

CITY OF CEDAR FALLS
DEPARTMENT OF DEVELOPMENTAL SERVICES
INSPECTION SERVICES DIVISION
PHONE 268-5161

RESIDENTIAL WOOD DECKS

These requirements were compiled for convenience and based upon the International Residential Code.

General

Building permits are required for the construction or installation of wood decks which are attached or independent from any dwelling or garage.

Procedures

Check with the Zoning Administrator for the required setbacks.

Complete supplied site form, providing a scaled plan of the property involved and all information requested as per instructions.

Complete building permit application form with all applicable information.

Submit both forms to our Division after completion.

After forms have been approved by the concerned Department or Division, a permit will be issued.

Permits and Inspections

Permit fees are based on the determined valuation. (A fee schedule is available upon request.)

Check with the Electrical Inspector for requirements regarding the illumination of steps or exterior doors leading to or from decks. An additional permit may be required if any wiring has to be installed.

Inspections are required as per Inspection Record Card which is received with the issuance of the building permit. It is the responsibility of the permit holder to call for the required inspections.

Construction

Pier footings are to be minimum of 42" in depth, measured from the grade to the bottom of the footing. For a sloping or terraced grade, the depth shall be measured to assure coverage of both vertically and horizontally. See cross section.

Diameter of footings shall be 8" unless post spacing exceeds 8'-0" or joist length exceeds 12'-0". Dimensions exceeding those mentioned, the diameter of footing shall be 12". (An 8" diameter footing can be flared to 12" at the bottom within the last third of the depth.)

Wood exposed to the exterior elements shall be approved treated lumber or of wood with natural resistance to rot or decay (the heartwood of bald cypress, black locust, black walnut, the cedars and redwood species). Treated wood shall bear a grade stamp indicating lumber species, grade identification quality standards number and proper exposure condition.

Note back page for acceptable handrail detail.

Cantilevered joist over support beam should not extend more than 2' nor should the beam extend more than 2' past the support post unless approved by the Building Official.

Joist tails shall have not less than 1 1/2" of bearing on wood or metal.

Joist headers more than 6' in length shall be supported on the ends by approved metal framing hangers.

Flashing should be installed at the connection point of deck and existing structure when exterior finish material is cut into.

Wood decking may be of 1" nominal material when joist or stringers do not exceed 16" o.c. spacing, 5/4" and 2" nominal material may be used on joist 24" o.c. spacing.

All nails shall be double-dipped galvanized or stainless steel. Double-dipped galvanized steel bolts are required to be a minimum of 1/2" diameter with washers.

Exterior doors are to be provided with 36" x 36" landing outside no more than 7 3/4" below the interior floor elevation provided the door does not swing over the landing.

Decks 30" or more above finish grade shall be protected by a guardrail of not less than 36" in height. Open guardrails shall have intermediate rails or side rails installed, such that a 4" sphere cannot pass through the openings. Guardrails shall be built according to the table attached.

Stairs servicing decks shall have a maximum rise of 7 3/4" in height and minimum of 10" tread width. A handrail shall be installed on at least one side at a height of 34" to 38" above nosing of tread. Handrails for stairways shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails adjacent to a wall shall have a space of not less than 1 1/2 inch (38 mm) between the wall and the handrails. If stairs are 30" above grade guardrails are required on open sides. Stair width shall be minimum of 36". Stair treads shall be supported underneath by bearing on concealed cleats or on cut stringers. **OPEN RISERS ARE PERMITTED PROVIDED THAT THE OPENING BETWEEN TREADS DOES NOT PERMIT THE PASSAGE OF A 4" DIAMETER SPHERE.**

Depending on construction techniques, decks more than 6' in height, a supporting end may be required to provide diagonal bracing to withstand lateral loads.

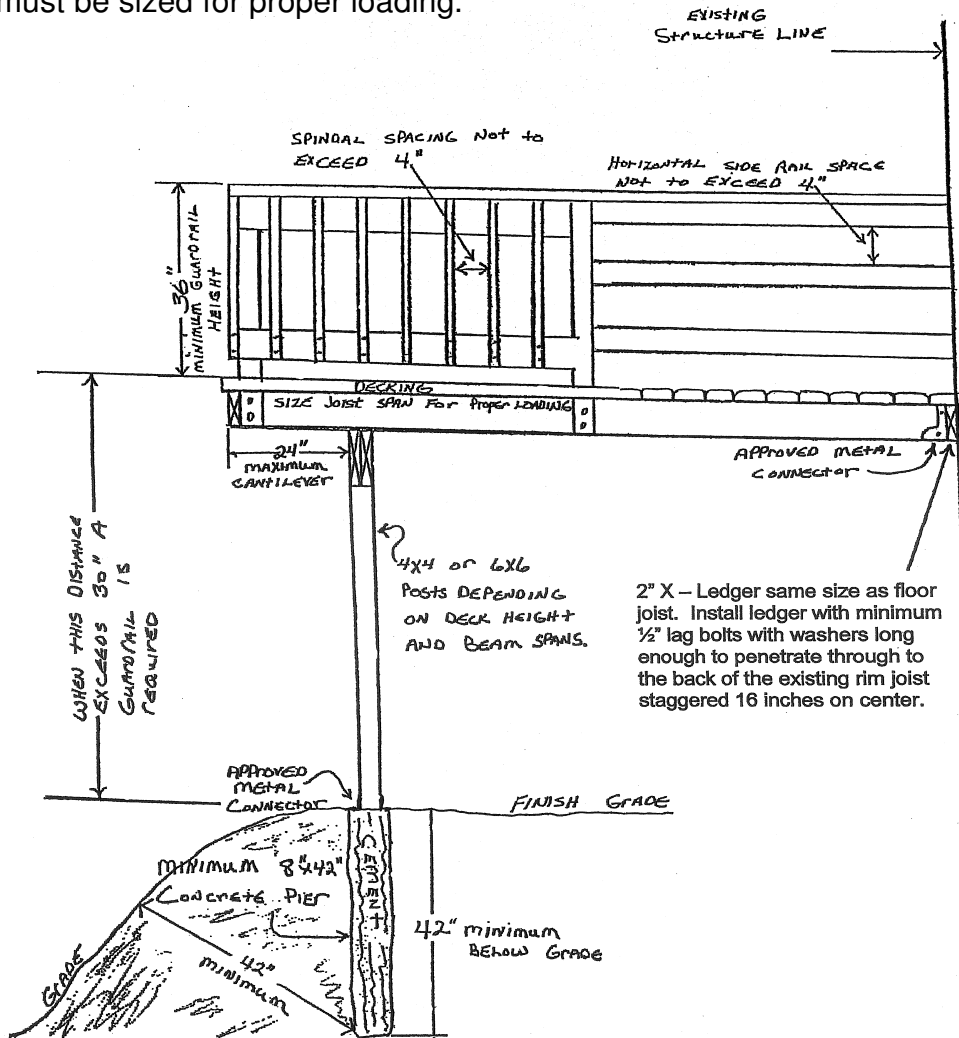
These requirements may not be appropriate for future placement or conversion to a screened porch or 3-season (enclosed) porch. The specified footing size will not be adequate for roofs or covers being added at later dates. These requirements do not apply to commercial decks, multi-family decks or required exterior exit balconies, which are subject to greater live loads.

