



The Engineered Stair Stringer System

Always check your local building codes before beginning any building project.

Be sure to wear the proper safety equipment when working with power tools.

We recommend first viewing the installation video prior to reading these instructions.

This product has been evaluated by ICC-ES under report ESR-1087.

Easy Riser List of Materials

- | | |
|---|--------------------------|
| 1 Calculator with a $\sqrt{\text{square root}}$ key | 5 Circular Saw |
| 2 2' Framing Square | 6 Cordless Drill |
| 3 Stair Gauges (optional) | 7 #2 Phillips Bit |
| 4 Recommended Fasteners:
#7 x 1-1/2" wood screws
or 10d x 1-1/2" long
common wire nails | 8 Clamps |
| | 9 Hammer |
| | 10 Tape Measure |

Installation Instructions



Step 1

Measure rise. Go to worksheet (**on the back page**). After completing the worksheet, refer to Stringer Sizing Charts for your particular application. (For this demonstration, we'll be using a 2x6.)



Step 3

Set riser dimension on the inside of the short leg of a 2' framing square. Set tread dimension on the inside of the long leg of the framing square. These dimensions are set with stair gauges.



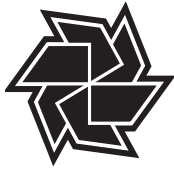
Step 2

Measure run to make sure that stair case will fit into framed opening.



Step 4

Lay a 2x6 across a sawhorse, and going from left to right, position the framing square on the 2x6 with stair gauges resting on top of the 2x6. Position the short leg of the square on your left hand side all the way to the end of the 2x6 (see photo at left). Make your first pencil line on the inside of the long leg diagonally following the square. Slide framing square from your left to your right until you reach the line marked in Step 3 with the inside of the short leg of the framing square. Repeat until required number of steps are marked.



Easy Riser®

The Engineered
Stair Stringer System



Step 5

Position the first Easy Riser on first line drawn. (Side "A" facing up.) Use the dimension from worksheet Box 6(b) that corresponds with the printed dimension gauge on the Easy Riser. This gauge should intersect and line up with the top edge of the 2x6 on this dimension. Secure Easy Riser to the stringer with recommended fasteners in marked locations. Fasten this side only at this time. Repeat until you reach the second to the last Easy Riser. **(Note: Special fastener placement required for top step. See Diagram 1 for top step Side "A". Fasten top Easy Riser.)**



Step 6

Flip stringer over. **(Note: special fastener placement required for bottom step).** See Diagram 1 for bottom step Side "B". **Fasten bottom Easy Riser.** Starting from left to right, insert balance of recommended fasteners on Side "B".



Step 7

Starting from the left (bottom step) lay the framing square across the bottom of step Side "B". Put the short leg on the riser face. Place the long leg on the printed gauge to proper dimension (riser height dimension from Box 2(c) of worksheet). **(Note: Subtract thickness of step tread to arrive at final dimension).** Draw a line on the printed gauge from the Easy Riser to the top of the 2x6. Flip the stringer back to Side "A". Lay square on the top step, with the short leg of the square on the tread face. Draw a line from the printed gauge (step tread width dimension from Box 5(b) on worksheet) to the bottom of the 2x6.

NOTE: Diagram 1 is for top and bottom stair steps **only**, apply additional screws or nails to the areas shown in the diagram below.

