Stair Stringer Tables for Trus Joist® 1½" 1.3E TimberStrand® LSL

The information presented in this technical bulletin is intended to assist with the specification of stair stringers that utilize 1½" 1.3E TimberStrand® LSL. For additional design and installation guidance, please reference *TimberStrand® LSL Stair Stringers and SturdiStep® Stair Treads Specifier's Guide* (9010).

1-PLY IRC MAXIMUM STRINGER RUN – 40 PSF LIVE LOAD/12 PSF DEAD LOAD[1]

Material Depth[2]	36" Tread Width				42" Tread Width		44" Tread Width		48" Tread Width	
	2 stringers		3 stringers		3 stringers		3 stringers		3 stringers	
	Reinforcement		Reinforcement		Reinforcement		Reinforcement		Reinforcement	
	None	2x4	None	2x4	None	2x4	None	2x4	None	2x4
9.5"	5'-10"	6'-8"	6'-8"	7'-6"	5'-10"	7'-6"	5'-10"	7'-6"	5'-10"	6'-8"
11⅞"	9'-2"	10'-0"	10'-10"	11'-8"	10'-0"	10'-10"	10'-0"	10'-10"	9'-2"	10'-10"
14"	12'-6"	12'-6"	14'-2"	14'-2"	13'-4"	13'-4"	13'-4"	13'-4"	12'-6"	12'-6"

[1] Tables are based on IRC requirements: Maximum riser height 7¾" and a minimum tread depth of 10", with a maximum story height of 151".
[2] Minimum throat depths are as follows: 3⅜" min. at 9½" rim board, 5¾" at 11⅞" rim board and 7⅞" min. at 14" rim board.
- See **General Notes** on page 3.

1-PLY IBC MAXIMUM STRINGER RUN – 100 PSF LIVE LOAD/12 PSF DEAD LOAD[1]

Material Depth[2]	36" Tread Width				42" Tread Width		44" Tread Width		48" Tread Width	
	2 stringers		3 stringers		3 stringers		3 stringers		3 stringers	
	Reinforcement		Reinforcement		Reinforcement		Reinforcement		Reinforcement	
	None	2x4	None	2x4	None	2x4	None	2x4	None	2x4
9.5"	3'-8"	4'-7"	4'-7"	5'-6"	4'-7"	5'-6"	4'-7"	5'-6"	4'-7"	5'-6"
11⅞"	7'-4"	8'-3"	8'-3"	9'-2"	7'-4"	8'-3"	7'-4"	8'-3"	7'-4"	8'-3"
14"	9'-2"	9'-2"	11'-0"	11'-0"	10'-1"	10'-1"	10'-1"	10'-1"	10'-1"	10'-1"

[1] Tables are based on IBC requirements: Maximum riser height 7" and a minimum tread depth of 11", with a maximum story height of 144".
[2] Minimum throat depths are as follows: 3⅝" min. at 9½" rim board, 6" min. at 11⅞" rim board and 8⅛" min. at 14" rim board.
- See **General Notes** on page 3.

2-PLY IRC MAXIMUM STRINGER RUN – 40 PSF LIVE LOAD/12 PSF DEAD LOAD[1]

Material Depth	36" Tread Width		42" Tread Width	44" Tread Width	48" Tread Width
	2 stringers	3 stringers	3 stringers	3 stringers	3 stringers
	Without Reinforcement				
9.5"	6'-8"	8'-4"	7'-6"	7'-6"	7'-6"
11⅞"	11'-8"	13'-4"	12'-6"	12'-6"	11'-8"
14"	15'-0"	15'-0"	15'-0"	15'-0"	15'-0"

[1] Tables are based on IRC requirements: Maximum riser height 7¾" and a minimum tread depth of 10", with a maximum story height of 151".
[2] Minimum throat depths are as follows: 3⅜" min. at 9½" rim board, 5¾" min. at 11⅞" rim board and 7⅞" min. at 14" rim board.
[3] Each stringer requires 2 pieces: 2 stingers = 4 pieces, 3 stingers = 6 pieces total.
- See **General Notes** on page 3.

