

## CHAPTER IV – DECKS

### SECTION 30.30 GENERAL REQUIREMENTS

#### 1. DEFINITIONS:

- (a) Deck: Any structure which serves as a raised horizontal platform on floor constructed of wood or other materials, without enclosing walls or roof.
- (b) Attached Deck: Any deck which is physically connected to the principal building or accessory structure.
- (c) Detached Deck: Any deck which is NOT physically attached to the principal building or accessory structure.

#### 2. SOIL AND EXCAVATION REQUIREMENTS FOR DECK PIERS OR FOUNDATIONS:

- (a) No pier shall be placed on soil with a bearing capacity of less than 2,000 lbs. Per square foot unless the pad support is designed through structural analysis.
- (b) All organic material (roots, etc.) shall be cut off at the sidewalls of the borings or trench. All organic and loose material must be removed from the cavity area prior to pouring concrete.

#### 3. DECKS, PEIRS, PADS AND FOUNDATIONS:

- (a) General footings, pads or piers shall be of adequate bearing area to safely distribute all live and dead loads to the supporting soil without exceeding the bearing capacity of the soil.
- (b) Type and size of concrete pads, piers or foundations:
  - 1. Decks attached to principal buildings:
    - (a) Concrete Pads: The minimum depth of a pad shall be 48” below grade. The minimum dimensions of this pad shall be 4” in depth and 8” in diameter.
    - (b) Piers: The minimum depth of concrete piers shall be 48” below grade. The minimum dimension of this pier shall be 8” in diameter. (The concrete pier(s) shall extend a minimum of 6” above grade unless an approved mounting bracket is secured at the top surface of the pier(s)).
    - (c) Direct burial wood posts shall be placed on a minimum 2” nominal thickness treated plat or other approved materials at a uniform depth

below grade. Posts shall be treated to the requirements of the American Wood Preserver's Association (AWPA) standards C2 and C15 for direct soil contact 4" below grade. Post shall be a minimum of 4' below established grade.

#### 4. FRAMING:

##### (a) General Requirements:

1. Materials: All wood framing used in deck construction shall be pressure treated against decay or shall be a species of wood that is naturally decay resistant or shall be protected from weather.
2. Design loading: Decks shall be designed for minimum of a 40 pound per square foot loading.
3. See fastener schedule for nailing requirements. All fasteners and hangers shall be corrosion resistant to weather and the type of chemically treated wood they are in direct contact with.
4. Deck framing shall be in accordance with COMM 21.19, 21.22, 21.225(5)(6).

##### (b) Column Posts:

1. Column spacing: Column posts shall be spaced per "Table No. 2".
2. Column size:
  - (a) All column posts not exceeding six (6) feet in height shall be a minimum of four inches by four inches (4"x4") nominal thickness.
  - (b) All column posts exceeding six (6) feet in height shall be a minimum of six inches by six inches (6"x6") nominal thickness.
3. Lateral support: Column posts shall be constructed in such a manner or mechanically attached to the deck foundation to resist lateral movement.

##### (c) BEAMS:

1. Beam Size – All beams shall be sized per "Table No. 2".

- (a) Beams, except as otherwise noted in “Table No.2”, SHALL BE A MINIMUM OF TWO (2), TWO (2) INCH THICK MEMBER OF ONE (1), FOUR (4) INCH THICK MEMBER. (I.E.: 2 – 2x8 or 1 – 4x8).
  - (b) Beams may be spaced on each side of the post provided that blocking is installed a minimum of twenty-four (24) inches.
- 2. Bearing: Beams bearing directly on the posts shall be attached by means of approved metal anchors or other approved methods.
  - 3. Ledger Boards: Ledger boards attached directly to the house or other structure may be used to replace a beam or beams. A single member of equal depth to the required size beam shall be used. The ledger board shall be attached with two (2) ½” bolts, (2) ½” lag bolts or equivalent fasteners, spaced no more than 24 inches on center, secured directly into the building structure. Flashing shall be installed between the ledger and building structure.
  - 4. Beams shall not be cantilevered more than twelve (12) inches past the column post.

(d) JOISTS:

- 1. Joist Size: All deck joists shall be sized and spaced per “Table No. 2”.
- 2. Bearing: Deck joists shall bear a minimum of one and one half (1-1/2) inches on the beam or ledger board. Joists fastened to the face of the beam or ledger shall be attached with approved metal hangers.
- 3. Bridging: Bridging shall be provided at intervals not exceeding eight (8) feet.
- 4. Overhanging of Joists: Joists which are at right angles to the supporting beam shall not be cantilevered more than two (2) feet past the supporting beam, unless designed by structural analysis.