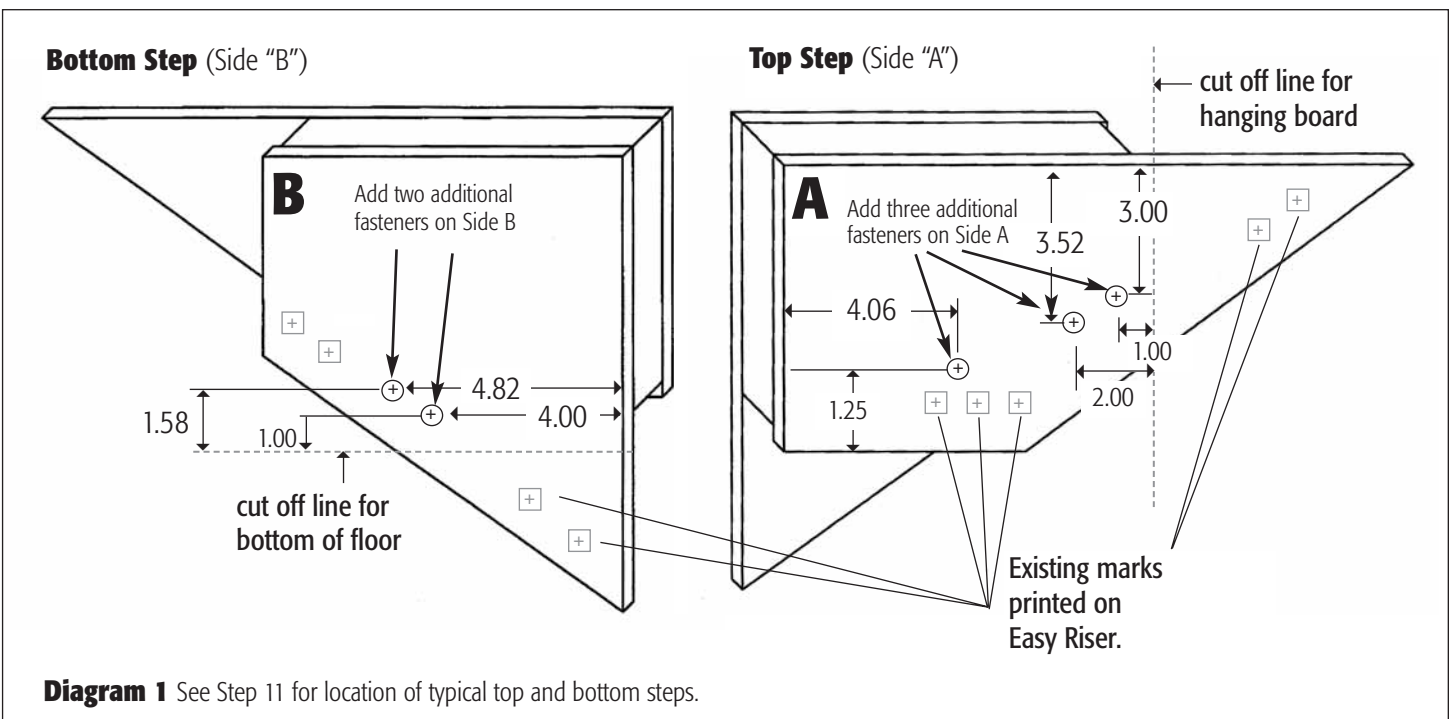


Diagram 1 See Step 11 for location of typical top and bottom steps.



Step 8

Trim off excess stringer along lines marked in Steps 6 and 7. This will give you the plumb cut for the top of the stairs and the square cut for the bottom of the stairs. You are now finished with one stringer. **This is your pattern for the next two stringers.**



Step 10

Apply fasteners where noted on Easy Riser step. Repeat for each Easy Riser.



Step 9

Build a second stringer by aligning the stringer material, mirroring the previous Easy Riser positions. Secure with a hand clamp. This guarantees that each Easy Riser meets its companion piece.



Step 11

There are two ways to mount the stringers. The first is to fasten the finished stringers to the hanging board and then attach the hanging board to the wall studs. The second is to prehang the hanging board and then attach the stringers.

Rise Stringer Design Parameters and Sizing Charts

Residential

40 PSF Live Load or 300 lb. Point Load at any location along stringer
 10 PSF Dead Load
 Live Load Deflection Limited to L/360
 Total Load Deflection Limited to L/240
 Stringer Rise = 7-3/4" & Stringer Run = 10" ONLY (38° slope)

42 Inch Wide Stairway with 2 Stringers (Dry Use) Residential

	#2 Spruce-Pine-Fir			#2 Douglas Fir			#2 Southern Yellow Pine		
	Max Run	Max Rise	Max Stringer Length	Max Run	Max Rise	Max Stringer Length	Max Run	Max Rise	Max Stringer Length
2x6 Stringer	8' - 1"	6' - 11"	10' - 2"	8' - 2"	7' - 0"	10' - 4"	8' - 7"	7' - 4"	10' - 10"
2x8 Stringer	10' - 9"	9' - 0"	13' - 7"	10' - 11"	9' - 1"	13' - 9"	11' - 5"	9' - 6"	14' - 5"
2x10 Stringer	13' - 3"	10' - 11"	16' - 9"	13' - 4"	11' - 0"	16' - 10"	13' - 8"	11' - 3"	17' - 3"
2x12 Stringer	15' - 4"	12' - 6"	19' - 5"	15' - 6"	12' - 8"	19' - 7"	16' - 0"	13' - 0"	20' - 3"

42 Inch Wide Stairway with 3 Stringers (Dry Use) Residential

	#2 Spruce-Pine-Fir [†]		
	Max Run	Max Rise	Max Stringer Length
2x6 Stringer	8' - 4"	7' - 1"	10' - 6"
2x8 Stringer	12' - 5"	10' - 3"	15' - 8"
2x10 Stringer	16' - 3"	13' - 3"*	20' - 7"*
2x12 Stringer	19' - 6"	15' - 9"*	24' - 8"

[†]#2 SYP & #2 Douglas Fir can be substituted for #2 SPF

* Rise is limited to 12" per IBC 2003 & IRC 2000

Commercial

100 PSF Live Load or 300 lb. Point Load at any location along stringer
 10 PSF Dead Load
 Live Load Deflection Limited to L/360
 Total Load Deflection Limited to L/240
 Stringer Rise = 7" & Stringer Run = 11" ONLY (32° slope)

