



COURSE 16191

Construction Standards

Exam Material

Uscontractorlicense LLC

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

Course Outline

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

Outline of Course

SPS 321.01 Scope.

Subchapter II – Design Criteria

- SPS 321.02 Loads and materials.
- SPS 321.03 Exits.
- SPS 321.035 Interior circulation.
- SPS 321.04 Stairways and elevated areas.
 - SPS 321.042 Ladders.
 - SPS 321.045 Ramps.
- SPS 321.05 Natural light and natural ventilation.
 - SPS 321.06 Ceiling height.
- SPS 321.07 Attic and crawl space access.
- SPS 321.08 Fire separation and dwelling unit separation.
 - SPS 321.085 Fireblocking.
 - SPS 321.09 Smoke detectors.
 - SPS 321.095 Automatic fire sprinklers.
- SPS 321.10 Protection against decay and termites.
 - SPS 321.11 Foam plastic.
- SPS 321.115 Installation of elevators or dumbwaiters.

Subchapter III – Excavations

- SPS 321.12 Grade.
- SPS 321.125 Erosion control and sediment control.
- SPS 321.126 Storm water management.
- SPS 321.13 Excavations adjacent to adjoining property.
- SPS 321.14 Excavations for footings and foundations.

Subchapter IV – Footings

- SPS 321.15 Footings.
- SPS 321.16 Frost protection.
- SPS 321.17 Drain tiles.

Subchapter V – Foundations

- SPS 321.18 Foundations.

Subchapter VI – Floors

- SPS 321.19 Floor design.
- SPS 321.20 Concrete floors.
 - SPS 321.203 Garage floors.
- SPS 321.205 Wood floors in contact with the ground.
 - SPS 321.21 Precast concrete floors.
 - SPS 321.22 Wood frame floors.
 - SPS 321.225 Decks.

Subchapter VII – Walls

SPS 321.23 Wall design.
SPS 321.24 Exterior covering.
SPS 321.25 Wood frame walls.
SPS 321.26 Masonry walls.

Subchapter VIII – Roof and Ceilings
SPS 321.27 Roof design.
SPS 321.28 Weather protection for roofs.

Subchapter IX – Fireplace Requirements
SPS 321.29 Masonry fireplaces.
SPS 321.30 Masonry chimneys.
SPS 321.32 Factory–built fireplaces.

Subchapter X – Construction in Floodplains
SPS 321.33 Construction in floodplains.
SPS 321.34 Construction in coastal floodplains.

Subchapter XI – Installation of Manufactured Homes
SPS 321.40 Installation 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 sheet(s) 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 graded 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

Questions 1 to 7 (Refer to Review Materials SPS 321.02 Loads and Materials)

1. _____. Every dwelling shall be designed and constructed to support the actual dead load, live loads and wind loads acting upon it without exceeding the allowable stresses of the material. The construction of buildings and structures shall result in a system that provides a complete load path capable of transferring all loads from point of origin through the load resisting elements to the foundation.

- a. Dead Loads
- b. Live Loads
- c. Design Load
- d. Snow Loads

2. _____. Dwellings shall be designed and constructed to withstand either a horizontal and uplift pressure of 20 pounds per square foot acting over the surface area or the wind loads determined in accordance with ASCE 7-05, *Minimum Design Loads for Buildings and Other Structures*.

Note: ASCE 7-05 allows for substantial reduction from 20 psf as applied to the surface area.

- a. Dead Loads
- b. Live Loads
- c. Wind Loads
- d. Snow Loads

3. _____. Roofs shall be designed and constructed to support the minimum snow loads listed on the zone map. The loads shall be assumed to act vertically over the roof area projected upon a horizontal plane.

- a. Snow Loads
- b. Wind Loads
- c. Dead Loads
- d. Live Loads

4. **STRUCTURAL STANDARDS. General. Design, construction, installation, practice and structural analysis shall conform to the following nationally recognized standards.**

Course 16191 Construction Standards Exam

- a. True
- b. False

5. **STRUCTURAL STANDARDS. Wood. 3. Sawn lumber that is not graded in accordance with the standards under subd. 1., shall use the NDS published allowable design stresses for the lumber species using grade number 3 when used for _____ and may use grade number 1 when used for beams, posts or timbers.**

- a. Studs
- b. Stringers
- c. Rafters or joists
- d. All of the above

6. **STRUCTURAL STANDARDS. Whole logs. Dwellings constructed of whole logs shall conform to ICC 600, Standard on the Design and Construction of Log Structures.**

Note: This standard requires the minimum log diameter to be 12 inches.

- a. True
- b. False

7. **STRUCTURAL STANDARDS. Masonry. The design and construction of masonry shall conform to the following standards:**

1. **ACI 530, Building Code Requirements for Masonry Structures.**
2. **ACI 530.1, Specification for Masonry Structures.**

- a. True
- b. False

Questions 8 to 23 (Refer to Review Materials SPS 321.03 Exits and 321.035 Interior Circulation)

8. **EXITS FROM THE FIRST FLOOR. (b) Both exits shall discharge to grade and may not go through a garage. This exit may include interior or exterior stairs.**

- a. True
- b. False

9. EXITS FROM THE FIRST FLOOR. (a) Except as allowed under par. (h), every dwelling unit shall be provided with at least ____ exit doors accessible from the first floor.

- a. one
- b. two
- c. three
- d. none of the above

10. EXITS ABOVE THE SECOND FLOOR (b) A second stairway or ramp exit is not required for habitable areas on a third floor that meet all of the following requirements:

1. The habitable area consists of a single room.

Note: Non-habitable areas, such as closets and bathrooms may be partitioned off.

2. The room is not used for sleeping.

3. The habitable area has a floor area of 400 square feet or less.

4. There is at least one egress window meeting the requirements of sub. (6) in the habitable area.

- a. True
- b. False

11. EXITS ABOVE THE SECOND FLOOR. (a) Except as provided under pars. (b) and (c), each habitable floor above the second floor shall be provided with at least 2 exits that meet all of the following requirements:

1. The exits shall be _____ that lead to the second floor or discharge to grade.

2. The exits shall be located such that an exit is accessible to the second floor if another exit is blocked.

- a. ramps
- b. stairways
- c. stairways or ramps
- d. none of the above

12. EXITS FROM LOFTS. At least one stairway exit shall be provided, to the floor below, for a loft exceeding _____ square feet in area. At least one stairway or ladder exit shall be provided to the floor below for a loft, 400 square feet or less, in area.

- a. 300
- b. 400
- c. 450
- d. 500

13. EXITS ABOVE THE SECOND FLOOR (c) A second stairway or ramp exit is required for habitable areas on a third floor that meet all of the following requirements:

1. The dwelling is fully sprinklered in accordance with NFPA 13R or NFPA 13D.

2. If a required exit includes an attached garage, the garage shall be sprinklered.

- a. True
- b. False

14. EXITS FROM BASEMENTS AND GROUND FLOORS.

Basement and ground floors used for sleeping.

1. Basements and ground floors used for sleeping shall be provided with at least _____.

- a. one exit
- b. two exits
- c. one exit and one small window
- d. Three exits

15. WINDOWS USED FOR EXITING (b) 1. The nominal size of the net clear window opening shall be _____ irrespective of height or width. Nominal dimensions shall be determined by rounding up fractions of inches if they are 1/2-inch or greater or rounding down fractions of inches if they are less than 1/2-inch.

- a. not more than 20 inches by 24 inches
- b. at least 22 inches by 24 inches
- c. at least 20 inches by 24 inches
- d. not more than 24 inches by 20 inches

16. WINDOWS USED FOR EXITING. 5. a. Ladders or other stairs used to comply with subd. 4. May infringe on the required area of the areaway by a maximum of 6 inches. **b.** Ladder rungs shall have a minimum inside width of at least 12 inches and shall project at least 3 inches from the wall behind the ladder.

c. Ladder rungs shall be able to support a concentrated load of 200 pounds.

d. Ladder rungs shall have a maximum rise of 12 inches between rungs and shall extend to within 12 inches of exterior grade.

- a. True
- b. False

17. WINDOWS USED FOR EXITING (d) 1. For any window used for exiting, the lowest point of clear opening shall be no more than _____ above the floor.

- a. 30 inches
- b. 48 inches
- c. 50 inches
- d. 60 inches

18. BALCONIES: Balconies which are required for exit purposes shall also comply with all of the following requirements:

1. The balcony guardrail shall terminate no more than 46 inches above the floor level of the balcony.

2. The floor level of the balcony shall be no more than _____ above the grade below.

3. The floor of the balcony shall have minimum dimensions of 3 feet by 3 feet. The guard and its supports may infringe on the dimensions of the required area no more than 4.5 inches.

- a. 10 feet
- b. 15 feet
- c. 18 feet
- d. 20 feet

19. TWO–FAMILY DWELLINGS. In a 2–family dwelling, each dwelling unit _____ provided with exits in compliance with this section.

