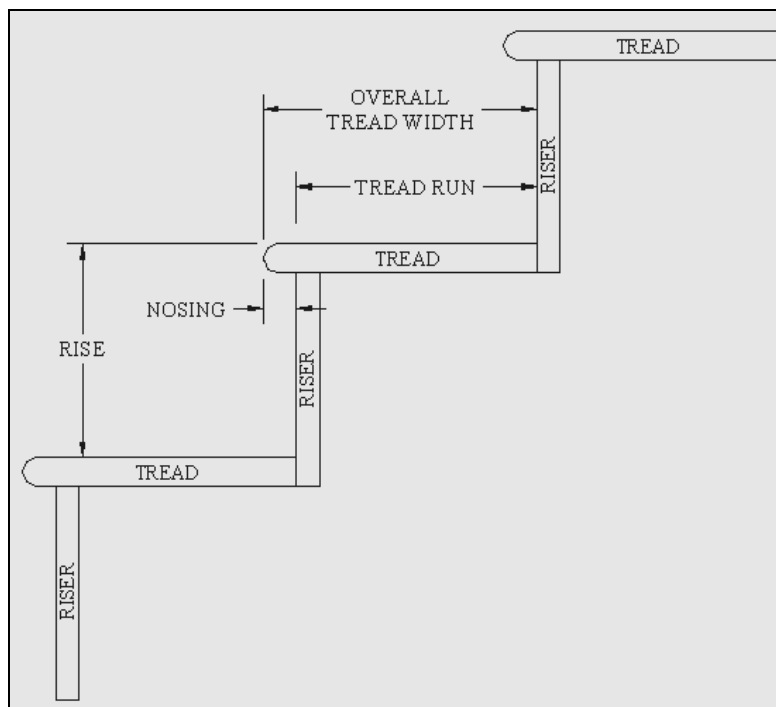




Taking You To The Next Level

Business Evolves.... Who's Your Partner?

Stair Layout Guide





The information in this manual will guide you through a simple stair layout. For many shapes, it is best for a professional stair designer to do the layout. Some situations with a more complex stair layout include:

- Stairs with multiple sections, especially winder sections
- Curved stairs
- Stairs that are on top of each other (laying out multiple related stairs)
- Stairs with open balustrade: Your stair layout will determine your rail layout. The railing system will be designed to fit each staircase specifically and can be more complicated than the stair layout itself.

If you find that your project falls into one of the more complex categories, contact Designed Stairs with your framing dimensions (see page 8 for more detailed information) and we'll be happy to assist you with your stair layout. Designed Stairs provides decades of experience to help you create your stair, no matter how elaborate.

Whether you are a die-hard D.I.Y.'er or a trade carpenter with a stair project that is getting beyond your abilities, we can help! Designed Stairs offers free stair layout and design on our pre-engineered, fully assembled stairs. Visit our website and see more:

<http://designedstairs.com/products-stairs/>

Let's team up, and you can sign your name to the most gorgeous custom-built stair and amaze your friends and clients!

Do you have a general shape in mind for your stair?

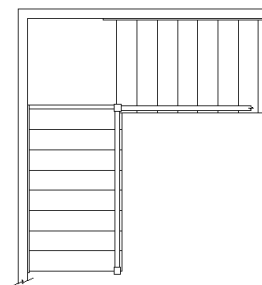
- A “straight” stair will run in one direction with the treads all being the same size and shape.

A straight stair has the simplest layout and will require the least amount of space.



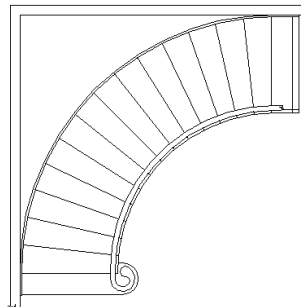
- A “landing” stair will have one straight section up to a landing platform with another straight section above the landing to the second floor. The upper section is usually positioned 90 degrees to the left or the right.

