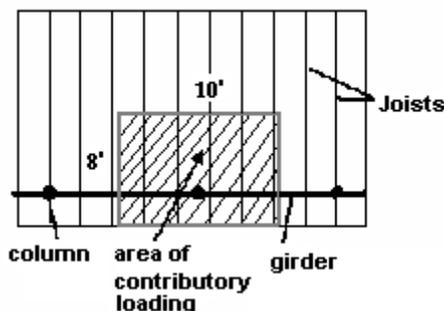




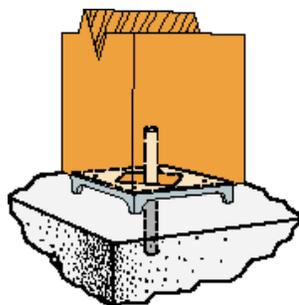
# FAQ

## DECK DESIGN

- Q. I would like to build a deck. Do I need a permit?
- A. Yes, Homeowners are required to obtain a permit to construct a deck.
- Q. How large a deck can I build?
- A. An uncovered deck that is elevated above ground level may project half the distance of the minimum required yard setback, but no more than fifteen (15) feet.
- Q. How deep do footers have to be?
- A. 32" to the bottom of the footer.
- Q. What are the required dimensions for the footers?
- A. The size of the footers depends on the contributory loads to be carried; that is to say, how much of the deck load is being carried by each footing; however, the minimum diameter is 12". The live load for a deck is 40 lbs. per square foot and the dead load is 10 lbs. per square foot, giving a total of 50 lbs. for each square foot of deck. This load is carried to the ground by the beams and columns that support the joists. The ground is assumed to have a bearing capacity of 2000 lbs. per square foot so the size of the footing is determined by the area of the deck carried to a column multiplied by 50 lbs. and then divided by 2000. The example below shows how to determine the area of contributory load. Let's say that the area below is 8' by 10'. That would give an area of 80 square feet, so figure  $(80 \times 50) / 2000$  for a footer size of 2 square feet. The area of a circle is calculated by the formula  $\pi r^2$  (pi times radius squared) so for this deck, a 1'8" diameter footing would be required.

**Example Footer Sketch**

- Q. Do I need to fill the hole to the top with concrete?
- A. No, you need a minimum of 8 inches of concrete under the column. One thing to remember, though, is that even pressure treated lumber will rot over time when buried in the ground so it is recommended that you pour your footings up to grade and use a post base to keep the wood column off the ground.



- Q. What size lumber do I need for my floor joists?
- A. Although there are many factors that may affect joist spans, such as cantilevers, the chart below is a basic guide that can be used to plan your deck. It assumes the use of #2 Southern pine, pressure treated, and installed at 16" on center as this is the typical lumber used for decks.

Size	Allowable Span
2x6	9'9"
2x8	12'10"
2x10	16'1"
2x12	18'10"

- Q. When do I need a guardrail around the deck?
- A. The International Residential Code states that "Porches, balconies or raised floor surfaces located more than 30 inches above the floor or grade below shall have guards not less than 36 inches in height." Although the requirement for needing guardrails is 30" above grade, it is recommended that a rail be installed if the deck

