



Deck Permitting and Installation Requirements

Phone: 515-223-6221
Fax: 515-457-3091
www.cityofclive.com

Deck:

An unroofed platform which projects from the outer wall of a building and is attached to the ground.

(See reverse for assistance with designing your deck).



A permit and fee is required for all decks and fences. If Restrictive Covenants for the property are on file with the applicable county, the more restrictive requirements apply.



INSPECTIONS

- An inspection is required for footings and when the structure is complete.
- Inspections must be scheduled at least 24 hours in advance.

1. Decks not exceeding fifty (50) square feet are permitted in any yard provided the minimum side yard setback of 5 feet is maintained.
2. Decks larger than fifty (50) square feet are permitted only in the rear yard.
3. The minimum rear yard setback of 5 feet and side yard setback of 2 feet must be maintained for all decks (unless specified elsewhere in the city code).
4. A deck is NOT permitted to encroach over or otherwise impede an easement on file with the applicable county recorder.
5. Footings shall be a minimum 42" below grade.
6. All deck materials shall be approved decay-resistant species.
7. Decks must have a ledger board (minimum 2x8) fastened directly to the band joist. Siding must be removed behind ledger boards and ledger boards must be appropriately flashed and sealed.
8. 1/2" diameter (min.) lag screws or bolts, with washers, spaced at 2 screws or bolts every 16" O.C. must be used for attaching ledger boards. Other listed fasteners approved for this application will be accepted. All fasteners shall be listed for the application.
9. Ledger boards attached to cantilevered sections will need reviewed and possibly engineered for loads imposed.
10. Embed posts in the concrete footing or attach with approved connectors.
11. Post to beam attachment will require 2 - 5/8" diameter (min.) through bolts with washers if not let into posts. Fasteners shall be listed for the application.
12. Maximum cantilevers on the beams is 2' past posts. Maximum cantilevers on deck joists is 3' when joists are 2x8 and larger.
13. Guardrails are required if deck height is 30" or more above grade. If guardrails are required, they must be a minimum 36" tall from deck platform to top of rail and they must have intermediate railings or an ornamental pattern such that a sphere 4" diameter cannot pass through.
14. Stairs must meet 7 3/4" maximum finished riser height on all risers. (Including riser down to finished grade) Minimum tread depth is 10" and a nosing shall be provided of not less than 3/4", but not more than 1 1/4" on deck stairs with solid risers.
15. Maximum stringer span is 9' with 3 stringers. Any span greater than this requires additional post support midway through span.
16. Handrails are required on deck stairs with 4 or more risers or top of deck is 30" above grade. Handrails shall be 34"-38" above sloped plane adjoining the tread nosing.
17. Handrails installed due to top of deck being 30" or more above finished grade must have intermediate railings or an ornamental pattern such that a 4 3/8" diameter sphere cannot pass through.
18. All decks shall be supported and braced to resist loads vertically and laterally.

(See reverse for assistance with designing your deck)

Call Before You Dig!
1.800.292.8989
Call the toll-free number at least
48 hours
prior to ALL excavations in Iowa.



Step 1: Design and Plan Your Deck

If you do not have a ready-made design you'll have to design a plan yourself.

First, draw a simple sketch of the deck—decking, rails, footing, posts and beams, then insert the dimension. To save money, stick to standard lumber sizes and lengths.

Use treated southern yellow pine.

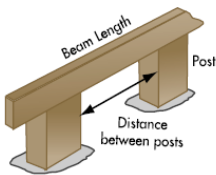
Step 3: Find the Post Size

To find the appropriate post size, use the chart below for each post. Embed the post in the concrete footing or attach with approved connectors.

Height in Feet	Load area supported by post				
	48 sf	72 sf	96 sf	120 sf	144 sf
Up to 6	4 x 4	4 x 4	6 x 6	6 x 6	6 x 6
Up to 8	6 x 6	6 x 6	6 x 6	6 x 6	6 x 6

Step 4: Find the Beam Size

To find the beam size to rest the joist on, refer to the chart below.