A landing stair will typically require 12 sq. ft. more floor space than a straight stair.



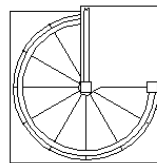
- A “curved” stair will have a large curve ascending to the left or the right.

A curved stair will need the most floor space. For an 8' ceiling, you will need approximately 10' x 12' of space.



- A “spiral” stair has a very tight radius that winds around a center post. Spiral stairs may not be used as a main stair, only as a secondary stair.

Spiral stairs can require as little as a 5' x 5' space. For smaller spaces, we suggest a ladder.



What direction is your stair?

If you were to start at the bottom of your stair and walk up, in which direction would you turn as you walked?

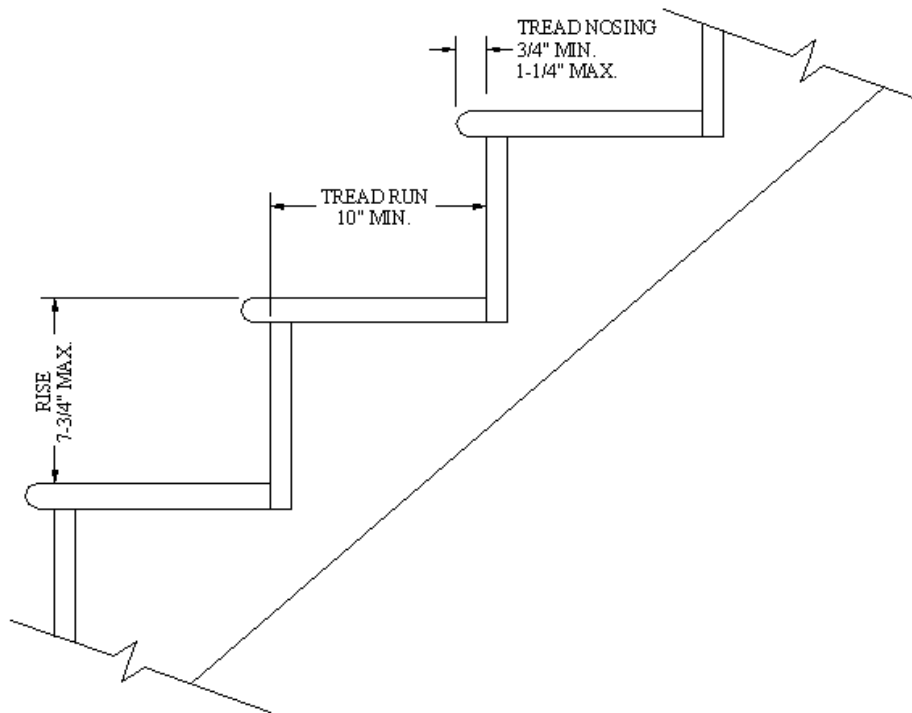
- If you turn to your left as you ascend, it is a “left hand” stair
- If you turn to your right as you ascend, it is a “right hand” stair
- A straight stair will continue without turning

Will this stair be inspected for compliance with local building codes?

