



## City of Ann Arbor PLANNING & DEVELOPMENT SERVICES — CONSTRUCTION SERVICES

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### RESIDENTIAL DECKS

The undercarriage of residential decks must be comprised of treated lumber unless otherwise approved by the Building Official. The deck and railing may be constructed of treated lumber or a variety of materials approved for that use.

#### Stairs

Steps must be a minimum of 36" wide. Riser heights are 8 1/4" maximum and 4" minimum. Tread depths are 9" minimum with a 1" nosing if a solid riser is installed. There can be no more than a 3/8" variation in riser heights or tread depths in the total run of the stair.

#### Handrails

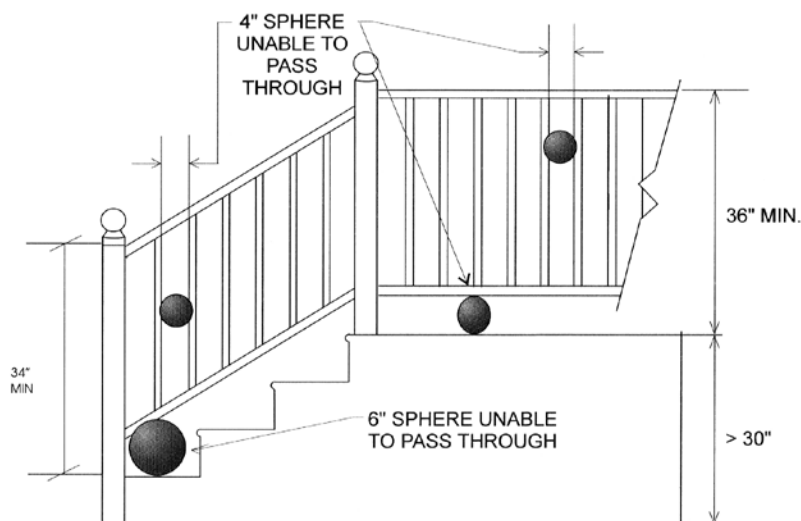
Stairs with four or more risers require a graspable handrail on at least one side. The handrail must be between 34" and 38" above the stair nosing. Handrails must be continuous for the full length of the stairs, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight.

Handrail ends shall be returned to a wall or post or shall terminate in a newel post or safety terminal. Handrails adjacent to a wall shall have a space of not less than 1 1/2" between the wall and the handrail.

#### Guardrails

Decks or porches with a walking surface more than 30" above floor or grade must have a guardrail system extending not less than 36" above the deck surface on residential decks. Commercial and multi family decks require a minimum 42" high guardrail.

Guardrail systems must be able to withstand a 200 lb. thrust load in either direction. Openings in the guardrail system (and handrail supports), must have a maximum opening of less than 4 inches. The triangular openings formed by a riser, tread and bottom rail of the guard at the open side of a stairway are permitted to be such that a 6 inch sphere cannot pass through.



#### Footings

Foundations must be a minimum of 8" piers or 4" X 4" posts sunk 42" below grade when the deck is attached to the house.

**Undercarriage**

Beams and Joists must support a live load of 42 pounds per square foot. Joists must be attached by metal hangers at termination points without positive bearing. Carriage bolts are not designed to carry a shear load.

**Decking**

Nominal two inch boards are required for joists spaced at a maximum of 24" on center. Nominal 5/4" boards may be attached to joists spaced at a maximum of 16" on center or less.

Joist hangers must be used on all connections without positive bearing. Only double dipped galvanized nails, fasteners and hardware should be used unless otherwise approved by manufacturer.

Approved corrosion-resistant flashing is required at the intersection of exterior walls and decks. Flashing shall be inserted to the extent under the existing siding and over the ledger board to prevent water from collecting at this point. Flashing must be continuous.

**Attachment to house**

Where supported by attachment to an exterior wall, decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads as applicable with a minimum 1/2-inch diameter fastener. Such attachment shall not be accomplished by the use of toenails or nails subject to withdrawal. Where positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting.

**Drawings Required for Building Permit**

- SITE PLAN – This should show the location of the deck on the lot and the distance from all property lines.
- DECK PLAN – A plan drawn preferably at 1/4 scale (1/4" equals a foot). This plan should show all framing sizes and spacing, location and depth of footings and other structural supports. Include planters, seats, stairs, etc.
- ELEVATION – Include an elevation if the deck is 30 inches or more above finish grade.

**Inspection Requirements**

FOOTING/POST-HOLES – Before post are set.

FRAMING – Before installing the decking (walking surface).

FINAL – After completion of all work (including trade work).

Note that any electrical work installed on decks must meet the current electrical code and will require proper permits and inspections.