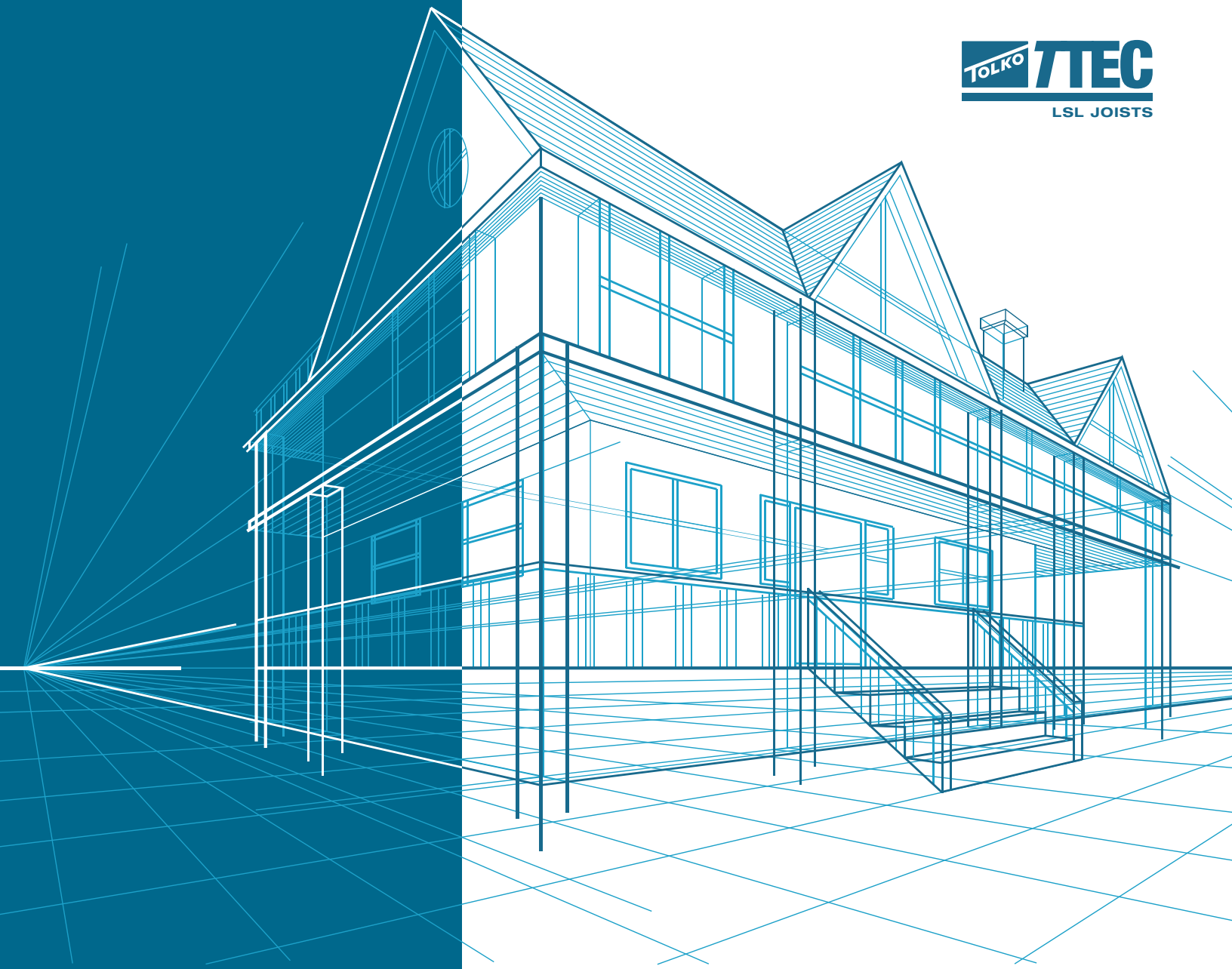
TOLKO

TECHNICAL GUIDE (ASD - USA)