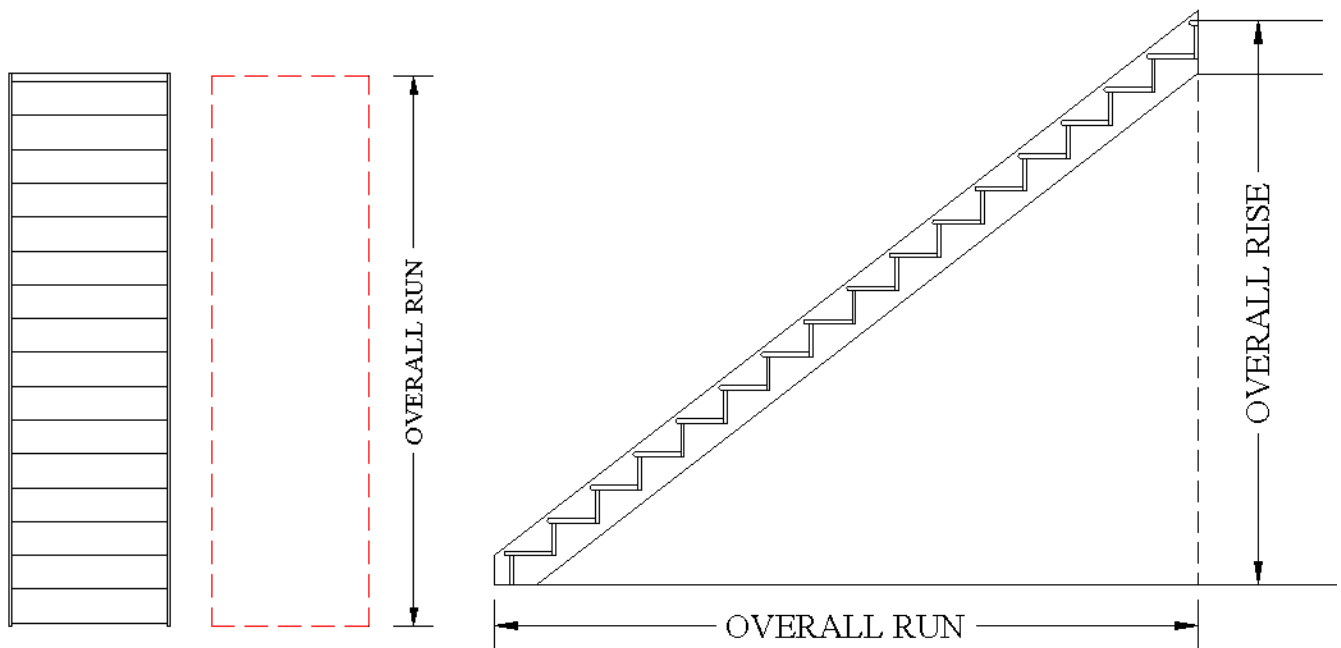
- Which building code does the inspecting office follow?
- You may need to talk to the building inspector or research the codes online.

The figure below shows a few of the basic requirements that are typical of most stair building codes (taken from International Residential Code).

These dimensions will be further explained later on in the guide.