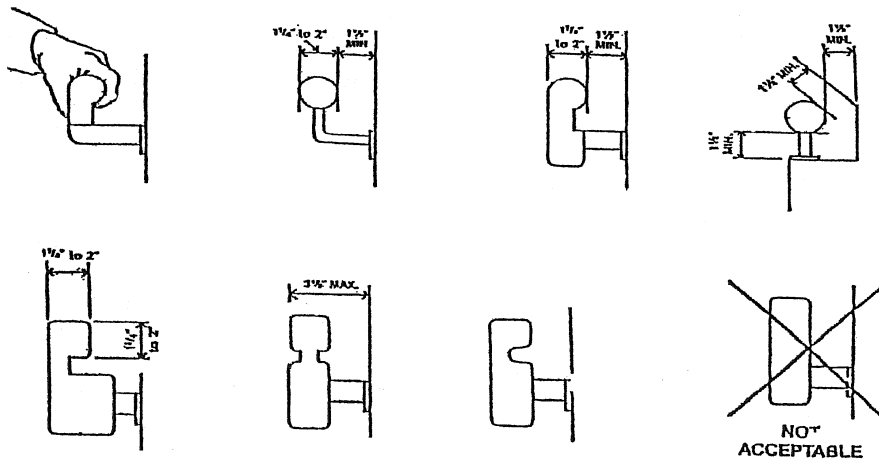
Deck ledger is required to be attached to the house with minimum 1/2" double-dipped galvanized lag bolts with washers spaced staggered at 16" on center long enough to penetrate through to the back of the house rim joist.

Support beams shall be a minimum of 2-ply nailed together.

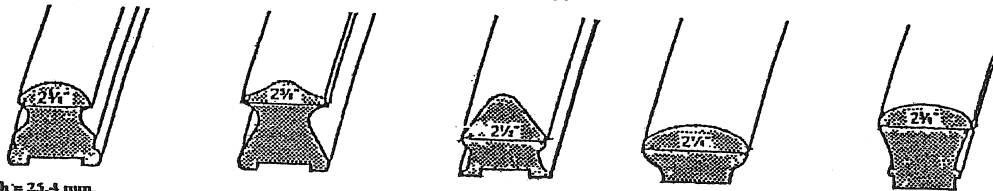
RESIDENTIAL WOOD DECK

This cross section is for example only. Styles will vary per individual preference. Beams and joist must be sized for proper loading.



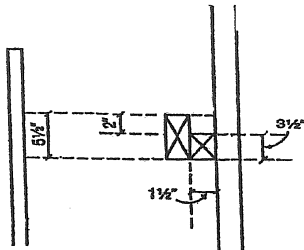


NOTE:
OTHER SHAPES MAY BE ACCEPTABLE
IF THEY PROVIDE AN EQUIVALENT
GRIPPING SERVICE. SEE THIRD
PARAGRAPH OF SECTION 1006.9.



For SI: 1 inch = 25.4 mm.

FIGURE 10-59—ACCEPTABLE HANDRAIL DETAILS
(Section 1006.9)



For SI: 1 inch = 25.4 mm.

FIGURE 10-58

Q: I am requesting a code interpretation of Section 1006.9, specifically that portion which states, "The handgrip portion of handrails shall not be less than 1 1/4 inches (32 mm) nor more than 2 inches (51 mm) in cross-sectional dimension . . ." The detail in Figure 10-58 represents a handrail typically used in this area where a 2 by 4 is fastened to the wall and runs continuously the length of the stairs. A 2 by 6 is then properly prepared (corners rounded and surfaces smoothed) and fastened to the 2 by 4 with 2 inches (51 mm) of the 2 by 6 protruding above the 2 by 4.

Does the 1 1/4- by 2-inch (32 mm by 51 mm) protruding portion of the 2 by 6 provide a conforming handrail?

A: Figure 10-58 does not indicate a conforming handrail. The examples in Figure 10-59 are details deemed to be acceptable.

The intent of the wording in Section 1006.9 is to establish handrail geometry which will satisfy the intended function of a handrail as a gripping surface. The handrail's graspability should be a major consideration when evaluating the acceptability of equivalent shapes.