- a. shall be
- b. can be
- c. may be
- d. could be

20. DOORS USED FOR EXITING. (a) Doors used for exiting from a dwelling shall meet the following dimensions:

1. At least one exit door shall be a swing-type door at least 80 inches high by _____ wide.

2. Except as allowed under subsd. 3. And 4., other required exit doors shall be at least 76 inches high by 32 inches wide.

3. Where double doors are used as a required exit, each door leaf shall provide a clear opening at least 30 inches wide and be at least 76 inches high.

4. Where sliding doors are used as a required exit, the clear opening shall be at least 29 inches wide and be at least 76 inches high.

- a. 29 inches
- b. 32 inches
- c. 34 inches
- d. 36 inches

21. HALLWAYS. (a) Except as allowed under par. (b), the clear width of hallways shall be at least 36 inches.

(b) The following are allowed to infringe on the required clear width of a hallway:

1. Door hardware and finish trim.

2. Handrails may infringe into the minimum width of a hallway up to 4 1/2 inches on each side.

3. Heating registers may infringe into the minimum width of a hallway up to 4 1/2 inches and no part of the register may be more than 38 inches above the floor.

4. Ducts, pipes, light fixtures, structural features, and corner treatments that are within 84 inches of the floor may infringe into the minimum width of a hallway by a maximum of 4 1/2 inches on each side.

5. Unlimited infringements are allowed in a hallway more than 84 inches above the floor.

- a. True
- b. False

22. DOORS AND OPENINGS. All doors and openings to the following areas shall be _____ 80 inches high and provide either a net clear opening width of 30 inches or be a 32–inch door:

(a) Except as provided under pars. (b) and (c), all entrances into common use areas.

(b) At least 50% of the bedrooms.

(c) 1. At least one full bathroom, including doors or openings to a sink, toilet and tub or shower. If this bathroom is accessible only through a bedroom, the bedroom door shall meet the minimum width requirements of this section.

2. If one or more full bathrooms are provided on the first floor, the bathroom meeting the requirements under this section shall be on the first floor.

Note: This section does not require a full bathroom on the first floor.

- a. at least
- a. no more than
- b. a maximum of
- c. none of the above

23. KITCHENS. (a) There shall be at least 20 inches of clearance between a wall, a permanently— installed kitchen island, permanently—installed kitchen cabinets and the following kitchen appliances, if provided:

1. A range, cook top or oven.
2. A sink, refrigerator or freezer.

(b) Measurements shall be taken from the face of the wall, island, cabinet or appliance, ignoring knobs and handles.

- a. True
- b. False

Questions 24 to 59 (Refer to Review Materials SPS
321.04 Stairways and Elevated Areas)

24. SCOPE. (b) Exceptions. The following stairways are not required to comply with the requirements of this section:

1. Stairways leading to non—habitable attics or crawl spaces.
2. Non—required stairways connecting the basement directly to the exterior of the structure without communicating with any other part of the structure.

- a. True
- b. False

25. SCOPE. (a) General. Except as provided under par. (b), the following stairways shall conform to the requirements of this section.

1. Every interior and exterior stairway attached to, or supported by any part of the structure covered under this code.
2. Tub access steps, unless they are an integral part of an approved plumbing product.

(b) Exceptions. The following stairways are not required to comply with the requirements of this section:

1. Stairways leading to non—habitable attics or crawl spaces.
2. Non—required stairways connecting the basement directly to the exterior of the structure without communicating with any other part of the structure.

- a. True
- b. False

26. DETAILS. (a) Width. (2) Spiral staircases shall be at least _____ inches wide measured from the outer edge of the supporting column to the inner edge of the handrail.

- a. 26 inches
- b. 30 inches
- c. 32 inches
- d. 36 inches

27. DETAILS. (b) Riser height. Except for spiral staircases under subd. 2, risers may not exceed _____ in height measured vertically from tread to tread.

- a. 7.5 inches
- b. 8 inches
- c. 8.5 inches
- d. 9 inches

28. DETAILS. Tread depth. 1. 'Rectangular treads.' Rectangular treads shall have minimum tread depth of _____ measured horizontally from nosing to nosing.

- a. 8.5 inches
- b. 9 inches
- c. 9.5 inches
- d. 10 inches

29. DETAILS. Winder treads in series. Two or more winder treads may be placed immediately adjacent to each other anywhere in a stairway provided both of the following conditions are met:

a. The winder treads shall have a minimum tread depth of _____ measured at a point 12 inches from the narrow end of the tread.

- a. 6 inches
- b. 7 inches
- c. 8 inches
- d. 9 inches

30. DETAILS. 'Spiral staircase treads.' Spiral staircase treads shall have a _____ from nosing to nosing measured at a point 12 inches from the outer edge of the center column.

- a. minimum tread depth of 7 inches
- b. maximum tread depth of 7 inches
- c. minimum tread depth of 9 inches
- d. maximum tread depth of 9 inches

31. DETAILS. (b) Riser height. Risers in spiral staircases may not exceed _____ in height measured vertically from tread to tread.

- a. 7.5 inches
- b. 8 inches
- c. 9 inches
- d. 9.5 inches

32. DETAILS. Uniformity. 1. Within a stairway flight, the greatest tread depth may not exceed the smallest tread depth by more than 3/8 inch and the greatest riser height may not exceed the smallest riser height by more than 3/8 inch.

- a. True
- b. False

33. DETAILS. Uniformity. 2. The allowed variation in uniformity under subd. 1. may not be used to exceed the maximum riser height under par. (b) or to decrease the minimum tread depth under par. (c).

- a. True
- b. False

34. DETAILS. 4. 'Individual winder treads.' a. An individual winder tread may be placed between rectangular treads or at the end of a flight of rectangular treads provided the tread depth, measured at a point 12 inches from the narrow end, is equal to the tread depth of the rectangular steps in the flight.
b. There may be more than one individual winder tread in a stairway or in a flight of stairs.
c. Winder treads may be used on a straight stairway.

- a. True
- b. False

35. DETAILS. (d) Headroom. The headroom clearance _____ maintained over an intermediate landing.

- a. may be
- b. can be
- c. could be
- d. shall be

36. DETAILS. (d) Headroom. Stairways shall be provided with a minimum headroom clearance of _____ measured vertically from a line parallel to the nosing of the treads to the ceiling, soffit or any overhead obstruction directly above that line.

- a. 6 feet
- b. 76 inches
- c. 6.5 feet
- d. 80 inches

37. DETAILS. (f) Open risers. Stairways with open risers shall be constructed to prevent the through passage of a sphere with a diameter of _____ or larger between any 2 adjacent treads.

- a. 4 inches
- b. 4.5 inches
- c. 5 inches
- d. 6 inches

38. HANDRAILS AND GUARDS (c) Guards. 1. 'Application.' a. All openings between floors, and open sides of landings, platforms, balconies or porches that are more than _____ above grade or a floor shall be protected with guards.

- a. 16 inches
- b. 20 inches
- c. 24 inches
- d. 30 inches

39. HANDRAILS AND GUARDS. General. 1. A flight of stairs with more than _____ shall be provided with at least one handrail for the full length of the flight.

- a. 2 risers
- b. 3 risers
- c. 4 risers
- d. 6 risers

40. HANDRAILS AND GUARDS. General. 3.a. Except as provided in subd. 3. b., guards shall be constructed to prevent the through—passage of a sphere with a diameter of _____, when applying a force of 4 pounds.

b. The triangular area formed by the tread, riser and bottom rail shall have an opening size that prevents the through—passage of a sphere with a diameter of 6 inches, when applying a force of 4 pounds.

- a. 4 3/8 inches
- b. 6 1/8 inches
- c. 8 1/2 inches
- d. 10 inches

41. HANDRAILS AND GUARDS. General. 3.c. _____ or similar materials used in guard infill shall be strung with maximum openings of 3 1/2 inches with vertical supports a maximum of 4 feet apart.

- a. Rope
- b. Cable
- c. a. and b.
- d. None of the above

42. HANDRAILS AND GUARDS. General. 4.a Handrails shall be designed and constructed to withstand a _____ load applied in any direction.

- a. 150 pound
- b. 175 pound
- c. 200 pound
- d. 225 pound

43. HANDRAILS AND GUARDS. Handrails. 1. 'Height.' Handrails shall be located at least 30 inches, but no more than _____ above the nosing of the treads, except as provided in subds. 1. b. to d. Measurement shall be taken from the hard-structural surface beneath any finish material to the top of the rail. Variations in uniformity are allowed only when a rail contacts a wall or newel post or where a turnout or volute is provided at the bottom tread.

- a. 36 inches
- b. 38 inches
- c. 40 inches
- d. 42 inches

44. HANDRAILS AND GUARDS. (a) General. 5. Exterior _____ shall be constructed of metal, decay resistant or pressure—treated wood, or shall be protected from the weather.