If the distance between posts:	Use:
is less than or equal to 4 feet	(2) 2 x 6
Is more than 4' or less than 6'	(2) 2 x 8
Is more than 6' or less than 8'	(2) 2 x 10
Is more than 8' or less than 10'	(2) 2 x 12
Is greater than 10 feet	Consult Designer

Step 5: Find the Joist Span

To find the joist size and span, use the chart below. Notice that the span allowed by different joist sizes is dependent on 16 inch or 24 inch spacing between joists. Attach each joist to the ledger board that is attached to the house and rest the other end on the beam.

Joist Size in Inches	Max Joist Spacing		Your Deck Span
	16" o/c	24" o/c	
2 x 6	9 ft. 4 in.	8 ft. 2 in.	
2 x 8	12 ft. 3 in.	10 ft. 9 in.	
2 x 10	15 ft. 8 in.	13 ft. 8 in.	
2 x 12	19 ft. 1 in.	16 ft. 8 in.	

Step 7: Design the Railing

The last step is to design the railing. Use the table below to assist you. A guard railing is required if the decking surface is more than 30 inches off the ground. A 4" sphere shall not be able to pass through any openings and the rails shall be arranged so that a ladder effect is not created.

Distance Between Posts	Post Size	Cap Size
2 ft. to 3 ft.	2 x 4	2 x 4
3 ft. to 4 ft.	2 x 4, 4 x 4	2 x 4, 2 x 6
4 ft. to 6 ft.	2 x 6, 4 x 4	2 x 6

Thanks to the City of Des Moines Permit & Development Center for their assistance with this form.

Step 2: Find the Footing Size

To find the footing size use the equations below to find the load on the corner posts (equation 1) and on the intermediate posts (equation 2).

Equation 1

$$(1/2 \text{ PS } 1) \times (1/2 \text{ span}) = \text{Load Area} \times (50 \text{ psf}) = \text{Load (psf)}$$

$$\text{_____} \times \text{_____} = \text{_____} \times 50 = \text{_____}$$

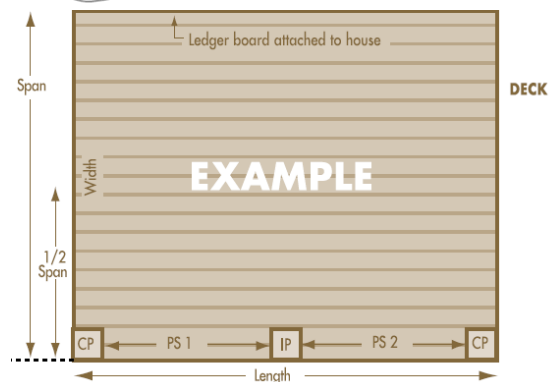
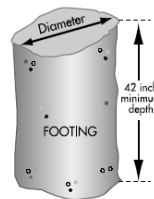
Equation 2

$$(1/2 \text{ PS } 1 + 1/2 \text{ PS } 2) \times (1/2 \text{ span}) = \text{Load Area} \times (50 \text{ psf}) = \text{Load (psf)}$$

$$(\text{_____} + \text{_____}) \times \text{_____} = \text{_____} \times 50 = \text{_____}$$

Using Equation 1 and Equation 2, refer to the chart to determine the footing size for each post.

Load (psf)	Posthole Diameter
500 or less	8 inches
501 to 1000	10 inches
1001 to 1500	12 inches
1501 to 2000	14 inches
2001 to 2500	16 inches



CP = Corner Posts
 IP = Intermediate Posts
 PS = Measurement between centers of posts
 Span = Outside width of deck

psf = Pounds per square foot
 Total Loads = Live Load + Dead load
 Total Loads = 50 psf
 Cantilever = Where joist and decking extend over posts

Step 6: Find the Decking Material Span

Next you need to determine the appropriate deck surface material. Shrinkage will occur when treated materials dry out. To ensure the spacing will be no more than 1/4" between boards AFTER the material dries out, install deck surface boards tightly together—with no more than 1/8" spacing.

Laid Flat	Material Size	Joist Spacing
	5/4 x 4	16"
	5/4 x 6	16/24"
	2 x 4	16/24"
	2 x 6	16/24"
Laid on Edge	2 x 4	48"

