NEW CASTLE STEEL

SPAN CHART
TABLE E-75 RESIDENTIAL

75 PSF TOTAL LOAD

Table Instructions: Enter the table with a joist span and cantilever length within the joist span limits based on the joist option, then read the maximum allowable box beam span.

JOIST SPAN LIMITS

Joist option	1 5/8"		1 5/8", every other joist doubled		1 5/8", all doubled		2"		2", every other joist doubled		2", all doubled	
Joist Spacing O.C.	12"	16"	12"	16"	12"	16"	12"	16"	12"	16"	12"	16"
Maximum Joist Span (Ledger To Box Beam)	14'	12'	16'	14'	18'	16'	18'	16'	20'	18'	22'	20'
Maximum Cantilever Length	4'	4'	5'	4'	6'	5'	6'	5'	6'	6'	6'	6'

MAXIMUM BOX BEAM SPAN (SINGLE BOX BEAM BETWEEN POSTS)

CANTILEVER LENGTH (FEET) \ JOIST SPAN (LEDGER TO BOX BEAM) (FEET)	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"
0'-0"	19'-2"	17'-5"	16'-2"	15'-2"	14'-5"	13'-9"	13'-3"	12'-10"	12'-5"	12'-0"	11'-9"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"
0'-6"	17'-5"	16'-2"	15'-2"	14'-5"	13'-9"	13'-3"	12'-10"	12'-5"	12'-0"	11'-9"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"
1'-0"	16'-2"	15'-2"	14'-5"	13'-9"	13'-3"	12'-10"	12'-5"	12'-0"	11'-9"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"	9'-0"
1'-6"	15'-2"	14'-5"	13'-9"	13'-3"	12'-10"	12'-5"	12'-0"	11'-9"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"	9'-0"	8'-10"
2'-0"	14'-5"	13'-9"	13'-3"	12'-10"	12'-5"	12'-0"	11'-9"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"	9'-0"	8'-10"	8'-8"
2'-6"	13'-9"	13'-3"	12'-10"	12'-5"	12'-0"	11'-9"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"	9'-0"	8'-10"	8'-8"	8'-6"
3'-0"	13'-3"	12'-10"	12'-5"	12'-0"	11'-9"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"	9'-0"	8'-10"	8'-8"	8'-6"	8'-4"
3'-6"	12'-10"	12'-5"	12'-0"	11'-9"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"	9'-0"	8'-10"	8'-8"	8'-6"	8'-4"	8'-3"
4'-0"	12'-5"	12'-0"	11'-9"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"	9'-0"	8'-10"	8'-8"	8'-6"	8'-4"	8'-3"	8'-1"
4'-6"	12'-0"	11'-9"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"	9'-0"	8'-10"	8'-8"	8'-6"	8'-4"	8'-3"	8'-1"	7'-11"
5'-0"	11'-9"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"	9'-0"	8'-10"	8'-8"	8'-6"	8'-4"	8'-3"	8'-1"	7'-11"	7'-10"
5'-6"	11'-5"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"	9'-0"	8'-10"	8'-8"	8'-6"	8'-4"	8'-3"	8'-1"	7'-11"	7'-10"	7'-8"
6'-0"	11'-2"	10'-11"	10'-9"	10'-5"	10'-2"	9'-11"	9'-8"	9'-5"	9'-3"	9'-0"	8'-10"	8'-8"	8'-6"	8'-4"	8'-3"	8'-1"	7'-11"	7'-10"	7'-8"	7'-7"

MAXIMUM BOX BEAM SPAN (DOUBLE BOX BEAM BETWEEN POSTS)