T-TEC 1.35E & 1.55E LSL FLOOR/ROOF JOISTS

TOLKO TTEC
LSL JOISTS



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ALLOWABLE STRESS DESIGN

Published: June 29, 2021

WWW.TOLKO.COM

TOLKO T-TEC LSL PRODUCTS

Tolko's line of Laminated Strand Lumber (LSL) is manufactured from strands of fibre selected to create a solid, consistent, and uniform alternative to traditional structural and non-structural products such as lumber, plywood, OSB and LVL. There is no warp, no wane, and no rot which means no waste and no need to order extra materials.

CREATING VALUE FROM THE STRANDS

Tolko LSL products are produced at our Athabasca mill in Slave Lake, Alberta. This industry-leading facility has the longest continuous press in North America, ensuring a steady stream of uniform engineered wood products and precise mixtures for product consistency and dimensional accuracy. Our continuous press provides contractors with the confidence that T-TEC LSL will perform as intended at every job.

DELIVERING VALUE WITH CONSISTENCY

Our Athabasca Mill is serviced by a combination of truck and rail providing Tolko with the flexibility to reach customers across Canada and the USA.

ACHIEVING VALUE WITH 1.35 & 1.55 E-RATING

The E-Rating of engineered wood products identifies the modulus of elasticity (MOE) or the tendency of the product to deform along an axis when opposing forces are applied. A greater E-Rating means the product is more resistant to changing with force.

WHY CHOOSE T-TEC LSL?

- ✓ Reduce materials and enhance design
- ✓ Improve recovery
- ✓ Reduce installation time
- ✓ Build quieter floors and straighter walls
- ✓ Protect against fungal decay and insects
- ✓ Earn Green Building credits
- ✓ Meet the Fire Protection of Floors requirements of 2015 and 2018 (IRC R302.13) with no need for sprinklers, gypsum, or other enhancements.

INQUIRE TODAY

EWP Sales

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Email: EWPsales@tolko.com

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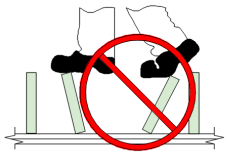
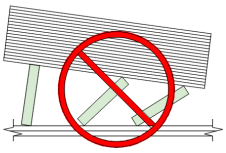
WARNING

Floor/Roof Joists are not stable until completely installed and will not carry any load until fully braced and sheathed.

Avoid accidents by following these important guidelines:

1) Do not allow workers to walk on Tolko T-TEC LSL® Joists until all hangers, Rim Joists, Rim Boards, Blocking Panels, and temporary strut/bracing lines are installed as specified below.
2) Never stack building materials over unsheathed Joists. Stack only over braced beams or walls. See APA Technical Note number J735B "Temporary Construction Loads Over I-Joist Roofs and Floors" for additional information regarding proper stacking of building materials.
3) Failure to install temporary bracing may result in sideway buckling or roll-over under light construction loads.





4) Build a braced end wall at the end of the bay, or permanently install the first 8 ft. of Tolko T-TEC LSL® joists and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first 4 ft. of Tolko T-TEC LSL® joists at the end of the bay.
5) Install temporary strut lines at no more than 8 ft. on center as additional Tolko T-TEC LSL® joists are set. Nail the strut lines to the sheathing area, or brace end wall, to each Tolko T-TEC LSL® joist with two 8d common nails (0.131" x 2.5").
6) Remove the temporary strut lines only as required to install the permanent sheathing.
7) For cantilevered joists, brace top and bottom edges, and brace ends with closure panels, rim board, or cross-bridging.
8) Install and nail permanent sheathing to each joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
9) Never install a damaged I joist or beam.

Improper storage or installation, failure to follow applicable building codes, span charts, or failure to use the allowable hole sizes and locations can result in serious accidents. Follow these installation guidelines carefully.

PROPOSITION 65 WARNING

WARNING

Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhailing wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov/wood.