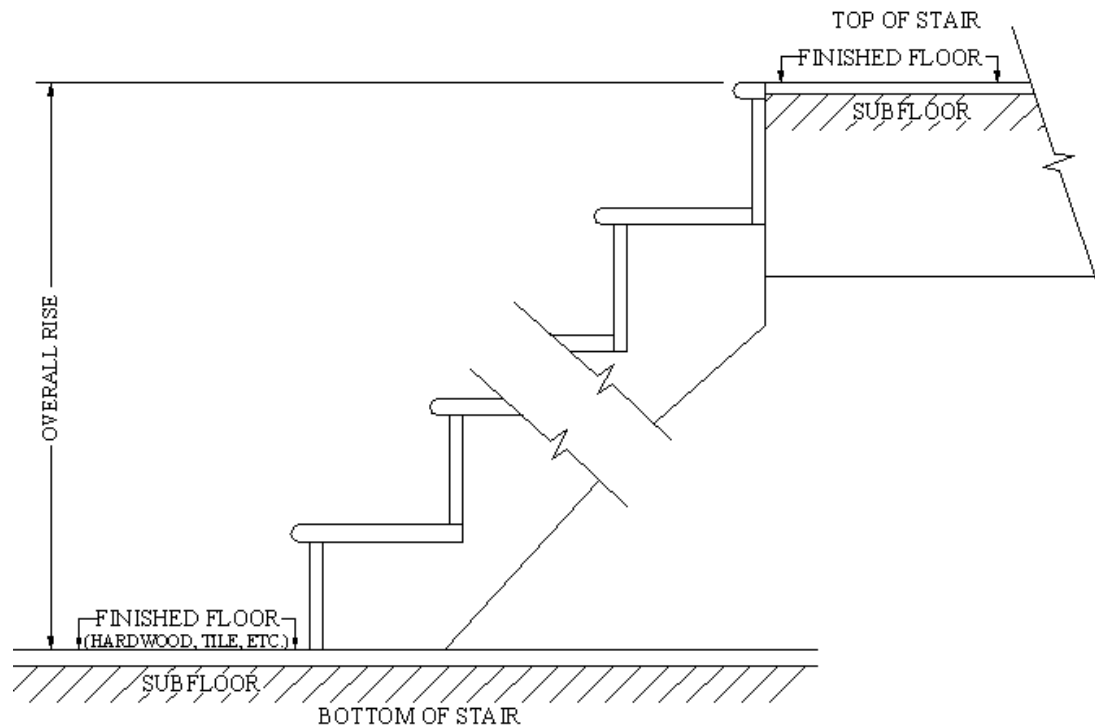


The guidelines in the next steps will help estimate the space needed for your stair.



1) What is the overall rise (vertical dimension) of your stair?

- The overall rise is the measurement from your lower floor to the upper floor.
- The flooring of your framing is called the “subfloor” and your flooring material, such as tile or hardwood, is called the “finished floor”. Because the finished flooring material may be a different thickness on each floor, you will want to measure subfloor to subfloor first and then consider the addition of the finished flooring material.



- First, measure the distance from the upper subfloor to the lower subfloor
Example: 124"

Now subtract the thickness of the lower finished floor

Example: 1" thick tile; $124" - 1" = 123"$

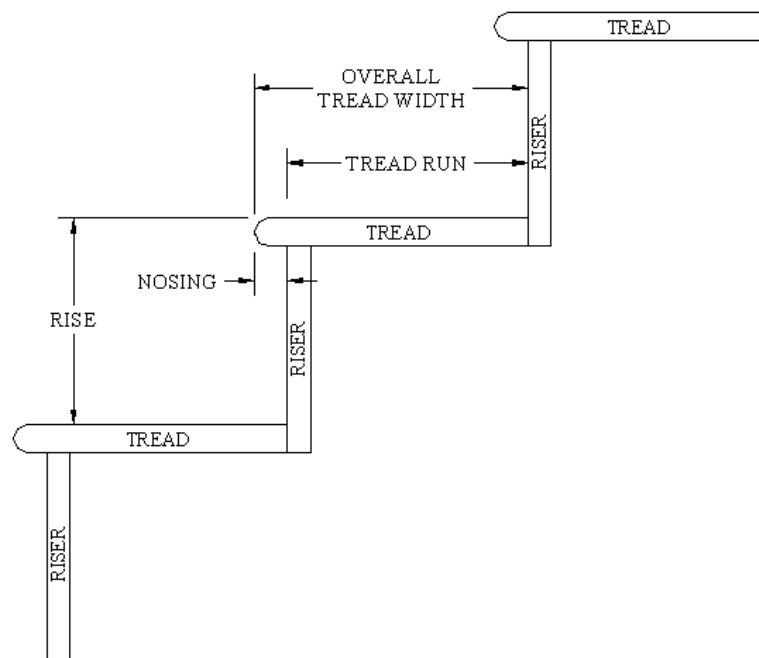
Then add the thickness of your finished upper floor

Example: $\frac{3}{4}"$ thick hardwood; $123" + \frac{3}{4}" = 123 \frac{3}{4}"$ or 123.75"

This dimension is your overall rise (from this example, 123.75").

2) How many risers will your stair have?

- First, consider the maximum rise required by building code (typically 7.75" maximum). The rise of the stair is the vertical distance from the top of one tread to the next. The rise multiplied by the number of risers will equal the overall rise.
- Start with your overall rise from step 3A and divide this number by a number of risers to calculate the rise; try different numbers of risers until you find one that results in a rise that will make code. Look for one that gives a rise somewhere between 7.25" and 7.75".
Example: Try 16 risers; 123.75" divided by 16 risers will give you a rise of 7.73", which would make code. Fewer than 16 risers would result in a rise greater than what code will allow. More than 16 risers would require more floor space, which is explained in the next steps.



