

DECK AND STAIR REQUIREMENTS



GENERAL

DEFINITION OF A DECK: An exterior floor system supported on at least two opposing sides by an adjoining structure and/or posts, piers or independent supports. A deck may be attached to the structure (residence) or may be free standing.

Please submit one plot plan showing deck location, height from grade, and set backs from all property lines. Also, you must submit three sets of drawing. All drawings should indicate owner's name, address of job site, block and lot number. To draw your own plans, you must be owner and occupant of said property. If not, you will need drawings by a New Jersey Registered Architect or Professional Engineer.

Decks are to be designed for 40 pound per square foot live load plus dead load.

Guardrails and handrails to be designed to withstand a concentrated load of 200 pounds.

Fasteners for preservative treated wood and exterior use shall be of corrosion resistant material.

Fasteners for engineered connections (TECO, SIMPSON, etc.) and structural attachments (nails) shall be of the approved type, i.e., supplied by the manufacturer (TECO, SIMPSON, etc.). Deck screws and common galv. nails are NOT permitted in joist hangers, etc., per manufacturer.

Wood for exterior use to be preservative treated or other naturally durable wood.

FOOTINGS

Must comply with IBC 2006 NJ Edition.

The footing shall be a minimum of 12 inches in diameter and at a depth which is below the frost level (36 inches).

The footing can also be eight inches of concrete placed in the bottom of the 36" deep hole. The post would extend from the top of the concrete to the bottom of the girder. The backfill material must be well compacted around the post. The minimum strength of the concrete shall be 2500 psi.

The diameter of the footing shall be eight inches larger than the largest dimension of the post.

Example: 4 x 4 post = 12" in diameter
4 x 6 post = 14" in diameter
6 x 6 post = 14" in diameter

LUMBER

All lumber used in the construction of the deck shall be pressure treated with .40 CCA or be of natural decay resistant wood (heartwood of redwood, blackwood, black locust or cedar). All carpentry work shall be in accordance with chapter 23 of IBC 2006 NJ Edition.

METAL CONNECTORS

The following are the locations and model number of the metal connectors to be used. The examples shown are Simpson Connectors. Any approved metal connector can be used.

Post to Concrete Footing -	Simpson ABE44 or equivalent
Post to Girder -	Simpson LPC4 or equivalent
Joist to Girder -	Simpson H3 or equivalent
Joist to Ledger Board -	Simpson LU210 or equivalent

Direct contact of ACQ treated lumber with aluminum, steel, or iron products is not recommended. This includes flashing, lag, and anchor bolts. Utilize the fastener manufacturer or lumber recommendations. This information should be readily available from the fastener supplier.

GIRDERS

Joints in girders must be directly above the support columns. Split girders must be secured with 2 ½ " galvanized bolts.

Maximum Span for One Story		Greater than One Story
2-2" x 6"	5' 0"	4' 0"
3-2" x 6"	6' 0"	5' 2"
2-2" x 8"	6' 4"	5' 6"
3-2" x 8"	8' 0"	7' 0"
2-2" x 10"	8' 0"	7' 0"
3-2" x 10"	9' 0"	8' 0"
2-2" x 12"	9' 0"	8' 0"

Note: 4 x 4 posts may not exceed 8' in height

FLOOR JOISTS

40 lbs Live Load (Treated SYP)

Size	Spacing on Center	Max. Clear Span
2" x 6"	16"	8' – 6"
	12"	9' – 4"
2" x 8"	16"	11' – 3"
	12"	12' – 4"
2" x 10"	16"	14' – 4"
	12"	15' – 9"
2" x 12"	16"	17' – 5"
	12"	19' – 0"

CANTILEVER

Under floor joist, the maximum cantilever allowed by code is two feet. For longer cantilevers, a set of calculations proving the code design limits and safety of the extended lengths are being met. These calculations must be signed and sealed by an architect or professional engineer. A cantilever attached to a house cantilever may not exceed four feet.

LEDGER

A board against the house securely attached with ½ " diameter galvanized lag bolts of sufficient length to bolt firmly to a rim joist. Lag bolts shall be spaced 16" on center in a staggered pattern. Provide galvanized washers between the bolt head and wood. Through bolting with a washer on the outside and a washer and nut on the inside of the building is also acceptable and required for houses with engineered wood construction.

