
- D. Rigid foam panels

132. Along the building edge, the available roof-cavity space may be only:

- A. 1 or 2 inches
- B. 4 or 5 inches
- C. 8 or 9 inches
- D. 12 or 14 inches

133. In homes with bowstring trusses, available insulation space near the center may exceed:

- A. 4 inches
- B. 6 inches
- C. 10 inches
- D. 24 inches

134. Lightweight sloped-roof trusses may provide up to approximately _____ of space at the center.

- A. 6 inches
- B. 12 inches
- C. 18 inches
- D. 2 feet

135. Manufactured-home roof insulation should be installed at a uniform density of approximately:

- A. 0.5-0.75 lb/ft³
- B. 1.25-1.75 lb/ft³
- C. 2.0-2.5 lb/ft³
- D. 3.0-3.5 lb/ft³

136. Crews should pay special attention to the attic edges because they are:

- A. Usually already over-insulated
- B. More difficult to insulate completely
- C. Always blocked by ductwork
- D. Required to remain uninsulated

**Questions 137 thru 139 can be found in
Section 7.5.1 – Preparing for Ceiling
Insulation**

137. Insulation must be held at least _____ away from recessed fixtures, fan housings, heater housings, and chimneys that are not IC-rated.

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

138. If accessibility restrictions prevent air sealing, the technician must:

- A. Cancel all insulation work
- B. Document the reason in the customer file
- C. Leave all roof cavities empty
- D. Replace the ceiling panel

139. Fill tubes used for ceiling insulation should be marked at:

- A. 6-inch increments
- B. 1-foot increments
- C. 2-foot increments
- D. 5-foot increments

**Questions 140 thru 142 can be found in
Section 7.5.2 – Blowing the Roof Cavity from
a Square Hole**

140. With customer approval, the recommended square roof-access opening is approximately:

- A. 4 inches square
- B. 6 inches square
- C. 10 inches square
- D. 16 inches square

141. After insulating through a square roof opening, the opening should first be patched with:

- A. Fiberglass insulation only
- B. Galvanized sheet metal sealed with roofing cement
- C. Plywood only
- D. Plastic sheeting

142. After the metal patch is installed, it should be covered with:

- A. Asphalt shingles
- B. Peel-and-seal butyl aluminum roofing material
- C. Housewrap
- D. Spray foam

**Questions 143 thru 148 can be found in
Section 7.5.3 – Blowing the Roof Cavity from
Round Holes**

143. The round-hole roof blowing method generally requires:

- A. Larger fill tubes
- B. Smaller-diameter fill tubes
- C. No fill tube
- D. Spray foam equipment

144. After insulation is installed through round holes, the openings are commonly sealed with:

- A. Wooden plugs
- B. Plastic plugs sealed with silicone and covered with peel-and-seal patches
- C. Fiberglass batts
- D. Roofing felt

145. Compared to square-hole roof blowing, the round-hole method generally requires:

- A. Fewer roof penetrations
- B. More roof penetrations
- C. No roof penetrations
- D. Larger access openings

146. Pitched roofs are most commonly found on:

- A. Single-wide manufactured homes
- B. Double-wide manufactured homes
- C. Park models only
- D. Modular garages

147. Pitched roof cavities generally provide:

- A. Less insulation space than flat roofs
- B. Greater insulation volume than flat roofs
- C. No room for insulation
- D. Only spray foam cavities

148. The recommended maximum installed insulation density for pitched roof cavities is approximately:

- A. 0.6 lb/ft³
- B. 1.25 lb/ft³
- C. 1.75 lb/ft³
- D. 2.5 lb/ft³

Questions 149 thru 151 can be found in Section 7.5.5 - Blowing the Roof Cavity from the Edge

149. Roof-edge blowing is practical when:

- A. Access exists along one long side of the home
- B. The roof has been removed
- C. The attic is completely open
- D. There is no roof overhang

150. Roof-edge blowing generally requires:

- A. Only a ladder
- B. Scaffolding
- C. A forklift
- D. A crane

151. After roof-edge insulation is complete, technicians should:

- A. Leave the roof edge open
- B. Carefully refasten and reseal the roof edge
- C. Install additional roof vents
- D. Remove the fascia

Questions 152 thru 155 can be found in Section 7.5.6 - Interior Drill-and-Blow

152. The interior drill-and-blow method is especially useful:

- A. Only during summer
- B. During poor weather or when roof access is impractical
- C. Only on flat roofs
- D. Only on new manufactured homes

153. Larger interior drill holes make it easier to:

- A. Install wiring
- B. Guide the fill tube toward the roof edge
- C. Remove insulation
- D. Install roof vents

154. Plastic plugs used after drill-and-blow should:

- A. Match the drilled hole diameter
- B. Be oversized
- C. Be made of wood
- D. Be permanently glued before insulation

155. When interior drill holes are aligned, they may be concealed with:

- A. Roofing felt
- B. Decorative trim
- C. Spray foam
- D. Metal flashing

Questions 156 thru 159 can be found in Section 7.6 – Sidewall Insulation

156. Many manufactured-home sidewalls are incompletely insulated, resulting in:

- A. Better ventilation
- B. Lower effective R-value due to convection and air leakage
- C. Greater structural strength
- D. Reduced moisture movement

157. Before beginning sidewall insulation, technicians should:

- A. Remove all cabinets
- B. Inform the customer about existing damage and possible installation damage
- C. Replace every electrical outlet
- D. Remove all siding