3) How many treads will your stair have?

- For a straight stair, **there will always be one more riser than tread**. After finding a suitable number of risers from the previous step, subtract 1 to find the number of treads.
Example: the stair has 16 risers and would have 15 treads

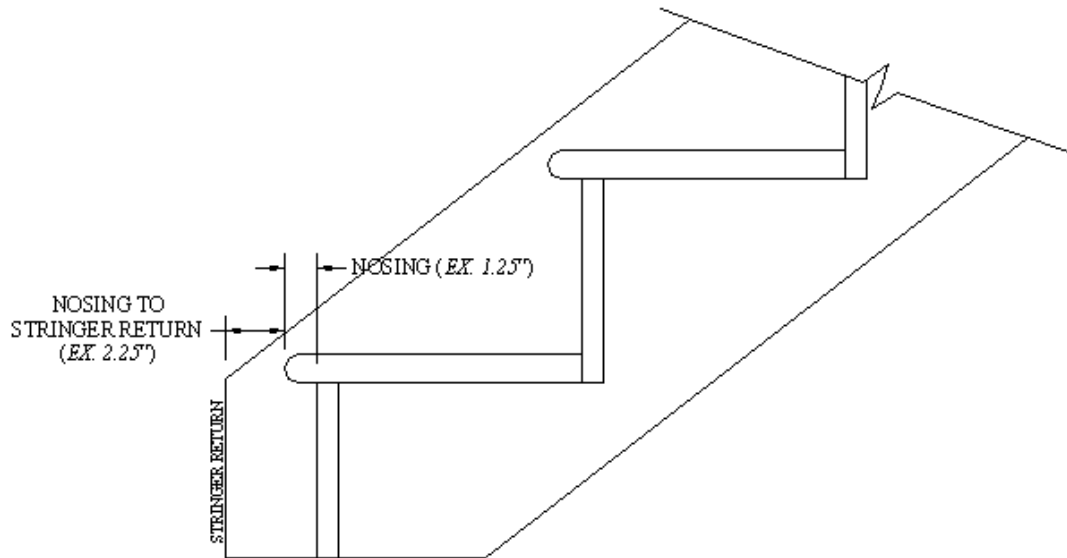
4) What is the overall run of your stair? Do you have enough floor space to fit the stair?

- First, consider the tread requirements by building code (typically 10" minimum run, 1.25" nosing). The run is the distance across the tread from riser face to riser face. The tread nosing is the width of tread that extends past the riser face.
- To find the overall run for a straight stair, multiply the tread run by the number of treads from step 3C. The tread run is typically 10"; wider treads will require more floor space and narrower treads may not make code. Then add other items that would increase the horizontal length of your stair:
 - The nosing of the first tread (*Example: 1.25"*)
 - The length which the stringer return extends past the first nosing (*Example: 2.25"*)
 - The thickness of the top riser where it attaches to the framing at 2nd floor (*Example: 1"*)

The result will be the overall run of your stair

Example: 15 treads x 10" tread run = 150"; $150" + 1.25" + 2.25" + 1" = 154.5"$

The overall run for the example stair would be 154.5"



We hope that you found this guide helpful in the layout of your stair project. Making sure that your stair is properly designed and you have enough space for it, at the beginning of your project will assure the best end results.

If you call Designed Stairs for help with your stair layout, the information we need to help you with your stair layout is:

1. What is the shape of the stair you want?
2. The overall rise (see section 1)
3. What are the dimensions of the (side) walls your stair will be next to? (a floor plan showing wall lengths is ideal).
4. Is there another stair or a stair well under this stair? If yes, then what is the length and width of that hole?

Call us or visit our website to get started <http://designedstairs.com/design-services/>