- a. handrails
- b. guards
- c. handrails and guards
- d. none of the above

45. HANDRAILS AND GUARDS. Handrails. 2. Clearance The clearance between a handrail and the wall surface shall be _____.

- a. at least 1 inch.
- b. at least 1.5 inches.
- c. no more than 2 inches.
- d. at least 2 inches.

46. HANDRAILS AND GUARDS (b) Handrails 5. 'Size and configuration.' Handrails shall be symmetrical about the vertical centerline to allow for equal wraparound of the thumb and fingers.

- a. symmetrical
- b. asymmetrical
- c. unbalanced
- d. none of the above

47. DETAILS. (a) Width. Handrails and associated trim may project a maximum of _____ inches into the required width at each side of the stairway.

- a. 2 inches
- b. 3.5 inches
- c. 4 inches
- d. 4.5 inches

48. HANDRAILS AND GUARDS. Handrails. 6. Continuity. Handrails shall be continuous for the entire length of the stairs except in any one of the following cases:

1. A handrail may be discontinuous at an intermediate landing.
2. A handrail may have newel posts.
3. A handrail may terminate at an intermediate wall provided the lower end of the upper rail is returned to the wall or provided with a flared end, the horizontal offset between the 2 rails is no more than 12 inches measured from the center of the rails, and both the upper and lower rails can be reached from the same tread without taking a step.

- a. #1 only
- b. #2 only
- c. # 3 only
- d. All the above...1, 2 and 3

49. HANDRAILS AND GUARDRAILS. 1. 'Application.' a. All openings between floors, and open sides of landings, platforms, balconies or porches that are more than _____ above grade or a floor shall be protected with guardrails.

- a. 16 inches
- b. 20 inches
- c. 24 inches
- d. 30 inches

50. HANDRAILS AND GUARDRAILS. For exterior applications, the 24 inch vertical measurement shall be taken from the lowest point within 2 feet horizontally from the edge of the deck, landing, porch or similar structure.

- a. True
- b. False

51. HANDRAILS AND GUARDS. General. 2. Guards shall be provided on all open sides of stairs consisting of more than 3 risers and on all open sides of areas that are elevated more than _____ above the floor or exterior grade.

Note: A handrail provided at 30 to 38 inches above the tread nosing meets the height requirement for a guard on a stairway.

- a. 20 inches
- b. 22 inches
- c. 24 inches
- d. 26 inches

52. LANDINGS. (a) Intermediate Landings. 3. Curved or irregular landing shall have a radius of at least _____.

- a. 30 inches
- b. 32 inches
- c. 34 inches
- d. 36 inches

53. LANDINGS. (a) Intermediate landings. A level intermediate landing shall be provided in any stairway with a height of _____.

- a. 8 feet or more
- b. 10 feet or more.
- c. 12 feet or more.
- d. 14 feet or more.

54. LANDINGS. (a) Intermediate landings.4. Curved or irregular landings shall have a minimum straight line measurement of _____ between the nosing of the 2 connecting treads measured at a point 18 inches from the narrow end of the landing measured along the nosing of the 2 treads.

- a. 20 inches
- b. 24 inches
- c. 26 inches
- d. 28 inches

55. LANDINGS. Exterior landings. The exterior landing, platform, or sidewalk at an exterior doorway shall be located a _____ below the interior floor elevation, be sloped away from the doorway at a minimal rate that ensures drainage, and have a length of at least 36 inches in the direction of travel out of the dwelling.

- a. minimum of 4 inches
- b. maximum of 4 inches
- c. maximum of 8 inches
- d. minimum of 8 inches

56. LANDINGS. (c) Doors at landings. Except as provided in subds. 1. to 3. and par. (d), level landings shall be provided on each side of any door located at the top or base of a stair, regardless of the direction of swing. In the following exceptions, a stairway between a dwelling and an attached garage, carport or porch is considered to be an interior stair:

1. A landing is not required between the door and the top of interior stairs if the door does not swing over the stairs.

2. A landing is not required between the door and the top of an interior stairs of 1 or 2 risers regardless of the direction of swing.

3. A landing is not required between a sliding glass door or an in-swinging glass door and the top of an exterior stairway of 3 or fewer risers.

- a. True
- b. False

57. HANDRAILS AND GUARDS. Doors and Landings 3. A landing is required between a sliding glass door or an in-swinging glass door and the top of an exterior stairway of 5 or fewer risers.

- a. True
- b. False

58. HANDRAILS AND GUARDS. Guards. 2. 'Height.' Guards shall extend to at least _____ above the floor or to the underside of a stair handrail complying with s. SPS 321.04 (3) (b). Measurement shall be taken from the hard-structural surface beneath any finish material to the top of the guard.

- a. 30 inches
- b. 36 inches
- c. 40 inches
- d. 48 inches

59. LANDINGS. (b) Landings at the top and base of stairs. A level landing shall be provided at the _____ of every stairs except as provided in par. (d). The landing shall be at least as wide as the treads and shall measure at least 3 feet in the direction of travel.

- a. top
- b. base
- c. top and base
- d. none of the above

Questions 60 to 66 (Refer to Review Materials SPS
321.042 Ladders)

60. Ladders shall be designed to withstand loads of at least _____.

- a. 150 pounds
- b. 175 pounds
- c. 200 pounds
- d. 250 pounds

61. Rungs may only be used for ladders with a pitch range of 75degree to 90 degrees. Rungs shall be at least _____ in diameter for metal ladders and 1.5 inches for wood ladders. All rungs shall be uniform in dimension.

- a. 1 inch
- b. 1.5 inches
- c. 2 inches
- d. 2.5 inches

62. Open handrails may be provided with intermediate rails or an ornamental pattern such that a sphere with a diameter of 9 inches or larger cannot pass through.

- a. True
- b. False

63. The width of the ladder shall be a minimum of 20 inches wide and a maximum of _____ wide.

- a. 28 inches
- b. 30 inches
- c. 32 inches
- d. 36 inches

64. Handrails shall be located so the top of the handrail is at least 30 inches, but not more than _____, above the nosing of the treads.

- a. 34 inches
- b. 38 inches
- c. 42 inches
- d. 48 inches

65. The ladder shall have a minimum clearance of at least _____ on either side of the center of the tread.

- a. 10 inches
- b. 12 inches
- c. 14 inches
- d. 15 inches

66. For ladders with less than a 65° pitch the vertical clearance above any tread or rung to an overhead obstruction shall be at least 7 feet 4 inches measured from the leading edge of the tread or rung.

- a. True
- b. False

Questions 67 to 70 (Refer to Review Materials SPS 321 .045 Ramps)

67. Ramps shall not have a gradient greater than 1 in 8 or one foot of rise in 8 feet of run. Walkways with gradients less than 1 in 20 or one foot of rise in 20 feet of run are _____ to be ramps.

- a. not considered
- b. considered
- c. thought
- d. treated

68. A level landing shall be provided at the top, at the foot and at any change in direction of the ramp. The landing shall be at least as wide as the ramp and shall measure at least _____ in the direction of travel.

- a. 1 foot 6 inches
- b. 2 feet
- c. 2 feet 6 inches
- d. 3 feet

69. Ramps shall have a slip resistant surface and shall have a _____ measured between handrails.

- a. maximum width of 36 inches
- b. minimum width of 36 inches
- c. maximum width of 40 inches
- d. minimum width of 40 inches

70. Open-sided ramps shall have the area below the handrail protected by intermediate rails or an ornamental pattern to prevent the passage of a sphere with a diameter of _____ when applying a force of 4 pounds, except as provided in subd. 2.

- a. 4 3/8 inches
- b. 4 6/8 inches
- c. 7 2/3 inches
- d. 8 3/8 inches

Questions 71 to 74 (Refer to Review Materials SPS 321.05 Natural Light and Natural Ventilation)

71. Natural ventilation shall be provided to each habitable room by means of openable doors, skylights or windows. The net area of the openable doors, skylights or windows shall be _____ of the net floor area of the room, except as provided in subd. 2.

- a. at least 3.5%
- b. at least 4.5 %
- c. no more than 3.5%
- d. no more than 4.5%

72. (am) Except as provided in par. (bm), glazing shall consist of safety glass meeting the requirements of either 16 CFR Part 1201 or ANSI Z97.1 when installed in any of the following locations:

1. In any sidelight or glazing adjacent to a door, that meets all of the following:

- a. The nearest point of the glazing is within 2 feet of the door when the door is in the closed position.**
- b. The nearest point of the glazing is within 5 feet of the floor.**
- c. The plane of the glazing is within 30 degrees of the plane of the door when the door is in the closed position.**

- a. # 1 a. only
- b. # 1 b. only
- c. # 1 c. only
- d. # 1 a., 1 b., and 1 c.