WARNING

This product can expose you to chemicals including methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

T-TEC LSL Joists are backed by:
Transferable, 50-Year Warranty
ICC-ES: ESR-2725
APA PR-L284

Certain grades, widths and thickness may not be available in your area. Please contact your Tolko EWP representative.

EWP Sales
Phone: 250-549-5311
Email: EWPsales@tolko.com

GREEN BUILDING STANDARDS

All Tolko products meet international Green Building standards, including LEED and Green Globes. Tolko products earn the certified wood credit under these standards through our Sustainable Forest Management (SFM) certification, Sustainable Forestry Initiative® (SFI) which fully qualifies under the LEED standard via the LEED

Alternative Compliance Path process. In addition, our panel products qualify for incremental LEED credits under the low emitting materials requirements.

Promoting Sustainable Forest Management
PEFC
PEFC/26-31-51
pefccanada.org

SUSTAINABLE FORESTRY INITIATIVE
SFI-01530

SECTION 1: TOLKO T-TEC LSL - DESIGN PROPERTIES

TABLE 1: TOLKO T-TEC LSL - DESIGN PROPERTIES [a] (ALLOWABLE STRESS DESIGN - 100% LOAD DURATION)

Width (in.)	Depth (in.)	Self-weight (plf)	Fb[b],[c] (psi)	Fv (psi)	E[e] (x 10^6 psi)	Fc⊥_edge (psi)	Bending Moment[d] (lb.ft)	Shear (lb)	EI (x 10^6 lb.in²)
1.35E T-TEC LSL									
1.5	5.5	2.5	1,850	330	1.35	750	1,285	1,815	28
1.5	7.25	3.2	1,850	330	1.35	750	2,158	2,393	64
1.5	9.25	4.1	1,850	330	1.35	750	3,407	3,053	134
1.5	9.5	4.3	1,850	330	1.35	750	3,581	3,135	145
1.5	11.25	5.0	1,850	330	1.35	750	4,917	3,713	240
1.5	11.875	5.3	1,850	330	1.35	750	5,442	3,919	283
1.5	14	6.3	1,850	330	1.35	750	7,410	4,620	463
1.75	5.5	2.9	1,850	330	1.35	750	1,500	2,118	33
1.75	7.25	3.8	1,850	330	1.35	750	2,517	2,791	75
1.75	9.25	4.8	1,850	330	1.35	750	3,975	3,561	156
1.75	9.5	5.0	1,850	330	1.35	750	4,178	3,658	169
1.75	11.25	5.9	1,850	330	1.35	750	5,737	4,331	280
1.75	11.875	6.2	1,850	330	1.35	750	6,349	4,572	330
1.75	14	7.3	1,850	330	1.35	750	8,645	5,390	540
1.75	16	8.4	1,850	330	1.35	750	11,105	6,160	806
1.55E T-TEC LSL									
1.5	5.5	2.5	2,360	525	1.55	900	1,640	2,888	32
1.5	7.25	3.2	2,360	525	1.55	900	2,752	3,806	74
1.5	9.25	4.1	2,360	525	1.55	900	4,346	4,856	153
1.5	9.5	4.3	2,360	525	1.55	900	4,569	4,988	166
1.5	11.25	5.0	2,360	525	1.55	900	6,273	5,906	276
1.5	11.875	5.3	2,360	525	1.55	900	6,942	6,234	324
1.5	14	6.3	2,360	525	1.55	900	9,453	7,350	532

(a) The tabulated values are design values for normal load duration. All values, except E and Fc⊥, are permitted to be adjusted for other load durations as permitted by the code. The design stresses are limited to conditions in which the average equivalent moisture content in service does not exceed 16 percent, as in most covered structures.

(b) Tabulated flexural stress (Fb) may be increased by 4 percent when the member qualifies as a repetitive member as defined in NDS.