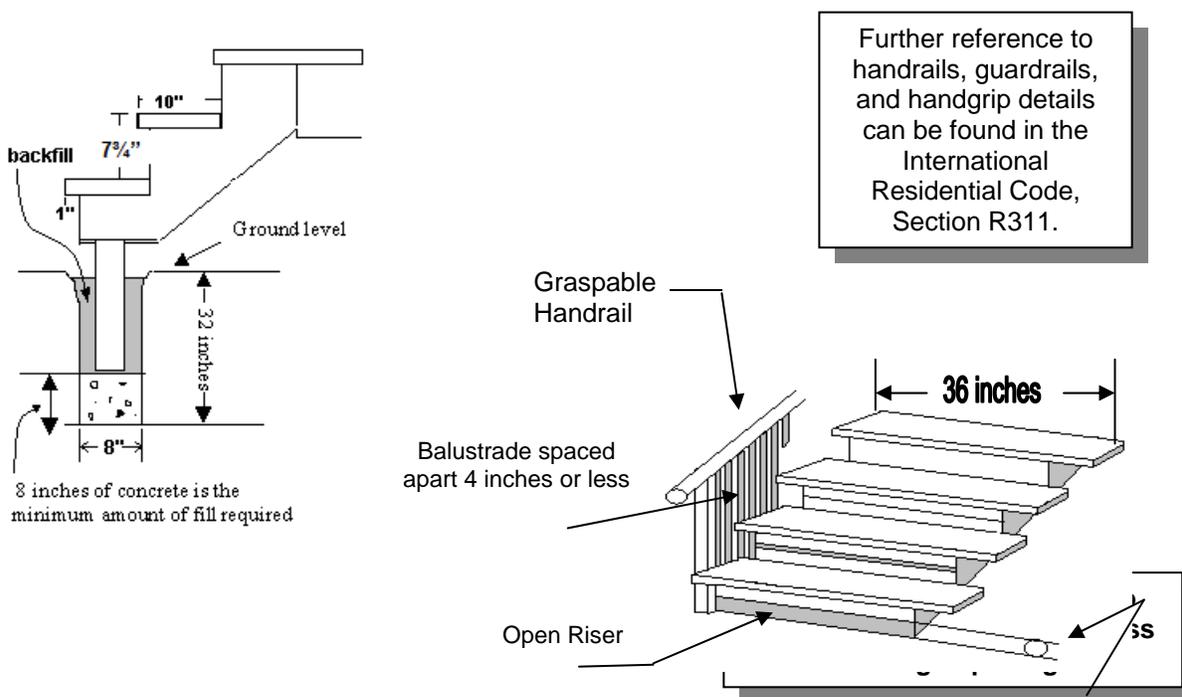
is more than 18" above grade. Guardrails are also required on both sides of steps that are more than 30" above grade.

Q. How far apart do my balusters have to be?

A. Building code requires that guardrails "shall have intermediate rails or ornamental closures which do not allow passage of an object 4 inches or more in diameter." Simply put, if you can pass a 4" ball through any opening in your guardrail, it will not pass code. In addition, guardrails cannot be ladderlike.

Q. What are the dimensions I need to use for my stair?

A. The minimum tread dimension must be at least 10" overall (9" tread with a 1" nosing). That means that the tread must extend at least 1" past a riser. The riser dimension, or height from tread to tread, can be no more than 7 $\frac{3}{4}$ " and should not vary from step to step. The stair must be a minimum of 36" wide. Risers cannot have an opening greater than 4 inches.



***This drawing does not encompass all possible variations in the construction of stairs (other codes may apply). Please discuss these variations with the Plan Examiner.***

Q. Do I need to have my footings inspected?

A. New Castle County will currently allow footing inspections, for decks only, to be completed by use of photo documentation. Please include a picture of the deck layout in regard to the footing locations (Site photo). Also, please have a photograph depicting the depth and the width of the hole provided for the footing (Acceptable media would be Polaroids, processed photos, or digital images).

Q. When do I need a handrail on my steps?

A. A handrail is required when there are four or more risers. The handrail height shall be between 34" and 38" measured vertically from the nosing of the tread.

Q. How should my deck be attached to my house?

A. This is one of the most critical areas of deck construction, as up to half the weight of the deck hangs on the house. The ledger board (the board that the joists will be attached to) should be securely bolted to the bandboard, if nominal lumber, of the house framing with a minimum of 1/2" bolts. See the chart below to determine proper sizing and spacing requirements. If the ledger board is to be attached to the bandboard of the house framing, and the bandboard is a manufacture wood product (MWP), the attachment must be made strictly in accordance with the manufacturer's specifications. All siding must be removed so that a good connection is made and compatible flashing shall be installed. If your ledger board is to be attached to masonry or concrete, proper anchoring systems must be used. Your local hardware store can show you different products available for this purpose.

JOIST SPAN	BOLT SIZE & SPACING
10'	1/2" @ 2' 7/8" @ 2'9"
10' – 15'	1/2" @ 1'4" 7/8" @ 2'
15' – 20'	1/2" @ 1' 7/8" @ 1'6"

The FAQ series only summarizes or highlights portions of the New Castle County Code. In all applications, the New Castle County Code must be consulted. The language in the Code prevails over the FAQ.

05/14/03  
Revised: 02/24/06  
12/15/08  
07/21/15