73. Except as provided in par. (bm), glazing shall consist of safety glass meeting the requirements of both 16 CFR Part 1201 or ANSI Z97.1 when installed in any of the following locations:

2. In any wall where the glazing is within 7 feet vertically of the lowest drain inlet and within 5 feet horizontally of the nearest part of the inner rim of a bathtub, hot tub, shower, spa or whirlpool appliance.

- a. True
- b. False

74. (a) Natural Ventilation. Balanced mechanical ventilation may be provided in lieu of openable exterior doors, skylights or windows provided the system is capable of providing _____ per hour of fresh outside air while the room is occupied. Infiltration may not be considered as make-up air for balancing purposes.

- a. at least one air change
- b. at least two air changes
- c. not more than one air change
- d. not more than two air changes

Questions 75 to 82 (Refer to Review Materials SPS 321.06 Ceiling Height; SPS 321.07 Attic and Crawl Space Access; SPS 321.08 Fire Separation and Dwelling Unit Separation)

75. CRAWL SPACES. Crawl spaces with _____ of clearance or more between the crawl space floor and the underside of the house floor joist framing shall be provided with an access opening of at least 14 by 24 inches.

- a. 12 inches
- b. 16 inches
- c. 18 inches
- d. 24 inches

76. ATTIC. Attics with 150 or more square feet of area and 30 or more inches of clear height between the top of the ceiling framing and the bottom of the rafter or top truss chord framing shall be provided with an access opening of _____, accessible from inside the structure.

- a. at least 10 X 24 inches
- b. at least 12 X 24 inches
- c. at least 14 X 24 inches
- d. at least 16 X 24 inches

77. FIRE SEPARATION. Attached garages. 2. For all methods listed under subd. 1., drywall joints shall comply with one of the following:

- a. Joints shall be taped or sealed.**
- b. Joints shall be fitted so that the gap is no more than 1/20-inch with joints backed by either solid wood or another layer of drywall such that the joints are staggered.**

Note: 1/20-inch is approximately the thickness of a U.S. dime.

- a. True
- b. False

78. FIRE SEPARATION. Doors. 1. The door and frame assembly between the dwelling unit and an attached garage can be labeled by an independent testing agency as having a minimum fire-resistive rating of 20 minutes. The test to determine the 20-minute rating is required to include the hose stream portion of the test.

Note: Acceptable tests for fire rating of door assemblies include ASTM E-152, UL 10B, and NFPA 252.

- a. True
- b. False

79. FIRE SEPARATION. Other openings. 1. Access openings in fire separation walls or ceilings shall be protected in one of the following ways:

a. The opening is protected with a material that has a finish rating of at least 20 minutes.

b. The opening is protected in the same way as the wall or ceiling where the opening is located.

- a. True
- b. False

80. DWELLING UNIT SEPARATION. Walls. Walls in the dwelling unit separation shall be protected by not less than one layer of 5/8-inch Type X gypsum wallboard or 2 layers of 1/2-inch gypsum wallboard or equivalent on each side of the wall with joints in compliance with sub. (1)(a) 2.

- a. True
- b. False

81. DWELLING UNIT SEPARATION. Attic separation. Dwelling units with attic space that extends over one of the units shall be separated in accordance with one of the following:

1. 'Complete separation.' The units shall be provided with wall construction under par. (d) that cannot extend all the way to the underside of the roof deck.

2. 'Vertical and horizontal separation.'

a. The units shall be provided with wall construction under par. (d) that extends to the dwelling unit ceiling and ceiling construction under par. (e).

b. Dwelling units using this method of separation shall not provide attic draft stopping under par. (f) that extends all the way to the underside of the roof deck above and in line with the separation wall.

- a. True
- b. False

82. DWELLING UNIT SEPARATION. Draft stopping for concealed roof spaces and attics.

1. _____ shall be draft stopped above and in line with the separation wall.

2. Acceptable draft stopping materials include:

a. 3/8-inch wood structural panel.

b. 1/2-inch gypsum board.

- a. Attic areas
- b. Mansards and overhangs
- c. Other concealed roof spaces
- d. All of the above

Questions 83 to 86 (Refer to Review Materials SPS 321.085 Fireblocking; SPS 321.09 Smoke Detectors and SPS 321.095 Automatic Fire Sprinklers)

83. SMOKE DETECTORS. (5) For envelope dwellings, at least _____ smoke alarms shall be placed in the air passageways. The alarms shall be placed as far apart as possible.

- a. one
- b. two
- c. three
- d. four

84. SMOKE DETECTORS. (2) (a) Except for dwellings with no electrical service, smoke detectors required by this section shall be continuously powered by the house electrical service, and shall be interconnected so that activation of one detector will cause activation of all detectors.

Note: Wireless interconnectivity is permitted under this paragraph.

(b) Dwellings with no electrical service shall be provided with battery-powered smoke detectors in the locations under sub. (1). Interconnection and battery-backup are not required in these dwellings.

- a. True
- b. False

85. FIREBLOCKING LOCATIONS. Fireblocking shall be provided in all of the following locations:

- (a) In concealed spaces of walls and partitions, including furred spaces, at the ceiling and floor levels.
- (b) At all interconnections between concealed vertical and horizontal spaces including the attachment between a carport and a dwelling.
- (c) In concealed spaces between stair stringers at the top and bottom of the run and at any intervening floor level.
- (d) At all openings around wires, cables, vents, pipes, ducts, chimneys and fireplaces at ceiling and floor level.

- a. (b) and (d)
- b. (a), (b), (c) and (d)
- c. (a), (b) and (d)
- d. (a), (b), and (c)

86. AUTOMATIC FIRE SPRINKLERS. (1) Except as provided in subs. (2) and (3), the design, installation, testing and maintenance of automatic fire sprinklers shall conform to NFPA 13D.

(2) (a) The requirements of NFPA 13D sections 6.3 (4), 8.1.3 and 8.6 are not included as part of this code.

(b) Fire department connections are prohibited in multipurpose piping systems.

(3) (a) Limited area automatic fire sprinkler systems are allowed in dwellings.

(b) 1. A limited area automatic fire sprinkler system shall add the following wording to the warning sign required in 6.3(5) of NFPA 13D: "The number and location of sprinklers in this system does not conform to NFPA 13D."

- a. True
- b. False

87. PROTECTION AGAINST DECAY AND TERMITES. (1) Wood used in any of the applications under this section shall meet all of the following requirements:

a. The wood shall be labeled and pressure treated with preservative in accordance with an AWPA standard or shall be naturally durable and decay-resistant or shall be engineered to be decay resistant.

b. The wood shall be pressure treated with preservative or shall be naturally termite-resistant unless additional steps are taken to make the wood termite-resistant.

- a. True
- b. False

88. CARBON MONOXIDE ALARMS (2) NEW CONSTRUCTION.

(a) *General.* Except as provided in sub. (4), listed and labeled carbon monoxide alarms can be installed and maintained in accordance with s. 101.647 (2) to (6), Stats., in one and 2-family dwellings, for which building permit applications were made or construction commenced on or before February 1, 2019.

- a. True
- b. False

89. PROTECTION AGAINST DECAY AND TERMITES. (4) All pressure-treated wood and plywood shall be identified by a quality mark or certificate of inspection of an approved inspection agency which maintains continued supervision, testing and inspection over the quality of the product.

Note: Heartwood of redwood, cypress, black walnut, catalpa, chestnut, sage orange, red mulberry, white oak, or cedar lumber are considered by the department to be naturally decay-resistant. _____ are considered by the department to be naturally termite resistant.

- a. Heartwood of bald cypress and redwood
- b. Redwood and eastern red cedar
- c. Heartwood of bald cypress, redwood and eastern red cedar
- d. None of the above

Questions 87 to 93 (Refer to Review Materials SPS 321.097 Carbon Monoxide Alarms SPS 321.10 Protection Against Decay and Termites; SPS 321.11 Foam Plastics, SPS 321.115 Installation of Elevators or Dumbwaiters)

90. PROTECTION AGAINST DECAY AND TERMITES. (5) (a) Fasteners for pressure-preservative treated wood and fire-retardant-treated wood shall meet all of the following requirements:

1. The fastener is a steel bolt with a diameter of 0.5 inch or greater.
2. The fastener is not made with stainless steel.
3. The fastener is made of hot-dipped, zinc-galvanized steel with the coating weight and thickness labeled as complying with ASTM A 153.
4. The fastener is made of steel with a mechanically-deposited zinc coating labeled as complying with ASTM B 695, Class 55 or greater.
5. The fastener has coating types and weights in accordance with the fastener manufacturer's recommendations. In the absence of the manufacturer's recommendations subd. 1., 2., 3., or 4. shall apply.

Note: "Zinc plated," "zinc coated," "chrome plated," etc., fasteners do comply with all of these standards.