(e) DECKING:

- 1. Material: All decking material shall be minimum of one and one quarter (1-1/4) inches thick, nominal thickness. One inch decking may be used provided that the joists are spaced no more than sixteen (16) inches o.c.
- 2. Decking Orientation:
  - (a) Decking shall be installed diagonally or at right angles to the joists.

- (b) Decking shall be centered over joists with cuts made parallel to joists. Not more than two (2) adjacent boards may break joints on the same joist except at ends and at openings.

(f) GUARDRAILS AND HANDRAILS:

1. Guardrails: All decks which are more than twenty-four (24) inches above grade shall be protected with guardrails.
2. Handrails: Every stairway of more than three (3) risers shall be provided with at least one handrail. Handrails shall be provided on the open sides of stairways.
3. Guardrail and Handrail Detail:
  - (a) Guardrails. All decks which are more than twenty four (24) inches above grade shall be protected with guardrails.
  - (b) Height: Handrails shall be located at least thirty (30) inches, but not more than thirty-eight (38) inches above the nosing of the treads. Guardrails shall be located at least thirty-six (36) inches above the surface of the deck.
  - (c) Open Railings: Open guardrails or handrails shall be provided with intermediate rails or an ornamental pattern to prevent the passage of a sphere with a diameter greater than four (4) inches.
  - (d) Railing Loads: Handrails and guardrails shall be designed and constructed to withstand a 200 pound load applied in any direction.
  - (e) The clearance between a handrail and the wall surface shall be at least 1 ½ inches.
  - (f) Projection. Handrails and associated trim may project into the required width of stairs and landings a maximum of 4 ½ inches on each side.
  - (g) Size and configuration. Handrails shall be symmetrical about the vertical centerline to allow for equal wraparound of the thumb and fingers.
    1. Handrails with a round or truncated round cross sectional gripping surface shall have a maximum whole diameter of 2 inched.

2. Handrails with a rectangular cross section gripping surface shall have a maximum perimeter of 6 ¼ inches with a maximum cross sectional dimension of 2 7/8 inches.
3. Handrails with other cross sections shall have a maximum cross sectional dimension of the gripping surface of 2 7/8 inches with a maximum linear gripping surface measurement of 6 ¼ inches and a minimum linear gripping surface of 4 inches.

(g) STAIRWAY, TREADS AND RISERS:

1. Risers: Risers shall not exceed eight (8) inches in height measured from tread to tread.
2. Treads: Treads shall be at least nine (9) inches wide, measured horizontally from nose to nose.
3. Variation: There shall be no variation in uniformity exceeding 3/16 inch in the width of a tread or in the height of risers. For sloping grades at the bottom of a deck stairway, the riser height shall be measured at the center of the stair tread.
4. Stair stringers shall be supported in accordance to the same manor as used for the deck.
5. Stairways shall be at least 3 feet in width.
6. COMM 21.04(2)(f): Stairways with open risers shall be constructed to prevent the passage of a sphere with a diameter of four (4) inches or larger between any 2 adjacent treads.
7. COMM 21.04(3)3b: The triangular area formed by the tread, riser and bottom rail shall have an opening size that prevents the passage of a sphere with a diameter of six (6) inches or larger.

(h) ALTERNATIVE PROVISIONS AND METHODS:

1. Wood Decks: Wood decks attached to the dwelling may be constructed to the Uniform Dwelling code standards listed below.
  - (a) Excavation requirements of COMM 21.14.
  - (c) Footing requirements of COMM 20.15.
  - (d) Frost penetration requirements of COMM 21.16.
  - (e) Load requirements of COMM 21.02.
  - (f) Stair, handrail and guardrail requirements of COMM 21.04.

(g) Decay protection requirements of COMM 21.10.

2. New materials and methods shall comply with the provisions of Section 30.60.

3. Detached decks must:

(a) Concrete pads shall be provided at a uniform depth below grade with all loose or organic material moved from the pad area prior to placement of concrete. The pad shall have a minimum depth of four (4) inch thick and eight (8) inch diameter.

(b) Piers: The minimum of eight (8) inch diameter concrete piers shall be at a uniform depth below grade.

(c) Direct burial wood posts shall be placed on a minimum two (2) inch nominal pressure treated plate or other approved materials at a uniform depth below grade. Posts shall be treated to at a uniform depth below grade. Posts shall be treated to CCA 40 for direct soil contact.

(d) Ground contact framing shall be allowed for decks which are less than twenty-four (24) inches above grade. All materials in direct contact with the soil shall be treated to the requirements of the American Wood Preserver's Association (AWPA).

