

OWENS CORNING LUMBER

# STAIR STRINGERS INSTALLATION GUIDE

ACCESS DIGITAL  
VERSION HERE





# BETTER BUILT DECKS START WITH BETTER BUILT STRINGERS

If you plan to replace or build new stairs on a deck, consider selecting materials designed to enable safe, resilient structures.

ATTRIBUTES	OWENS CORNING LUMBER STRUCTURAL FRAMING	WOOD	STEEL
Rotproof	✓	✗	✓
Rustproof	✓	✓	✗
Rated for underwater contact (fresh & salt)	✓	✗	✗

## OWENS CORNING LUMBER STAIR STRINGER PROFILES



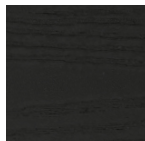
**2" x 10" (1.5" x 9.25")**  
Standard Lengths: 12', 16', 20'  
Woodgrain: Both sides



**2" x 12" (1.5" x 11.25")**  
Standard Length: 12', 16', 20'  
Woodgrain: Both sides

## AVAILABLE IN A VARIETY OF COLORS

Black



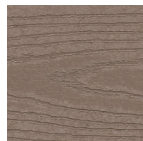
Driftwood



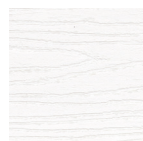
Saddle



Weatherwood



White



Gray



Sand



All standard profiles have a square-edged design. Check custom lengths and special colors availability with your Owens Corning representative. Minimum order quantity may apply. Product samples available upon request. Actual product colors may vary due to photographic lighting sources or screen settings.

Stair stringers are a key structural element and provide a framework and load-bearing support for the treads and risers. **Making sure stair stringers are in proper working condition and built right is essential for safety and durability.**

## STEP 1: DETERMINING STAIR LAYOUT

The first step in designing and installing stair stringers is to determine the layout of the stair, which includes:

- total rise
- total run
- number of steps
- tread width
- riser height
- stringer spacing.

The layout of the stair will depend on building code requirements, materials selected and desired layout. A good rule of thumb is to keep your stairs between 7-8".



## PRO TIP: HOW TO DETERMINE RISE AND RUN

Kevin Choquette (@Ravinbuilders) explains how he determines the height of his stairs and the number of stairs needed based on the rise and run.







## STEP 2: MARK AND CUT STRINGERS

Once the layout of the stair is determined, the next step is to mark and cut the stringers. The stringers are generally cut from 2x10 or 2x12 lumber depending on the span and load of the stair.



**Marking:** The tread and riser lines can be marked using a framing square and stair gauge, or using a prefabricated stair stringer template.



**Cutting:** The stringers are cut along the tread and riser lines, forming notches that support the steps.



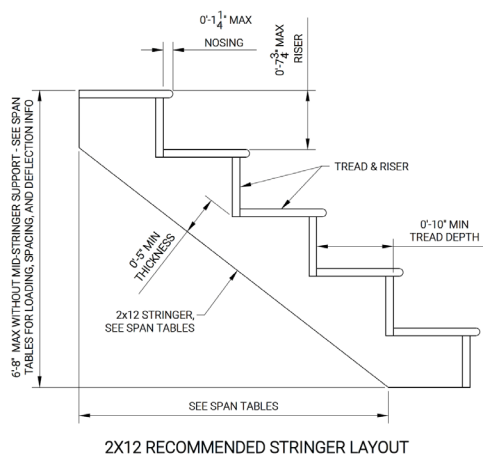
**Finishing:** The stringers are cut with a circular saw and finished with a handsaw or jigsaw. Note to avoid overcutting the notches.