- a. True
- b. False

91. FOAM PLASTIC. (c) The following applications of foam plastic do not require a thermal barrier: _____

1. On overhead garage doors.
2. In the box sill of the basement or ground floor, above the bottom of the floor joists.

- a. #1
- b. #2
- c. #1 and #2
- d. None of the above.

92 FOAM PLASTIC. (2) Insulation that does not meet the requirements of this section may be approved by the department in accordance with s. SPS 320.18. Approval will be based on tests that evaluate materials or products representative of actual end-use applications.

Note: See s. SPS 322.21 (3) for requirements for protecting foam plastic on the exterior of a dwelling.

- a. True
- b. False

93. FOAM PLASTIC. (1) Foam plastic insulation shall have a flame spread rating of _____ and a smoke developed rating of 450 or less when tested in accordance with ASTM E-84.

- a. 50 or more
- b. 75 or less
- c. 100 or more
- d. 125 or less

Questions 94 to 104 (Refer to Review Materials SPS 321.12 Drainage; SPS 321.125 Erosion Control and Sediment Control; SPS 321.13 Excavations Adjacent To Adjoining Property; SPS 321.14 Excavations for Footings and Foundations)

94. EROSION CONTROL AND SEDIMENT CONTROL. Control Standards. Including the practices under sub. (2), additional erosion and sediment control practices shall be employed, as necessary, to accomplish one of the following:

(a) A potential annual cumulative soil loss rate of not more than one of the following:

1. Five tons per acre per year where sand, loamy sand, sandy loam, loam, sandy clay loam, clay loam, sandy clay, silty clay or clay textures are exposed.

2. Seven and a half tons per acre per [year] where silt, silty clay loam or silt loam textures are exposed.

(c) A reduction of at least _____ of the potential sediment load in storm water runoff from the site on an average annual basis as compared with no sediment or erosion controls for the site where less than one acre of land disturbing construction activity is to occur.

Note: See ch. SPS 325 Appendix A for further explanatory material regarding compliance solutions for 80 and 40% reductions.

- a. 25%
- b. 30%
- c. 35%
- d. 40%

95. EROSION CONTROL AND SEDIMENT CONTROL. *General.* Land disturbing construction activities, except those activities necessary to implement erosion or sediment control practices, may not begin until the sediment control practices are in place for each area to be disturbed in accordance with the approved plan.

- a. True
- b. False

96. EROSION CONTROL AND SEDIMENT CONTROL. *General.* Where land disturbing construction activity is to occur, erosion and sediment control practices shall be employed, as necessary, and maintained to prevent or reduce the potential deposition of soil or sediment to which of the following:

- 1. The waters of the state.
- 2. Adjacent properties

- a. #1
- b. #2
- c. #1 and #2
- d. None of the above

97. EROSION CONTROL AND SEDIMENT CONTROL. *Soil loss analysis.* Potential soil loss shall be determined using an engineer analytical modeling acceptable to the department. **Note: The Revised Universal Soil Loss Equation II is an example of an acceptable model to determine soil loss.**

- a. True
- b. False

98. EROSION CONTROL AND SEDIMENT CONTROL. *Maintenance.* When the failure of erosion or sediment control practices results in an immediate threat of sediment entering public sewers or the waters of the state, procedures might be implemented immediately to repair or replace the practices. **Note: See ch. SPS 325 Appendix A for further explanatory material.**

- a. True
- b. False

99. EROSION CONTROL AND SEDIMENT CONTROL. *Maintenance.* A municipality shall not enact more stringent requirements regarding cleanup of soil or sediment deposition onto public ways.

- a. True
- b. False

100. DRAINAGE. (3) *Obstructions.* Where lot lines, walls, slopes, or other barriers prevent having the _____ in sub. (2), swales or other means shall be provided to ensure equivalent drainage away from the dwelling.

- a. 10-foot distance
- b. 11-foot distance
- c. 12-foot distance
- d. 13-foot distance

101. EXCAVATIONS ADJACENT TO ADJOINING PROPERTY. (1) *Notice.* Any person making or causing an excavation which may affect the lateral soil support of adjoining property or buildings shall provide at least _____ written notice to all owners of adjoining buildings of the intention to excavate. The notice shall state that adjoining buildings may require permanent protection.

- a. 10 days
- b. 15 days
- c. 20 days
- d. 30 days

102. EXCAVATIONS ADJACENT TO ADJOINING PROPERTY. (a) *Excavations less than _____ in depth.* If the excavation is made to a depth of _____ or less below grade, the person making or causing the excavation shall not be responsible for any necessary underpinning or extension of the foundations of any adjoining buildings.

- a. 12 feet
- b. 10 feet
- c. 16 feet
- d. 14 feet

103. EXCAVATIONS ADJACENT TO ADJOINING PROPERTY. (1)

Notice. The 15-day time limit for written notification may be waived if such waiver is signed by the owner(s) or tenant(s) of the adjoining properties.

- a. True
- b. False

104. EXCAVATIONS FOR FOOTINGS AND FOUNDATIONS. (1)

Excavations Below Footings and Foundations. No excavation _____ be made below the footing and foundation unless provisions are taken to prevent the collapse of the footing or foundation.

- a. shall
- b. should
- c. may
- d. can

Questions 105 to 111 (Refer to Review Materials SPS 321.15 Footings; SPS 321.16 Frost Protection; SPS 321.17 Drain Tiles)

105. FOOTINGS. Size and Type. Unless designed by structural analysis, unreinforced concrete footings shall comply with the following requirements:

(a) Continuous footings. The minimum width of the footing on each side of the foundation wall shall measure at least ____ wider than the wall. The footing depth shall be at least 8 inches nominal. Footing placed in unstable soil shall be formed. Lintels may be used in place of continuous footings when there is a change in footing elevation.

Note: Unstable soil includes soils that are unable to support themselves at a 90 degree angle for the full depth of the footing.

- a. 2 inches
- b. 4 inches
- c. 6 inches
- d. 8 inches

106. FOOTINGS. Size and Type. Footing for chimneys or fireplaces shall extend at least _____ on each side of the chimney or fireplace. The minimum depth shall measure at least 12 inches nominal.

- a. 2 inches
- b. 3 inches
- c. 4 inches
- d. None of the above

107. FOOTINGS. Size and Type. Unless designed by structural analysis, unreinforced concrete footings shall comply with the following requirement:

(b) Column or pier footing. 1. The minimum width and length of column or pier footings shall measure at least 2 feet by 2 feet.

2. The minimum depth of column or pier footings shall measure at least _____ nominal.

- a. 8 inches
- b. 10 inches
- c. 12 inches
- d. 16 inches

108. FROST PROTECTION. Exceptions. (a) Frost protected shallow foundations shall be designed in accordance with ASCE-32 as adopted in Table SPS 320.24–5.

(b) Portions of footings or foundations located directly under window areaways do not require frost protection provided the rest of the foundation is protected in accordance with this section.

(c) Footings and foundations may bear directly on bedrock less than 40 inches below adjacent grade provided all of the following conditions are met.

1. The rock shall be cleaned of all earth prior to placement.

2. All clay in crevices of the rock shall be removed to the level of frost penetration or to 4 times the width of the rock crevice, whichever is less.

3. Provisions shall be taken to prevent water from collecting anywhere along the foundation.

- a. True
- b. False

109. DRAIN TILE. Optional systems. (a) New construction. 1. For new dwelling construction, a municipality or registered UDC inspection agency may determine the soil types and natural or seasonal groundwater levels for which a complete drain tile or pipe system is required.

2. For new dwelling construction, a municipality may not enact requirements for other than complete drain tile or pipe systems.

- a. True
- b. False

110. DRAIN TILE. Material and Installation requirements for Required Systems. (d) Drain tile or pipe installation. Drain tile or pipe used for foundation drainage shall comply with the following requirements:

1. a. Except as allowed under subd. 1. b., the top of the tile or pipe shall be at or below the top of the footing.

b. Where the top of the footing is more than _____ below the bottom of the floor slab, tile or pipe is required on the interior of the foundation only and it shall be placed directly under the floor.

Note: This situation will commonly occur with a walk-out basement.

- a. 2 inches
- b. 4 inches**
- c. 6 inches
- d. 8 inches

111. FOOTINGS. Soil-Bearing Capacity. No footing or foundation shall be placed on soil with a bearing capacity of less than 1,500 pounds per square foot unless the footing or foundation has been designed through structural analysis. The soil-bearing values of common soils may be determined through soil identification.

- a. True
- b. False

Questions 112 to 117 (Refer to Review Materials SPS 321.18 Foundations)

112. GENERAL. Anchor bolts. Structural steel anchor bolts, at least ½ inch in diameter, embedded at least _____ into the concrete or grouted masonry with a maximum spacing of 72 inches and located within 18 inches of wall corners.