CANTILEVER LENGTH (FEET) \ JOIST SPAN (LEDGER TO BOX BEAM) (FEET)	3'-0"	4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"
0'-0"	24'-1"	21'-11"	20'-4"	19'-2"	18'-2"	17'-5"	16'-9"	16'-2"	15'-8"	15'-2"	14'-9"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"
0'-6"	21'-11"	20'-4"	19'-2"	18'-2"	17'-5"	16'-9"	16'-2"	15'-8"	15'-2"	14'-9"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"
1'-0"	20'-4"	19'-2"	18'-2"	17'-5"	16'-9"	16'-2"	15'-8"	15'-2"	14'-9"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"	12'-0"
1'-6"	19'-2"	18'-2"	17'-5"	16'-9"	16'-2"	15'-8"	15'-2"	14'-9"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"	12'-0"	11'-10"
2'-0"	18'-2"	17'-5"	16'-9"	16'-2"	15'-8"	15'-2"	14'-9"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"	12'-0"	11'-10"	11'-9"
2'-6"	17'-5"	16'-9"	16'-2"	15'-8"	15'-2"	14'-9"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"	12'-0"	11'-10"	11'-9"	11'-7"
3'-0"	16'-9"	16'-2"	15'-8"	15'-2"	14'-9"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"	12'-0"	11'-10"	11'-9"	11'-7"	11'-5"
3'-6"	16'-2"	15'-8"	15'-2"	14'-9"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"	12'-0"	11'-10"	11'-9"	11'-7"	11'-5"	11'-4"
4'-0"	15'-8"	15'-2"	14'-9"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"	12'-0"	11'-10"	11'-9"	11'-7"	11'-5"	11'-4"	11'-2"
4'-6"	15'-2"	14'-9"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"	12'-0"	11'-10"	11'-9"	11'-7"	11'-5"	11'-4"	11'-2"	11'-1"
5'-0"	14'-9"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"	12'-0"	11'-10"	11'-9"	11'-7"	11'-5"	11'-4"	11'-2"	11'-1"	10'-11"
5'-6"	14'-5"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"	12'-0"	11'-10"	11'-9"	11'-7"	11'-5"	11'-4"	11'-2"	11'-1"	10'-11"	10'-10"
6'-0"	14'-1"	13'-9"	13'-6"	13'-3"	13'-0"	12'-10"	12'-7"	12'-5"	12'-3"	12'-0"	11'-10"	11'-9"	11'-7"	11'-5"	11'-4"	11'-2"	11'-1"	10'-11"	10'-10"	10'-8"

NOTES:

1. All loads and load combinations are determined using ASCE 7-05. DL=Dead Load, LL=Live Load, SL=Snow Load. When LL<SL, the total load (TL) is 1.2DL+1.6SL+0.5LL, otherwise TL=1.2DL+1.6LL+0.5SL.

2. Loads used to produce the tables above are as follows: DL=10psf, LL=40psf, SL=50psf.

3. Deflection limits for joists are determined using IBC-2009 Section R505, Steel Floor Framing. Joists - Live load deflection is limited to L/480, total deflection is limited to L/240, where L is the span length. Box Beams - Live load deflection is limited to L/360, total deflection is limited to L/240, where L is the span length.

4. Grey areas in tables indicate instances where the joists do not backspan twice the cantilever distance or where the maximum joist span is exceeded.

5. Grey areas are established based on 12 in. O.C. joist capacity.

6. A partial list of section properties for each member is provided in the Trex Elevations Deck Framing / Inspection Details Table.

7. Joist and box beam capacity are determined with AISI-S100-07 (LRFD).

8. 8. 1 5/8" joist and 2" joist yield stress is assumed as 33ksi and 50 ksi respectively.

9. Box beam yield stress is assumed as 50ksi.

10. If a box beam is supported by more than two posts, then its span selected above should be multiplied by 0.85 for a single box beam and 0.90 for a double box beam.

11. If a box beam is provided as an intermediate joist support, then its span selected above or modified by Note 10 should be multiplied by 0.60 for a "dropped" box beam and 0.70 for a "flush" box beam.

12. This span chart should not be used for decks located in a hurricane zone (in hurricane zones table E125, E150, or E200 should be used).