(c) Tabulated value is based on a reference depth of 12 inches. For other depths, when loaded edgewise, Fb shall be modified by $(12/d)^{0.125}$, where d = depth in inches. For depths less than 2-1/2 inches, the factor for the 2-1/2-inch depth shall be used.

(d) Bending moment has been adjusted by the size factor as per (c), but the repetitive factor of 1.04 has not been applied.

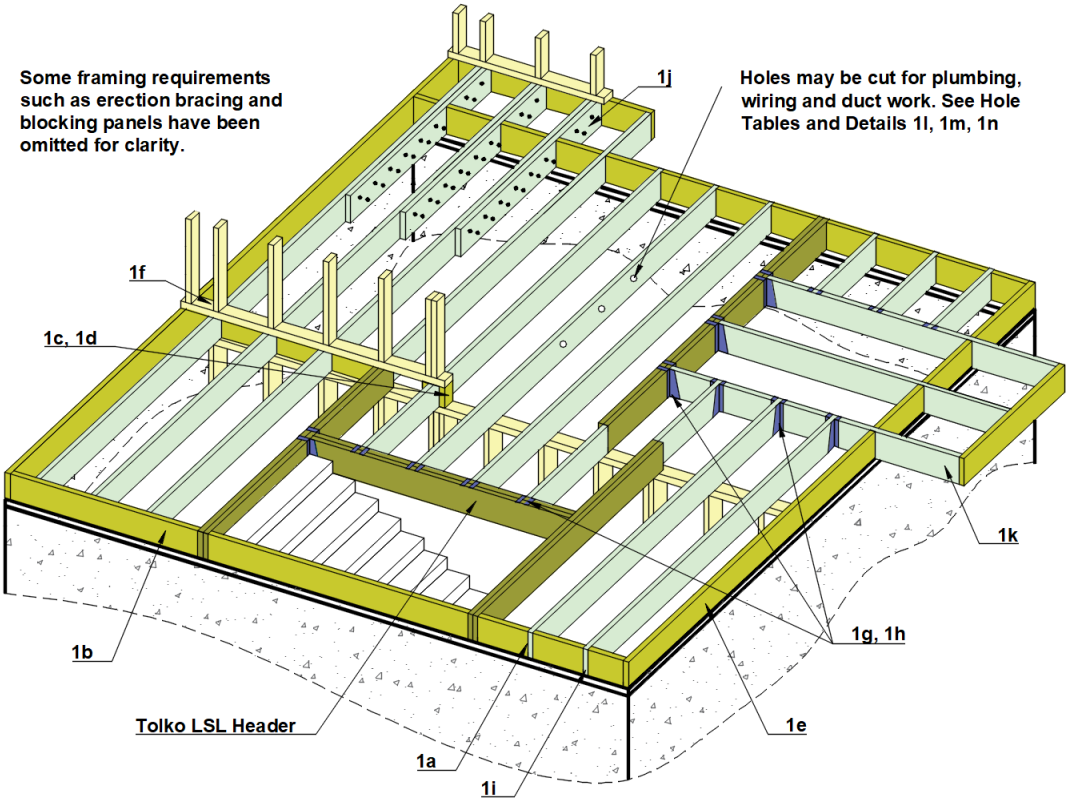
(e) For a simple span member, deflection for a uniform load could be calculated as follows:

$$\delta_T = \frac{270wL^4}{Ebh^3}$$

where:
δT = total deflection (in)
w = applied uniform loads (lbf/ft)
L = design span (ft)
E = modulus of elasticity (lbf/in²)
b = width (in)
h = depth (in)