- a. 4 inches
- b. 5 inches
- c. 7 inches
- d. 9 inches

113. GENERAL. Lateral support at base. Lateral support such as floor slabs or framing shall be provided at the base of foundation walls.

- a. True
- b. False

114. GENERAL. Floor Framing. 2. a. Where the floor framing is parallel to the foundation wall, solid blocking or bridging shall be installed in at least the first adjacent joist space at a spacing of no more than _____ on center.

b. Blocking and bridging shall be the same depth as the joist.

c. Fastening of the blocking or bridging shall be in accordance with structural analysis or the fastener schedule in Table 321.02-2.

- a. 16 inches
- b. 32 inches
- c. 48 inches
- d. 64 inches

115. MASONRY FOUNDATION WALLS. (a) Dampproofing. 1. Except as allowed under subd. 3., masonry block foundation walls shall be coated with a layer of minimum ¾-inch thick type M or S portland cement mortar parging on the exterior of the wall from footing to finished grade.

2. Masonry foundation walls shall be damp-proofed by applying to the exterior surface of the portland cement parging from footing to finished grade, a continuous coating of (which of the following) _____:

(a) A bituminous coating applied in accordance with the manufacturer's instructions.

(b) Acrylic-modified cement applied at a minimum rate of 3 pounds per square yard.

(c) A layer of minimum 1/8-inch thick structural surface bonding material labeled as complying with ASTM C887.

Note: The ASTM C887 standard is entitled, "Standard Specification for Packaged, Dry, Combined Materials for Surface Bonding Mortar."

(d) A waterproofing treatment applied in accordance with the manufacturer's instructions.

- a. (a) and (b)
- b. (b), (c) and (d)
- c. (a), (b) and (d)
- d. All of the above - (a), (b), (c) and (d)

116. MASONRY FOUNDATION WALLS. (a) Dampproofing. 3.
a. Parging of masonry block foundation walls is not required where a dampproofing material is sufficiently flexible to be listed or designed for direct application to masonry block.
b. Parging of masonry block foundation walls is not required where a layer of minimum 1/4-inch thick structural surface bonding material labeled as complying with ASTM C887 is used for dampproofing.

- a. True
- b. False

117. WOOD FOUNDATIONS. Wood foundations can be designed and constructed in accordance with the standard adopted in Table 320.24–2.

Note: The department shall not accept Permanent Wood Foundations Design and Construction Guide published by the Southern Forest Products Association through the Southern Pine Council, as complying with this standard. The Design and Construction Guide requires a 5-inch-thick floor slab if a poured concrete floor slab is used.

- a. True
- b. False

Questions 118 to 130 (Refer to Review Materials SPS 321.19 Floor Design; SPS 321.20 Concrete Floors; SPS 321.203 Garage Floors; SPS 321.205 Wood Floors in Contact with the Ground; SPS 321.21 Precast concrete floors; SPS 321.22 Wood Frame Floors; SPS 321.225 Decks)

118. CONCRETE FLOORS. When concrete floors are provided, the thickness of the concrete shall measure at least _____.

- a. 2 inches
- b. 3 inches
- c. 4 inches
- d. 5 inches

119. GARAGE FLOORS. The floor shall be sloped such that water is removed in accordance with _____:

(a) Water drains toward the overhead door or to exterior grade such that no damage will be caused to any structural member or wall covering of the garage or the dwelling.
(b) Water drains into an interior floor drain that complies with the requirements of ch. SPS 382.

- a. None of the above
- b. Only (a)
- c. Only (b)
- d. Both (a) and (b)

120. GARAGE FLOORS. Garage floors shall be constructed of concrete or other noncombustible materials which are impermeable to petroleum products. Slab-on-grade concrete garage floors shall be at least _____ thick and placed over at least _____ of granular fill.

- a. 3 inches / 4 inches
- b. 4 inches / 4 inches
- c. 5 inches / 3 inches
- d. 6 inches / 5 inches

121. PRECAST CONCRETE FLOORS. Precast concrete floors _____ be designed through structural analysis, or load tables furnished by the precast product fabricator may be used, provided the load tables were developed using structural analysis or load testing.

- a. shall
- b. should
- c. can
- d. may

122. WOOD FLOORS IN CONTACT WITH THE GROUND. Wood floors in contact with the ground shall comply with the requirements under s. SPS 321.18 (4).

- a. True
- b. False

123. WOOD FRAME FLOORS. Unless designed through structural analysis, wood frame floors shall comply with the following requirements:

(1) FLOOR JOISTS. (a) General. 1. Floor joists shall comply with the structural requirements and dead load determination under s. SPS 321.02.

- a. True
- b. False

124. WOOD FRAME FLOORS. Bearing and End Configuration. (a) Sawn lumber. 1. 'Joist.' Wood joists made of sawn lumber shall meet the following bearing requirements:

a. Wood joist supported on wood or metal shall have a bearing surface of at least _____ measured from the end of the joist.

- a. 1 ½ inches
- b. 2 inches
- c. 2 ½ inches
- d. 3 inches

125. WOOD FRAME FLOORS. Girders and beams. (d) Lateral restraint for all wood beams shall be provided at all columns using a saddle or other approved connection where the beam meets one of the following conditions:

- 1. The beam is not restrained at both ends.**
 - 2. The beam is more than 11.25 inches deep using actual measurement.**
- Note: A saddle supports the beam on the bottom and allows for the through-connection of fasteners into the side of the beam.**

- a. True
- b. False

126. WOOD FRAME FLOORS. Bearing and End Configuration. (d) Wood floor joists with ends that intersect over a beam shall have the ends overlap at least _____ and be securely fastened together with at least two 12d common nails or the ends shall be butt-jointed or face-jointed and fastened with ties, straps, plates or solid blocking.

- a. 3 inches
- b. 4 inches
- c. 6 inches
- d. 8 inches

127. WOOD FRAME FLOORS. Other Holes. Holes bored in floor joists that are not within 2 inches of the top or bottom of the joist shall have their diameter limited to _____.

- a. ¼ the depth of the joist
- b. 1/3 the depth of the joist
- c. ½ the depth of the joist
- d. 2/3 the depth of the joist

128. WOOD FRAME FLOORS. Notching and Boring. Notching and boring of beams or girders is _____.

- a. permissible
- b. prohibited
- c. prohibited unless determined through structural analysis.
- d. allowed provided it is less than a 2-inch notch or bore hole.

129. WOOD FRAME FLOORS. Floor Openings. _____ shall be doubled when the span of the header exceeds 4 feet. Headers which span more than 6 feet shall have the ends supported by joist hangers or framing anchors, unless the ends are supported on a partition or beam. Tail joists (joists which frame into headers) more than 8 feet long shall be supported on metal framing anchors or on ledger strips of at least 2 inches by 2 inches nominal.

- a. Trimmers
- b. Headers
- c. Trimmers and headers
- d. none of the above

130. (1) Decks attached to dwellings and any detached decks that serve an exit shall comply with the applicable provisions of sub chs. II to X of ch. SPS 321, including

- (a) Excavation requirements under s. SPS 321.14;**
- (b) Footing requirements under s. SPS 321.15 (2) (f);**
- (c) Frost penetration requirements under s. SPS 321.16;**
- (d) Load requirements under s. SPS 321.02;**
- (e) Stair, handrail and guard requirements of s. SPS 321.04.**
- (f) Decay protection requirements of s. SPS 321.10.**

- a. (a), (c) and (e)
- b. (b), (d) and (f)
- c. (a), (b), (c), (d), (e) and (f)
- d. (a), (c), (d) and (f)

Questions 131 to 160 (Refer to Review Materials SPS 321.23 Wall Design; SPS 321.24 Exterior covering; SPS 321.25 Wood Frame Walls)

131. WALL DESIGN. Walls shall be designed to withstand a horizontal wind pressure of at least 20 pounds per square foot applied to the vertical projection of that portion of the dwelling above grade. _____ wind load reduction shall be permitted for the shielding effect of other buildings.

- a. No
- b. A
- c. A 10%
- d. None of the above

132. EXTERIOR COVERING. During construction. During construction, wall cavity insulation _____ be installed until a water-resistant covering is in place over the wall cavity and windows, doors and a roof with at least underlayment are installed.

Note: An example of acceptable water-resistant covering for a wall is foam sheathing with permanently taped joints.

- a. may
- b. can
- c. may not
- d. should

133. EXTERIOR COVERING. Flashing. (c) 1. Any joints between 2 pieces of flashing that form a vertical joint shall be lapped a minimum of 6 inches and sealed.

2. Any joints between 2 pieces of flashing that form a horizontal joint shall be lapped a minimum of 2 inches and sealed unless otherwise specified by the flashing manufacturer.

3. Sealants used for flashing _____ grade and shall be compatible with the materials being sealed.

- a. shall be exterior
- b. can be exterior
- c. can be any
- d. none of the above

134. EXTERIOR COVERING. Water-resistive barrier requirements. (a) General.

1. Exterior walls of wood or metal frame construction shall be provided with a water-resistant barrier from the highest point to the bottom of the permanent weather-resistant covering.