2-PLY IBC MAXIMUM STRINGER RUN – 100 PSF LIVE LOAD/12 PSF DEAD LOAD[1]

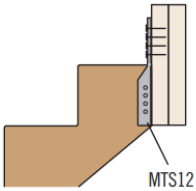
Material Depth	36" Tread Width		42" Tread Width	44" Tread Width	48" Tread Width
	2 stringers	3 stringers	3 stringers	3 stringers	3 stringers
	Without Reinforcement				
9.5"	5'-6"	6'-5"	6'-5"	5'-6"	5'-6"
11⅞"	9'-2"	10'-1"	10'-1"	9'-2"	9'-2"
14"	11'-11"	13'-9"	12'-10"	12'-10"	12'-10"

[1] Tables are based on IBC requirements: Maximum riser height 7" and a minimum tread depth of 11", with a maximum story height of 144".
[2] Minimum throat depths are as follows: 3⅝" min. at 9½" rim board, 6" min. at 11⅞" rim board and 8⅛" min. at 14" rim board.
[3] Each stringer requires 2 pieces: 2 stingers = 4 pieces, 3 stingers = 6 pieces total.
- See **General Notes** on page 3.

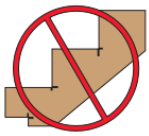
Suggested Residential Stringer Attachment Details for 40 psf Live Load

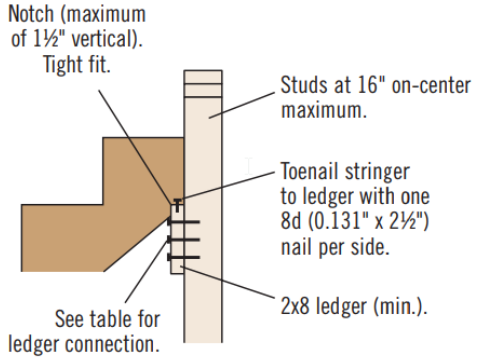
High End Connection (per stringer)

High End



MTS12 twist strap by Simpson Strong-Tie® or MTW12 twist strap by MiTek® or equal. Fasten with fourteen (0.148" x 1½") nails. Use two straps with 14" stringer connected to SPF equivalent species header. Alternately use Simpson Strong-Tie® LSC adjustable stringer connector. Connect with seventeen (0.148" x 1½") nails. Follow Simpson installation requirements.





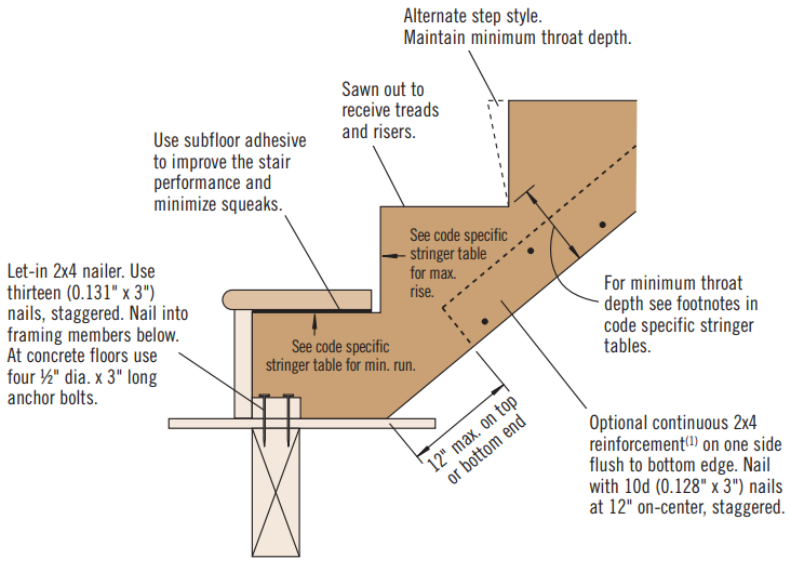
Ledger Connection Table

Species of Ledger and Stud[1]	0.131 in. x 3 in. Nails Required Per Stringer Depth[2]		
	9½"	11⅞"	14"
DF or SP	4	5	6
SPF or HF	4	6	7

(1) If ledger and stud species differ, select the larger connection value.
(2) Table based on connection to three studs.