### PRO TIP: MARKING AND CUTTING STRINGERS

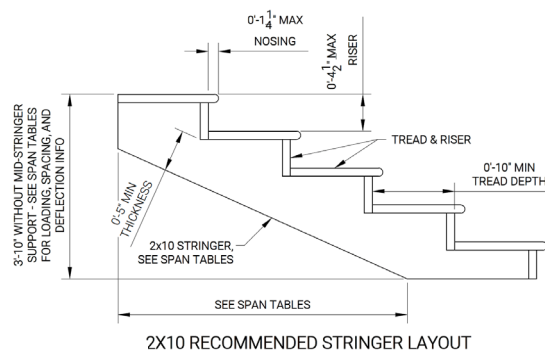
Jon Dawson (@Jon\_Dawson) shows the best way to create a prefabricated stair stringer template and cut stair stringers right to save both time and money.



**Figure 1:** 2x12 Recommended Stringer Layout



**Figure 2:** 2x10 Recommended Stringer Layout



**Make sure your throat thickness is a minimum of 5".** The throat thickness of a stair stringer is the minimum distance between the top and bottom edges of the stringer, measured at the narrowest point of the notch. The throat thickness is important for strength and stability. It can be increased by using a smaller riser height or smaller tread width.



HOW TO USE TABLE 1

- 1. Determine the live load on the stair stringer. For residential projects this is usually 40 PSF.
- 2. Determine what kind of deflection criteria to use - The larger the L/XXX number, the stiffer the stairs. For reference, wood usually follows an L/360 recommended deflection. Owens Corning Lumber Stair Stringers can be safely used at any of the deflection criteria listed.
- 3. Determine the required span needed. This span value is the horizontal dimension that the stringer travels, not vertical. If the span is too long, consider adding an intermediate support or landing.
- 4. Compare chosen spans to the maximum recommended span and use the appropriate spacing that is larger than your required span.

TABLE 1: MAXIMUM ALLOWABLE STAIR STRINGER SPANS PER LOADING CRITERIA

LIVE LOAD (PSF)	STRINGER SPACING	TOTAL LOAD¹ (Dead Load + Live Load)		LIVE LOAD ONLY	
		L/180	L/240		
40	8"	8'-6"	7'-8"	7'-8"	6'-8"
	10"	7'-10"	7'-2"	6'-10"	6'-2"
	12"	7'-5"	6'-9"	6'-5"	5'-10"
	14"	7'-0"	6'-5"	6'-1"	5'-6"
50	8"	8'0"	7'-3"	7'-3"	6'-2"
	10"	7'5"	6'-9"	6'-4"	5'-9"
	12"	7'0"	6'-4"	5'-11"	5'-5"
	14"	6'8"	6'-0"	5'-8"	5'-2"
60	8"	7'7"	6'-11"	6'-5"	5'-10"
	10"	7'1"	6'-5"	5'-11"	5'-5"
	12"	6'8"	6'-0"	5'-7"	5'-1"
	14"	6'4"	5'-9"	5'-4"	4'-10"
70	8"	7'3"	6'-7"	6'-1"	5'-6"
	10"	6'9"	6'-2"	5'-8"	5'-2"
	12"	6'4"	5'-9"	5'-4"	4'-10"
	14"	6'0"	5'-6"	5'-1"	4'-7"
80	8"	7'0"	6'-4"	5'-10"	5'-3"
	10"	6'6"	5'-11"	5'-5"	4'-11"
	12"	6'1"	5'-7"	5'-1"	4'-7"
	14"	5'10"	5'-3"	4'-10"	4'-5"

¹Total load includes a 12 PSF dead load  
The span is defined as the distance between supports | Minimum throat depth of 5" | Minimum of three stringer stair assemblies tied together with stair treads | These span calculations do not take into account for creep or external factors such as temperature, freeze thaw cycles, UV exposure etc. IRC requires a minimum of 40 PSF live load in addition to the self weight of the stair. Stringers must not exceed 14 inches on center. Per IRC Section 311 stair riser height shall be a maximum of 7.75" and stair tread depth (run) shall be a minimum of 10".



### STEP 3: STAIR STRINGER SPACING

Blocking should be provided between the stair stringers at the end of the stringer. Like blocking for a deck, this blocking will provide additional bracing to prevent lateral movement or twisting of the stringers.