SECTION 2: TYPICAL FLOOR FRAMING AND CONSTRUCTION DETAILS

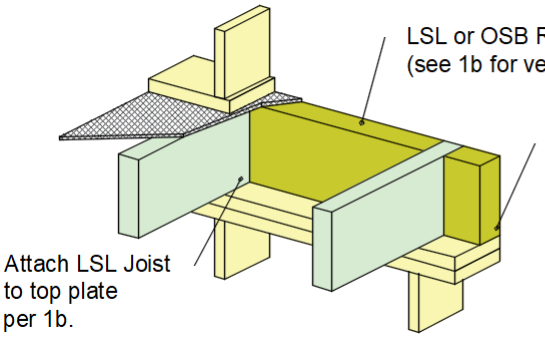
FIGURE 1: TYPICAL FLOOR FRAMING AND CONSTRUCTION DETAILS FOR TOLKO T-TEC LSL FLOOR JOISTS



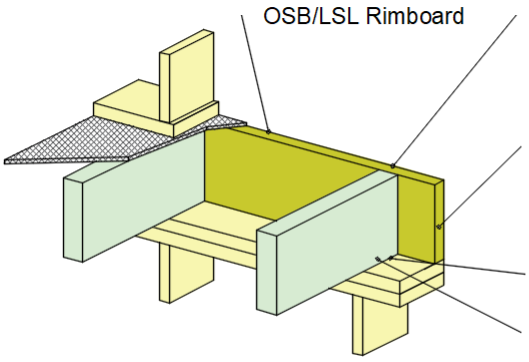
Notes:

1) Do not allow workers to walk on Tolko T-TEC LSL® Joists until all hangers, Rim Joists, Rim Boards, Blocking Panels, and temporary strut lines are installed as specified below.
2) Failure to install temporary bracing may result in sideway buckling or roll-over under light construction loads.
3) Build a braced end wall at the end of the bay, or permanently install the first 8 ft. of Tolko T-TEC LSL® joists and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first 4 ft. of Tolko T-TEC LSL® joists at the end of the bay.
4) Install temporary strut lines at no more than 8 ft. on center as additional Tolko T-TEC LSL® joists are set. Nail the strut lines to the sheathing area, or brace end wall, to each Tolko T-TEC LSL® joist with two 8d common nails (0.131" x 2.5").
5) The end of the cantilevers must be temporarily secured by strut lines on both top and bottom edges of the Tolko T-TEC LSL® joists.
6) Remove the temporary strut lines only as required to install the permanent sheathing.
7) Except for cutting to length, never cut, notch or drill holes that violate the hole charts for the Tolko T-TEC LSL® joists.
8) Tolko T-TEC LSL® joists must be anchored securely to supports before the floor sheathing is attached and the supports for multiple-span joists must be level.
9) Minimum bearing lengths are 1.5" for the end bearings and 3.5" for the intermediate bearings for the Tolko T-TEC LSL® joists.
10) When using hangers, seat Tolko T-TEC LSL® joists firmly in hanger bottoms to minimize settlement.
11) Never install Tolko T-TEC LSL® joists where they will be permanently exposed to weather or where they will remain in direct contact with concrete or masonry.
12) Restrain ends of floor joists to prevent rollover. Use rim board, or LSL blocking panels.
13) For joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks to transfer gravity loads through the floor system to the wall or foundation below.
14) Due to shrinkage, common framing timber set on edge cannot be used as blocking or rim boards.
15) Provide permanent lateral support along the joist depth at interior supports of multiple-span joists. Glue panels to blocking to minimize squeaks.
16) See Table 2 for recommended sheathing attachment with nails. Do not use nails larger or spaced closer than shown in the Table 2. If more than one row of nails is required, rows must be offset by at least ½" and staggered.

Detail 1a. Exterior End Wall Blocking



Detail 1b. Exterior End Wall Rim Board



Tolko OSB Rimboard Plus vertical load capacity = 4850 plf for 1-1/8" or 1-1/4" thickness (depths less or equal to 16").
1.35 & 1.55E Tolko T-TEC LSL vertical load capacity = 5400 plf for 1-1/4" or 1-1/2" thickness (depths less or equal to 16").