Low End Let in Connection

Low End



(1) Minimum No. 2 hem-fir, spruce-pine-fir or better grade.

CAUTION

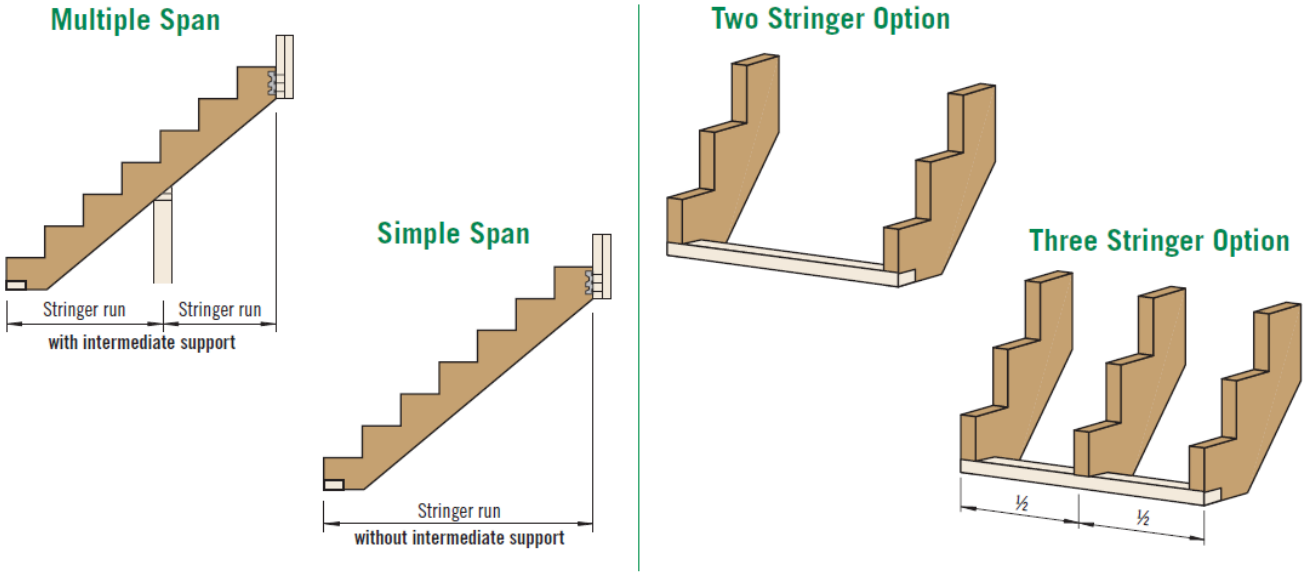
Stair stringer tables and attachment details are intended for use with TimberStrand LSL only. Consult designer for attachment details for live loads greater that 40 psf.

General Notes

- Maximum stringer runs shown are more restrictive of simple or continuous span and based on Allowable Stress Design.
- Deflection criteria of L/360 live load and L/240 total load.
- For 2-ply stringers, attach together with 2 rows of 0.131″ x 2½″ at 12″ on center.
- Use subfloor adhesive to improve stair performance and minimize squeaks. See adhesive recommendations on page 2 of 9010.
- Keep materials dry. Add a vapor barrier at the bottom of the stair stringer if it is in contact with concrete.
- The attachment details shown are suggestions only; alternate details are possible. Responsibility remains with the design professional of record.
- For assistance with loading conditions and stair configurations nots shows, contact your Weyerhaeuser representative.

General Guidelines for Calculating Step Rise and Run

- The rise times the run should equal approximately 75″.
- Two times the rise plus one run should equal approximately 25″.
- Rise plus run should be 17″ to 18″.



TimberStrand® LSL stair stringers are intended for dry-use applications.

If you have any questions, please contact your Weyerhaeuser representative.