FLASHING

Provide continuous corrosion resistant flashing along the ledger in such a manner as to prevent the passage of moisture into the wall, any untreated wood, or siding. Exception: Not required if against vinyl siding, metal siding (provided a shim is used) or masonry. Shims must not crush the siding when bolts are tightened.

GUARDRAILS

Guardrails on all decks and stairs 30" or more above grade to be a minimum of 36" high above deck and minimum of 36" high measure above stair nosing. They shall not have an ornamental pattern that would provide a ladder effect. Guardrails shall be constructed for a concentrated load of 200 lbs. applied at any point and direction along the top railing member. The in fill area of the guard system shall be constructed for a

horizontal concentrated load of 200 lbs applied on a one sq. ft. area at any point. Guardrail baluster openings to be less than 4" wide and unclimbable.

A stairway with three or more risers is required to have guardrails on both sides measuring 34" or more in height above the leading edge of the tread. Balusters must have two screws or nails at the top and the bottom.

HANDRAILS

Handrails are required on all stairs with 3 or more risers.

Handrail grip size to be a circular cross section with an outside dimension of 1 ¼" to 2" and a perimeter dimension of 4" to 6 ¼" with largest cross sectional dimension of 2 ¼".

Handrails to be 30" to 38" high measured above the stair nosing.

Handrails may project from each side of a stairway 3 ½" into the required width of 36".

Handrails are to be smooth and free of any sharp edges or splinters. A handrail and any wall or other surface adjacent to the handrail shall be free of any sharp or abrasive elements. The clear space between the handrail and adjacent wall or surface shall not be less than 1 ½". Edges shall have a minimum radius of 1/8".

STAIRWAYS

Stairs to be a minimum of 36" wide.

Minimum tread width to be 9". Maximum riser height to be 7 ¾". ¾" to 1 ¼" nosing required on treads less than 11" wide.

Stair risers to be closed or to be open less than 4".

Triangle opening formed by riser/tread and bottom of guardrail to be less than 6" diameter.

Dimensional uniformity: All risers to be equal, all treads to be equal. There shall not be a variation exceeding 3/16" in the depth of adjacent treads or in the height of adjacent risers. The tolerance between the largest and smallest riser or tread shall not exceed 3/8" in any flight of stairs.

Exception: Where the bottom riser adjoins a sloping walk or driveway which has an established grade and serves as a landing, the variation in height of the bottom riser shall exceed three inches every three feet of stairway width.



LATERAL BRACING

All detached decks, decks 8' above grade, or where situations warrant, require diagonal bracing between girder and posts.

CONNECTIONS

All connectors, nails, screws, bolts, and related hardware shall be hot-dipped zinc coated (galvanized), stainless steel, silicon bronze, copper, or other corrosion resistant material.

INSPECTIONS REQUIRED

1. The bottom of footings before placing concrete
2. Frame – before covering with decking
3. Final

FEE FOR PERMIT

The minimum value of all decks is based on using \$22.00 per square foot. The value is then multiplied by \$24.00 per thousand to arrive at the fee. There is also a DCA fee added.

DECK AND STAIR PERMIT SUBMISSION REQUIREMENTS

In order to process the building permits for decks and stairs, the following information is required:

- ◆ Wood material used, e.g., preservative treated yellow pine, cedar, redwood, etc.
- ◆ Foundation system used, e.g., posts set in concrete 3' deep or posts set on concrete piers with metal post bases/plates and/or anchor bolts. Provided diameter/dimension of concrete piers and depth and exact location of piers footings.
- ◆ Height of deck above grade.
- ◆ Girder size, spacing and span with type of attachment/connector to posts and joist hangers if required.
- ◆ Size of ledger at house with flashings, joist hangers and bolt size and spacing.

- ◆ Joist size, spacing and span of joist hangers.
- ◆ Decking size, spacing, span and type of galvanized connectors.
- ◆ All stair construction details.
- ◆ Guardrail and handrail details on deck and stairs.
- ◆ Foundation/anchorage system for stair stringers and handrails and/or guardrails.



- ◆ $\frac{1}{4}'' = 1' - 0''$ scale drawing showing exact location of all structural members, e.g., posts, girders, joists, etc.
- ◆ Owner to sign all permit documents, such as drawings, notes, sketches, etc., as preparer.

**If you have any questions, please contact the office
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