Detail 1c. Squash Blocks

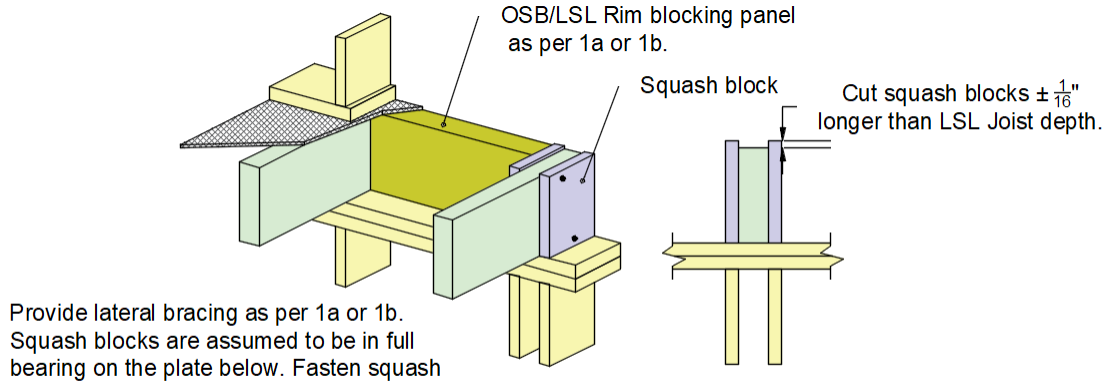


TABLE 2: SHEATHING FASTENING (FLOOR/ROOF JOISTS)

Max. 1.35E Tolko T-TEC LSL® Joist Spacing (in)	Panel Performance Category Sturd-I-Floor[d]	Nail type	Glued & Nailed[b, c] Subfloor				Nailed[c] Only Subfloor			
			Nail Diameter (in)	Nail Length (in)	Maximum Spacing[e] (in)		Nail Diameter (in)	Nail Length (in)	Maximum Spacing[e] (in)	
					Supported Panel Edges[c]	Intermediate Supports			Supported Panel Edges	Intermediate Supports
19.2	19/32, 5/8	6d ring - or screw-sank	0.120	2	6[a]	12	0.120	2	6	12
		8d common	0.131	2.5			0.131	2.5		
24	23/32, 3/4	6d ring - or screw-sank	0.120	2	6[a]	12	0.120	2	6	12
		8d common	0.131	2.5			0.131	2.5		
	7/8	8d ring - or screw-sank	0.120	2.5	6	12	0.120	2.5	6	12
		8d common	0.131	2.5			0.131	2.5		

(a) Check with local building official; some local jurisdictions permit nail spacing at 12 inches oc.
(b) Adhesives conforming to APA Specification AFG-01 or ASTM D3498 shall be used.
(c) Supported panel joints shall occur approximately along the center-line of framing with a minimum bearing of 1/2 inch. Fasten panels 3/8 inch from panel edges.
(d) Exterior panels shall be specified if long-term exposure to the weather is required.
(e) Increased fastening schedule may be required where floor is engineered as a diaphragm.

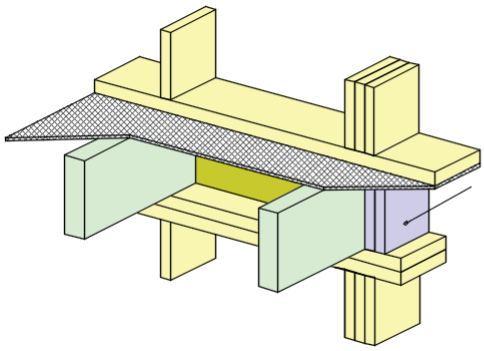
Reference: APA - The Engineering Wood Association - Form No. E30V

TABLE 3: SQUASH BLOCKS - VERTICAL LOAD CAPACITIES PER PAIR OF SQUASH BLOCKS (LB/FT)