Note: Acceptable water-resistant barrier materials include polymeric-based house wraps and spray-applied water-resistant barriers installed per the manufacturer's instructions, #15 or greater asphalt-saturated felts that comply with ASTM D 226 for type I felt and extruded foam sheathing with permanently taped joints. Duct tape or similar will not result in a permanently taped joint.

2. Structural products with an integral water-resistant barrier may be approved by the department as a complete assembly.

(b) Material compatibility. The water-resistant barrier material shall be compatible with the other materials in the wall with which it will come into contact.

Note: Spray-applied water-resistant barriers may not be compatible with foam plastic insulation.

- a. True
- b. False

135. EXTERIOR COVERING. (d) Application.

1. Horizontal seams in sheet or strip material shall be overlapped such that the upper layer extends over the lower layer at least 2 inches.

2. Vertical seams in sheet or strip materials shall be overlapped at least 6 inches.

3. Any rips, tears or voids shall be patched in accordance with subs. 1. and 2.

- a. True
- b. False

136. EXTERIOR COVERING. (c) *Performance requirements.* 1. Polymer-based house wraps shall meet one of the following requirements:

a. A water vapor permeability rating of 4 perms or higher when tested in accordance with ASTM E96.

b. An acceptable water-resistance rating determined in accordance with ASTM D779, AATCC 127 or CCMC 07112.

Note: Asphalt-saturated felt or "tar paper" is not a polymeric-based house wrap.

Note: For more information on the water-resistance tests and their results, see the International Code Council Evaluation Services Acceptance Criteria AC 38.

2. Spray-applied water-resistive barriers shall be approved under the International Code Council Evaluation Services.

Note: For approval criteria, see ICC-ES acceptance criteria AC 212 or successor document.

- a. True
- b. False

137. EXTERIOR COVERING. (e) Penetrations. 1. Penetrations caused by fasteners of the water-resistive barrier or the weather-resistant exterior covering do require sealing.
2. Penetrations of 3 square inches or less with an annular space of no more than 1/2 inch shall be sealed with caulk or similar material.
3. Penetrations of greater than 5 square inches shall be flashed in accordance with sub. (3).

- a. True
- b. False

138. WOOD FRAME WALLS. Notching and boring. 1. When piping or ductwork is placed in an exterior wall or an interior load-bearing wall, such that at least half of the top plate is removed, the plate shall be reinforced with a steel angle at least _____ by 20 gauge thick.

Note: 20 gauge is approximately 0.036 inch.

- a. 2 inches by 2 inches
- b. 3 inches by 3 inches
- c. 4 inches by 4 inches
- d. None of the above

139. WOOD FRAME WALLS. (4) NOTCHING. Notching and boring of columns or posts is prohibited unless designed through structural analysis.

- a. True
- b. False

140. WOOD FRAME WALLS. (3) WALL OPENINGS.

(am)Headers. Where doors and windows occur, headers can be used to carry the load across the opening.

(bm) Header size. The size of headers shall be determined in accordance with the spans and loading conditions listed in Tables 321.25-B, 321.25-C and 321.25-D. Headers for longer spans can be designed by an engineering method under s. SPS 321.02.

- a. True
- b. False

141. WOOD FRAME WALLS. Top plates. (a) General. Except as allowed under subd. 3., top plates shall be provided and configured as follows:

1. Studs at bearing walls shall not be capped with double top plates.
2. End joints in double top plates shall be offset at least 3 stud spaces.
3. Double top plates shall be overlapped at the corners and at intersections of partitions.
4. The plate immediately above the stud may have a joint only when directly over the stud.

- a. True
- b. False

142. WOOD FRAME WALLS. Posts and Columns. 4. All columns shall be positively attached to the beams they support using clips, straps or saddles.

- a. True
- b. False

Refer to Table 321-25-A Size, Height and Spacing of Wood Studs-A (For questions 143 through 145)

143. Using a Nominal Size 2X4, what is the maximum spacing allowed when supporting a roof and ceiling (only)?

- a. 14"
- b. 24"
- c. 16"
- d. 10"

144. Using a Nominal Size 2X4, what is the maximum spacing allowed when supporting one floor, roof and ceiling?

- a. 14"
- b. 24"
- c. 16"
- d. 10"

145. Using a Nominal Size 2X6, what is the maximum spacing allowed when supporting one floor, roof and ceiling?

- a. 14"
- b. 24"
- c. 16"
- d. 10"

146. WOOD FRAME WALLS. Foundation Cripple Walls.

(a) Foundation cripple walls shall be framed with studs at least as large as the studs above.

(b) When more than 4 feet in height, cripple walls shall be framed with studs needed for an additional floor level.

(c) Cripple walls with a stud height of less than 14 inches shall be sheathed on at least one side for its entire length with a wood structural panel that is fastened to both the top and bottom plates or the cripple walls shall be constructed of solid blocking.

(d) Cripple walls with a stud height of 14 inches or greater shall be braced in accordance with sub. (8).

(e) Cripple walls shall be fully supported by a continuous foundation.

- a. (a) and (c)
- b. (b), (c) and (d)
- c. (a), (c), (d) and (e)
- d. (a), (b), (c), (d) and (e)

147. WOOD FRAME WALLS. Wall Bracing. (a) General. Dwellings using wood— framed walls shall be braced in accordance with this section. Where a building, or a portion thereof, does not comply with all of the bracing requirements in this section, those portions shall be designed and constructed in accordance with accepted engineering practice.

- a. True
- b. False

Refer to Table 321.25-B Allowable Spans for Headers Supporting Roof/Ceiling Assemblies (For questions 148 through 151)

148. What is the maximum width allowed for header members on a house 26' in width; using two 2X6's; in zone 2? (Refer to SPS 321.02 for the counties in each zone)

- a. 2'
- b. 3'
- c. 4'
- d. 5'

149. What is the maximum width allowed for header members on a house 28' in width; using two 2X6's; in zone 1? (Refer to SPS 321.02 for the counties in each zone)

- a. 2'
- b. 3'
- c. 4'
- d. 5'

150. What is the maximum width allowed for header members on a house 28' in width; using two 2X12's; in zone 1? (Refer to SPS 321.02 for the counties in each zone)

- a. 5'
- b. 6'
- c. 7'
- d. 8'

- a. 2.5'
- b. 3'
- c. 4'
- d. 5'

151. What is the maximum width allowed for header members on a house 26' in width; using two 2X10's; in zone 2? (Refer to SPS 321.02 for the counties in each zone)

- a. 5'
- b. 6'
- c. 7'
- d. 8'

- a. 2.5'
- b. 3'
- c. 4'
- d. 5'

Refer to Table 321.25-D Allowable Spans for Headers Supporting One Floor and Roof/Ceiling Assembly (For questions 152 through 155)

152. What is the maximum width allowed for header members on a house 26' in width; using two 2X10's; in zone 2? (Refer to SPS 321.02 for the counties in each zone)

- a. 2.5'
- b. 3'
- c. 4'
- d. 5'

153. What is the maximum width allowed for header members on a house 32' in width; using two 2X12's; in zone 1? (Refer to SPS 321.02 for the counties in each zone)

- a. 2.5'
- b. 3'
- c. 4'
- d. 5'

154. What is the maximum width allowed for header members on a house 32' in width; using two 2X8's; in zone 2? (Refer to SPS 321.02 for the counties in each zone)

155. What is the maximum width allowed for header members on a house 32' in width; using two 2X6's; in zone 2? (Refer to SPS 321.02 for the counties in each zone)

156. WOOD FRAME WALLS. Wall Bracing. (c) Bracing amount. Bracing methods and materials complying with Table 321.25-G shall be applied to walls in accordance with the following requirement:
6. Balloon-frame walls may be no longer than 21 feet and shall have a maximum height of two floors unless constructed in accordance with an approved design. Wall framing shall be continuous from the lowest floor to the wall top plate at the roof. All edges of sheathing shall be supported on and fastened to blocking or framing. Braced wall panels may not be required on the balloon-frame wall portion provided the bracing amount and brace spacing requirement are satisfied for the building side. Where brace panels are located on the balloon-frame wall portion, they shall have a height-to-width ratio of not more than 2.5:1.

- a. True
- b. False

157. WOOD FRAME WALLS. Wall Bracing. (c) Bracing amount. Bracing methods and materials complying with Table 321.25-G shall be applied to walls in accordance with the following requirement:
7. For a gable end wall, if the brace-panel height does not exceed _____ at the highest portion and if the 12½-foot and 21-foot spacing requirements in Figure 321.25-C are met, the wall is adequately braced. Where a brace panel exceeds _____ in height, it shall have a height-to-width ratio of not more than 2.5:1, and comply with Figure 21.25-C.