158. Before insulating sidewalls, loose interior wall paneling should be:

- A. Removed
- B. Reinforced with nails or screws as necessary
- C. Painted
- D. Covered with plastic

159. If unsafe electrical wiring is discovered in a wall cavity, technicians should:

- A. Continue insulating normally
- B. Skip insulating the affected wall and notify the energy auditor or site supervisor
- C. Cover the wiring with insulation
- D. Increase insulation density

Questions 160 thru 163 can be found in Section 7.6.1–7.6.3 – Siding Preparation, Sidewall Blowing, and Stuffing

160. During the sidewall stuffing technique, the preferred insulation is:

- A. Loose cellulose
- B. Fiberglass batt insulation encased in breathable polyethylene film
- C. Spray polyurethane foam
- D. Rigid foam board

161. Metal siding on most manufactured homes is installed:

- A. Horizontally
- B. Vertically
- C. Diagonally
- D. In overlapping shingles

162. During the wall-stuffing technique, technicians generally remove:

- A. The top row of siding
- B. The bottom two rows of screws
- C. Every siding screw
- D. The roof edge

163. During the sidewall blowing technique, technicians generally remove:

- A. Only the bottom row of screws
- B. Every screw
- C. Every other screw
- D. No screws

Questions 164 thru 167 can be found in Section 7.6.2 – Sidewall Blowing Technique

164. Sidewall blowing in manufactured homes is most similar to insulating:

- A. Crawlspace
- B. Sidewalls in site-built homes
- C. Cathedral ceilings
- D. Foundation walls

165. During sidewall blowing, technicians should avoid:

- A. Filling cavities completely
- B. Bulging or damaging wall panels
- C. Using fill tubes
- D. Inspecting electrical wiring

166. Sidewall insulation should be installed to provide:

- A. Random coverage
- B. Complete, uniform coverage at the proper density
- C. Loose fill at low density
- D. Coverage only around windows

167. According to the Field Guide, insulating the cavity above windows is generally:

- A. Required
- B. Optional and generally not required
- C. Mandatory for ENERGY STAR®
- D. Required only in cold climates

Questions 168 thru 169 can be found in Section 7.6.3 – Sidewall Stuffing Technique

168. The polyethylene surrounding fiberglass batts primarily helps the insulation:

- A. Increase its R-value
- B. Slide easily into the wall cavity
- C. Prevent all moisture movement
- D. Expand after installation

169. Some manufactured homes are poor candidates for the stuffing technique because of:

- A. Roof construction
- B. Wall obstructions within the cavity
- C. Crawlspace height
- D. Foundation type

Question 170 can be found in Section 7.7 – Air Sealing

170. For additional manufactured-home air sealing guidance, technicians should refer to:

- A. Chapter 2
- B. Chapter 1, Section 1.4
- C. Chapter 4
- D. Appendix A

**Questions 171 thru 174 can be found in
Section 7.8 – Combustion Appliance and Fuel
Distribution Safety**

171. For combustion appliance safety procedures, Chapter 7 directs technicians to:

- A. Chapter 2
- B. Chapter 3
- C. Chapter 5, Section 5.8
- D. Chapter 6

172. When a water heater has an exterior access door, pressure-testing hoses should preferably be routed:

- A. Through the roof
- B. Through an interior pathway
- C. Under the road barrier
- D. Through the supply duct

173. Routing pressure hoses through the exterior access door should generally be:

- A. The preferred method
- B. Avoided unless no interior pathway is available
- C. Required on every manufactured home
- D. Used only during winter

174. Gas leak inspections should include:

- A. Only visible appliances
- B. Accessible gas piping beneath the manufactured home
- C. Only the furnace
- D. Only the water heater

**Questions 175 thru 176 can be found in
Section 7.10 and 7.10.1 – Water Heater
Replacement and Gas Water Heater
Installations**

175. Replacement water heaters installed in manufactured homes shall be:

- A. Approved for use only in site-built homes
- B. Approved for use in manufactured homes
- C. Electric models only
- D. Installed without regard to manufacturer requirements

176. When replacing a gas water heater, technicians must measure and adjust the gas pressure according to:

- A. Local utility preference only
- B. Manufacturer's instructions
- C. The homeowner's preference
- D. The thermostat setting

**Questions 177 thru 180 can be found in
Section 7.11 – Refrigerator Replacement;
Section 7.12 – Mechanical Ventilation;
Section 7.13 – Window Replacement;
Section 7.14 – Door Replacement**

177. Replacement refrigerators installed through the Weatherization Program should primarily be selected based on:

- A. Cabinet color
- B. Energy efficiency and compliance with program requirements
- C. Ice maker capacity
- D. Freezer size only

178. Mechanical ventilation installed in a manufactured home should:

- A. Operate according to manufacturer instructions and applicable program requirements
- B. Vent into the attic
- C. Be connected to the return-air duct
- D. Operate only during winter

179. When replacing a manufactured-home window, the installer should ensure the replacement window is:

- A. Installed square, plumb, sealed against air and water leakage, and operates properly
- B. Larger than the original opening
- C. Installed without sealing to allow ventilation
- D. Fastened with nails only

180. When replacing a manufactured-home door, the installer must verify that the completed installation:

- A. Opens, closes, latches, and locks properly after being installed plumb, level, and sealed against air and water intrusion
- B. Swings inward regardless of the original design
- C. Requires no caulking around the frame
- D. Uses expanding foam until the frame becomes tight

