

1½" 1.6E Engineered Framing Lumber (EFL) Stair Stringers

Residential 40 psf Live Load + 12 psf Dead Load

Stringer Depth (in.)	36" Tread Width		40" Tread Width		44" Tread Width		44" Tread Width		48" Tread Width	
	2 stringers		2 stringers		3 stringers		4 stringers		4 stringers	
	No Reinforcement	With Reinforcement	No Reinforcement	With Reinforcement	No Reinforcement	With Reinforcement	No Reinforcement	With Reinforcement	No Reinforcement	With Reinforcement
9½"	5'-6"	6'-5"	5'-6"	6'-5"	5'-6"	7'-4"	6'-5"	7'-4"	6'-5"	7'-4"
11⅞"	9'-2"	10'-1"	9'-2"	10'-1"	10'-1"	11'-0"	11'-0"	11'-11"	11'-0"	11'-11"
14"	12'-10"	14'-8"	12'-10"	13'-9"	13'-9"	15'-7"	15'-7"	16'-6"	14'-8"	16'-6"

Stringer runs are based on a tread rise of 7.25", a tread run of 11", rounded down to whole tread run.
Maximum stair stringer run is capped on the difference between floors of 12'-7" (maximum per 2021 IRC R311.7.3).

Commercial 100 psf Live Load + 12 psf Dead Load

Stringer Depth (in.)	36" Tread Width		40" Tread Width		44" Tread Width		44" Tread Width		48" Tread Width	
	2 stringers		2 stringers		3 stringers		4 stringers		4 stringers	
	No Reinforcement	With Reinforcement	No Reinforcement	With Reinforcement	No Reinforcement	With Reinforcement	No Reinforcement	With Reinforcement	No Reinforcement	With Reinforcement
9½"	4'-7"	5'-6"	3'-8"	4'-7"	4'-7"	5'-6"	4'-7"	6'-5"	4'-7"	5'-6"
11⅞"	7'-4"	8'-3"	7'-4"	7'-4"	7'-4"	8'-3"	8'-3"	9'-2"	8'-3"	9'-2"
14"	10'-1"	11'-0"	10'-1"	10'-1"	11'-0"	11'-11"	11'-11"	12'-10"	11'-0"	12'-10"

Stringer runs are based on a tread rise of 7" (maximum per 2021 IBC 1011.5.2), a tread run of 11" (minimum per 2021 IBC 1011.5.2), rounded down to whole tread run.
Maximum stair stringer run is capped on the difference between floors of 12'-0" (maximum per 2021 IBC 1011.8).

NOTES

- Verify acceptability of stringer rise & run and total vertical rise with local building code requirements.
- Chart based on deflection requirement of L/360 live load and L/240 total load. Interior use only; exterior exposure not permitted.
- Stringers are unstable until treads are installed.
- Use subfloor adhesive between treads and stringers to minimize squeaks.
- Avoid direct contact between stringers and concrete or masonry by using flashing or a vapor barrier.
- Reinforcement must be 2x4 No. 2 Hem-Fir, Spruce-Pine-Fir or better (E = 1.3), one face (see details for attachment).
- N/A means reinforcement not permitted since it will interfere with the step notches.
- Do not plane without consulting BlueLinX.
- This chart based on an interior bearing length of 3 inches and a bearing plate capacity of 425 psi.
- Do not ship precut stringers. Stringers should only be cut at the job site or shipped as complete stair units.
- This chart based on the presumption that the stair width is equally shared by all of the stringers.
- Design of tread is by others; a tread thickness of 1 inch was presumed for geometry.
- Stringer self-weight is considered to be included in stated design dead load.
- Do not overcut the notch corner. Drill ¼" (0.25 in.) diameter hole at stringer notch corner during fabrication.