Figure 3: Mid-Span Support Detail

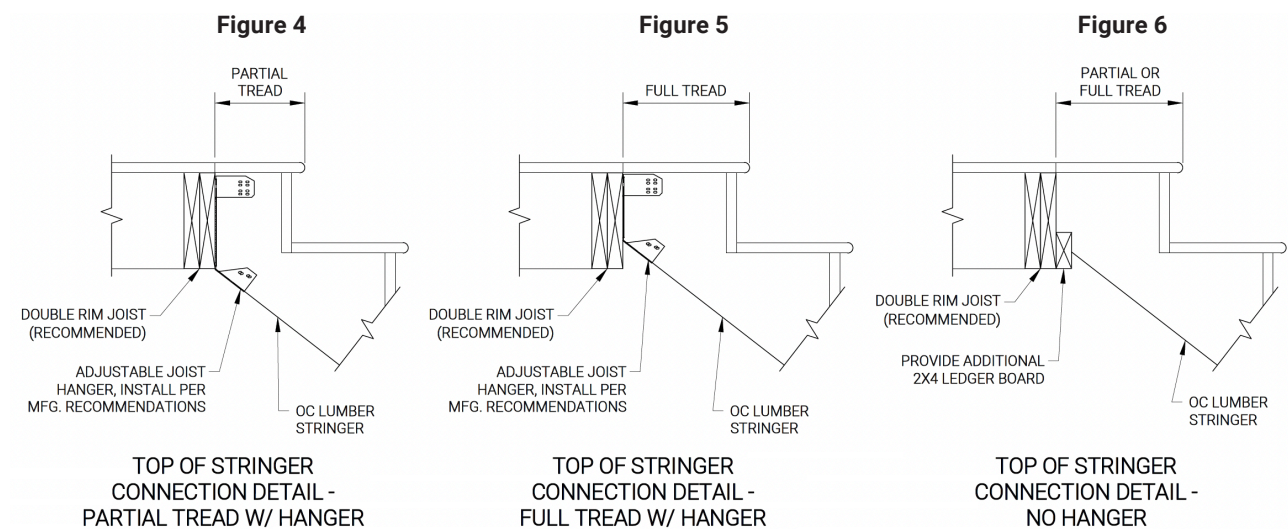
#### PRO TIP: HOW TO SPACE AND SECURE STAIRS

Learn how to ensure stairs are leveled and secured to the ledger board.



### STEP 4: STAIR STRINGER ATTACHMENT TO DECK

The stair stringers must be attached to the deck or landing securely and safely, to prevent any movement or separation.



The attachment method depends on the type and height of the deck or landing, as well as the local building code requirements. The most common methods of attaching stair stringers to the deck are using metal hangers, brackets, or straps. The metal connectors must be rated for outdoor use and compatible with the type of fasteners used. The ledger boards or rim joists must be properly flashed as required by the applicable building code.



## STAIR STRINGER ADDITIONAL RESOURCES

Owens Corning Lumber Structural Framing delivers strength, durability, and ease of installation: **creating better-built, better-to-build, higher performing stair stringers**. Scan the QR codes below to watch



### THE SECURE MID SPAN METHOD FOR STRINGERS

When it comes to mid-span beams under stairs, Jeremy Wilkins (@DeckmasterJ) notches the beam under the stairs rather than rip the entire top beam. While it takes more time, it is more secure as any time you can lock in framing using other framing members instead of fasteners alone, you will have a stronger connection. Plus it looks pretty good!



### STRINGERS MADE FOR THE HARSHTEST ELEMENTS

Still have doubts that Owens Corning Lumber Stair Stringers can stand up to the elements? Take a look as Gordon South (@WoodBully) puts PTL stringers up against better built stringers. Let's just say PTL does not stand a chance.



Installation Instructions  
& Additional Applications



**STRUCTURAL FRAMING**  
**INSTALLATION INSTRUCTIONS**



**LEDGER BOARD**  
**SAFETY INSPECTION SHEET**

LEARN MORE AT [OWENSCORNING.COM/LUMBER](https://www.owenscorning.com/lumber)



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