42 Inch Wide Stairway with 2 Stringers (Dry Use) Commercial

	#2 Spruce-Pine-Fir			#2 Douglas Fir			#2 Southern Yellow Pine		
	Max Run	Max Rise	Max Stringer Length	Max Run	Max Rise	Max Stringer Length	Max Run	Max Rise	Max Stringer Length
2x6 Stringer	6' - 2"	4' - 6"	7' - 4"	6' - 3"	4' - 7"	7' - 5"	6' - 5"	4' - 8"	7' - 7"
2x8 Stringer	7' - 10"	5' - 7"	9' - 4"	7' - 11"	5' - 8"	9' - 5"	8' - 4"	5' - 10"	9' - 10"
2x10 Stringer	9' - 8"	6' - 9"	11' - 6"	9' - 9"	6' - 10"	11' - 7"	10' - 0"	6' - 11"	11' - 10"
2x12 Stringer	11' - 3"	7' - 9"	13' - 5"	11' - 5"	7' - 10"	13' - 6"	11' - 9"	8' - 1"	14' - 0"

42 Inch Wide Stairway with 3 Stringers (Dry Use) Commercial

	#2 Spruce-Pine-Fir [†]		
	Max Run	Max Rise	Max Stringer Length
2x6 Stringer	7' - 6"	5' - 4"	8' - 11"
2x8 Stringer	9' - 11"	6' - 11"	11' - 9"
2x10 Stringer	12' - 3"	8' - 4"	14' - 6"
2x12 Stringer	14' - 3"	9' - 7"	16' - 10"

[†]#2 SYP & #2 Douglas Fir can be substituted for #2 SPF

Easy Riser Stringer Worksheet

Total

1(a) Rise Height

Divided By 8 =

1(b) Number of Stair Treads †

† If not a whole number, round up

† Insert this number in box 2(b) & 4(a)

Total

2(a) Rise Height

Divided By

2(b) Number of Stair Treads = 2(c) Riser Height Σ

Σ See Working Diagram 2

Σ Insert this number in box 3(b)

Total

3(a) Rise Height

Minus

3(b) Riser Height μ =

3(c) Rise π

μ See Working Diagram 2

π Insert this number in Box 7(a)

4(a) Number of Stair Treads

Minus 1 =

4(b)

Insert this number in Box 6(a)

5(a) Backer Thickness \S

Plus

5(b) Step Tread Width \S =

5(c) Tread Width Δ

\S See Working Diagram 2

Δ Insert this number in Box 6(b)

6(a) # of Stair Treads

Times

6(b) Tread Width Ω =

6(c) Run α

Ω See Working Diagram 3

α Insert this number in 7(b)

(Also See Diagram 3 for Run)

7(a) Rise² +

7(b) Run² =

7(c) Stringer²

(i.e.-Rise Squared would be the rise multiplied by itself. See **Math Example** below)

8(a) Stringer²

$\sqrt{\quad}$ =

8(b) Stringer Length

Square Root For Stringer Length

Math Example

$$\text{Rise}^2 + \text{Run}^2 = \text{Stringer Length}^2$$

$$(32" \times 32") + (40" \times 40") = \text{Stringer Length}^2$$

$$1024" + 1600" = \text{Stringer Length}^2$$

$$2624" = \sqrt{\text{Stringer Length}}$$

$$\text{Stringer Length} = 51.22"$$

Working Diagrams

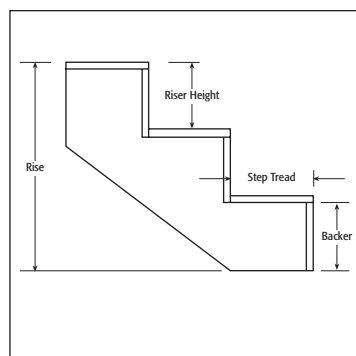


Diagram 2

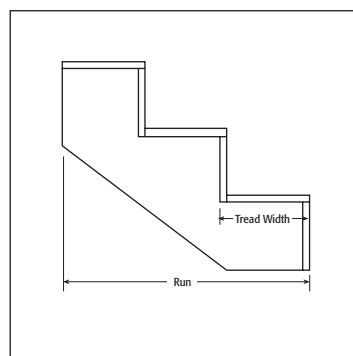


Diagram 3

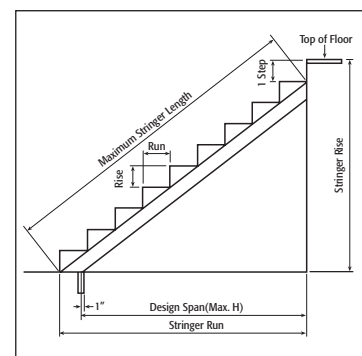


Diagram 4

The pictures and diagrams in this brochure are for illustrative purposes only. Any construction or use of the product must be in accordance with local building codes for loading stairs. Universal Forest Products, Inc., its subsidiaries and affiliates, ("Universal") may provide a warranty with this product. Please ask for a copy when purchasing the product. Universal makes no warranty of any kind, express or implied, except as may be in its written warranty. All installation should be done by a licensed professional, and appropriate safety measures should be taken when installing. Universal shall not be liable for any damages, including special and consequential damages which may result from the assembly or installing of this product. For use in single family or light commercial applications.



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