- a. 12 feet / 10 feet
- b. 10 feet / 12 feet
- c. 12 feet / 12 feet
- d. 12 feet / 14 feet

158. WOOD FRAME WALLS. Wall Bracing. (c) Bracing amount. Bracing methods and materials complying with Table 321.25-G shall be applied to walls in accordance with all of the following requirements:

3. Where used, the number of intermittent brace panels applied to walls parallel to each rectangle side shall comply with Table 321.25-I.

4. Where used, the total length of continuous sheathed brace panels applied to walls parallel to each building side shall comply with Table 321.25-J.

5. The location of brace panels applied to walls parallel to each building side shall comply with Figure 321.25-C.

- a. True
- b. False

159. WOOD FRAME WALLS. Wall Bracing. (c) Bracing amount. Bracing methods and materials complying with Table 321.25-G shall be applied to walls in accordance with the following requirement:

2. In no case may the amount of bracing be _____ braced wall panels on walls parallel to each rectangle side for each floor level of the building.

- a. determined by
- b. less than one
- c. less than two
- d. none of the above

160. What is the maximum width allowed for header members on a house 28' in width; using two 2X8's; in zone 2? (Refer to SPS 321.02 for the counties in each zone)

- a. 3'
- b. 3.5'
- c. 4'
- d. 4.5'

Questions 161 to 164 (Refer to Review Materials SPS 321.26 Masonry Walls)

161. MASONRY WALLS. Types of Mortar. (a) Mortar specifications. The type of mortar shall be determined from Table 321.26-A. The mortar shall conform to the requirements of ASTM C-270.

(b) Surface bond mortars. Surface bond mortars for masonry walls shall be mixed in accordance with the proportions specified on the bag.

- a. True
- b. False

162. MASONRY WALLS. Cold Weather Work. When ambient air temperature is below _____, the cold weather construction procedures under ACI 530.1 shall be followed.

Note: The requirements for cold weather work are in sections 1.8 and 1.8C of the 2005 edition of the ACI standard.

- a. 40 degrees
- b. 35 degrees
- c. 30 degrees
- d. 25 degrees

163. MASONRY WALLS. Flashing. (b) Location. 1. 'Lintels and chimneys.' In exterior hollow masonry walls, flashing shall be installed at the backsides of chimneys and at the bottom of the cavity formed by openings such as lintels over doors and windows.

- a. True
- b. False

164. MASONRY WALLS. Masonry Veneers. 6. _____ behind masonry veneer shall be covered with material used to construct the water-resistive barrier as required under s. SPS 321.24 (4).

Note: Acceptable water-resistive barrier materials include polymeric-based house wraps and #15 or greater asphalt-saturated felts that comply with ASTM D 226 for type I felt.

- a. Studs
- b. Sheathing
- c. Studs and sheathing
- d. None of the above

Questions 165 to 180 (Refer to Review Materials SPS 321.27 Roof Design and Framing; SPS 321.28 Weather Protection for Roofs; SPS 321.29 Masonry Fireplaces; SPS 321.30 Masonry Chimneys; SPS 321.32 Factory-built Fireplaces; SPS 321.33 Construction in Floodplains and SPS 321.40 Installation of Manufactured Homes/ Installation Standards)

165. ROOF DESIGN AND FRAMING. *Structural Design.*
Applicability of tables. The joist and rafter tables in the ch.SPS 325 Appendix A are valid for roofs with a minimum slope of 3 in 12. Lesser slopes require engineering analysis or shall be provided with a ridge beam.

- a. True
- b. False

166. ROOF DESIGN AND FRAMING. *Uplift and Suction Forces. Anchorage.* 1. Roof framing members spanning more than 8 feet measured from the outermost edge of the roof shall be permanently fastened to the top plate of load bearing walls using engineered clips, straps or hangers.
2. Roof framing members spanning 4 feet or less measured from the outermost edge of the roof shall be permanently fastened to the top plate of load bearing walls using toe-nailing or engineered clips, straps or hangers.

- a. True
- b. False

167. WEATHER PROTECTION FOR ROOFS. *Asphalt Shingles.* Shingles shall have at least _____ fasteners per strip shingle or 2 fasteners per interlocking shingle, unless the manufacturer has other specifications.

- a. 2
- b. 3
- c. 4
- d. 5

168. WEATHER PROTECTION FOR ROOFS. *Reroofing.* New roof coverings may be installed over existing roof coverings where all of the following conditions exist:
(a) The existing roof or roof covering is water-soaked or has deteriorated such that it is inadequate as a base for additional

roofing.

(b) The existing roof is wood shake, slate, clay, cement or asbestos-cement tile.

(c) The existing roof has 2 or more applications of any type of permanent roof covering.

- a. True
- b. False

169. WEATHER PROTECTION FOR ROOFS. *Chimney flashing.*

1. Chimneys shall be flashed and counter-flashed to a height of at least 6 inches.

2. Chimney crickets or saddles shall be installed where the upper side of a chimney is more than _____ wide on a sloping roof.

3. The intersection of the cricket and the chimney shall be flashed and counter-flashed to a height of at least 6 inches.

- a. 20 inches
- b. 25 inches
- c. 30 inches
- d. 35 inches

170. MASONRY FIREPLACES. *Termination of chimneys.* Masonry fireplace chimneys shall extend at least 3 feet above the highest point where the chimney passes through the roof and at least 2 feet higher than any portion of the dwelling within _____ of the chimney.

- a. 8 feet
- b. 10 feet
- c. 12 feet
- d. 14 feet

171. MASONRY FIREPLACES. *Flue Liners.* Flue liners shall start at the top of the fireplace throat and extend to a point at least _____ above the top of the chimney cap.

- a. 4 inches
- b. 6 inches
- c. 7 inches
- d. 8 inches

172. MASONRY CHIMNEYS. Corbeling. Unless designed through structural analysis, masonry chimneys shall not be corbeled from a wall more than 6 inches nor shall a masonry chimney be corbeled from a wall less than _____ in nominal thickness unless it projects equally on each side of the wall. The corbeling shall not exceed one-inch projection for each brick course.

- a. 6 inches
- b. 8 inches
- c. 10 inches
- d. 12 inches

173. FACTORY-BUILT FIREPLACES. Factory built fireplaces consisting of a _____ and other parts shall be tested and listed by a nationally recognized testing laboratory.

1. fire chamber assembly
2. one or more chimney sections
3. a roof assembly

- a. #1 and 3
- b. # 1and 2
- c. # 1, 2 and 3
- d. #2 and 3

174. CONSTRUCTION IN FLOODPLAINS. Protection of Electrical and Mechanical Systems.

Electrical and mechanical equipment shall be placed _____ the base flood elevation or shall be designed to prevent water contact with the equipment in case of a flood up to the base flood elevation.

- a. at
- b. below
- c. above
- d. None of the above.

175. INSTALLATION OF MANUFACTURED HOMES. INSTALLATION STANDARDS. Compliance. A manufactured home produced on or after April 1, 2007 shall be installed in accordance with 24 CFR Part 3285 except as otherwise provided by this subsection.

- a. True
- b. False

176. INSTALLATION OF MANUFACTURED HOMES. INSTALLATION STANDARDS. Produced Before April 1, 2007.

(a) Except as provided in par. (b), the installation of a manufactured home produced before April 1, 2007 shall be installed in conformance with the requirements in effect at the time the manufactured home was produced.

- a. True
- b. False

177. INSTALLATION OF MANUFACTURED HOMES. INSTALLATION STANDARDS. Produced Before April 1, 2007.

Piers shall be placed under the main frame of the chassis at intervals of not more than _____ and no more than 3 feet from the exterior side of each end wall. The 7-foot spacing requirement may be varied as permitted by footing, spacing and soil capacity tables provided by the home manufacturer.

- a. 5 feet on-center
- b. 6 feet on-center
- c. 7 feet on-center
- d. 8 feet on-center

178. INSTALLATION OF MANUFACTURED HOMES. INSTALLATION STANDARDS. Produced Before April 1, 2007.

The home site may be graded to permit water to drain from under the home and away from the home for a minimum of 3 feet from the home.

- a. True
- b. False

179. INSTALLATION OF MANUFACTURED HOMES. INSTALLATION STANDARDS. Produced Before April 1, 2007. Wood caps and shims shall be at least equal to No. 2 spruce pine fir having a minimum fiber bending stress rating of 1400 psi. All wood caps shall be the same species of wood, and all shims shall be the same species of wood.

- a. True
- b. False

180. INSTALLATION OF MANUFACTURED HOMES.

INSTALLATION STANDARDS. *Produced Before April 1, 2007.*

5. Each footing shall consist of one of the following: c. An 18-inch diameter hole bored to below the frost line or to unfractured bedrock and filled with poured concrete.

- a. True
- b. False