Squash Blocks Grade	Squash Blocks Dimensions		Maximum Vertical Load per Pair of Squash Blocks [lb/ft]			
			Joist Spacing (in)			
	Width (in)	Depth (in)	12	16	19.2	24
SPF No.2 or better; Tolko T-TEC LSL	1.5	3.5	3255	2440	2035	1625
		5.5	5115	3835	3195	2555
		7.25	6745	5060	4215	3370
Tolko T-TEC LSL	1.25	3.5	2710	2035	1695	1355
		5.5	4265	3195	2665	2130
		7.25	5620	4215	3510	2810

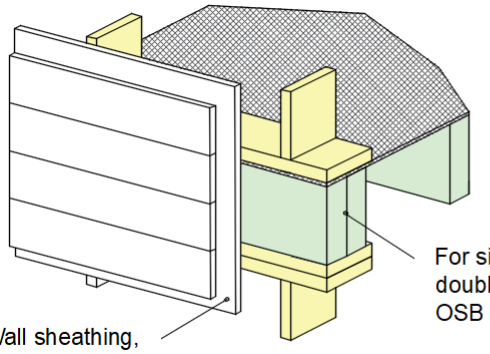
Note: Max height for the squash blocks = 16”

Detail 1d. Squash Blocks Matching Bearing Area for the Posts Above and Below



Transfer load from above to bearing below. Install squash blocks per 1c. Match bearing area of blocks below to post above.

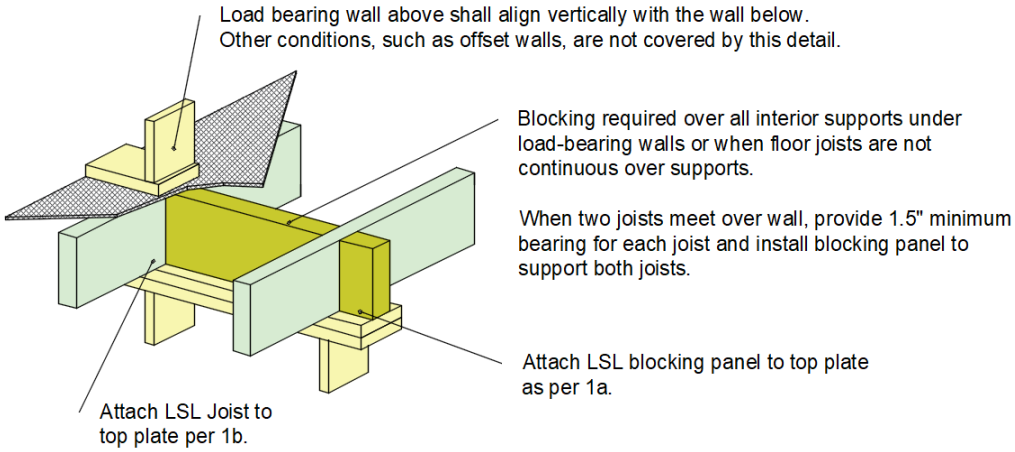
Detail 1e. Exterior Wall Supported by Double LSL Joists



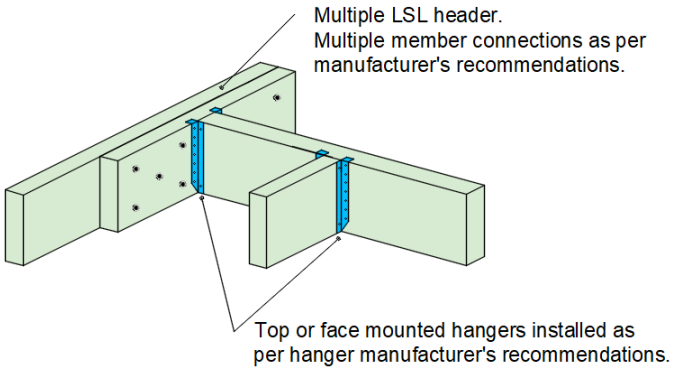
For single LSL Joist, see detail 1b for capacities. For double LSL Joists the capacities may be doubled. Tolko OSB Rim Board may be used in lieu of LSL Joists.

Wall sheathing, as required.

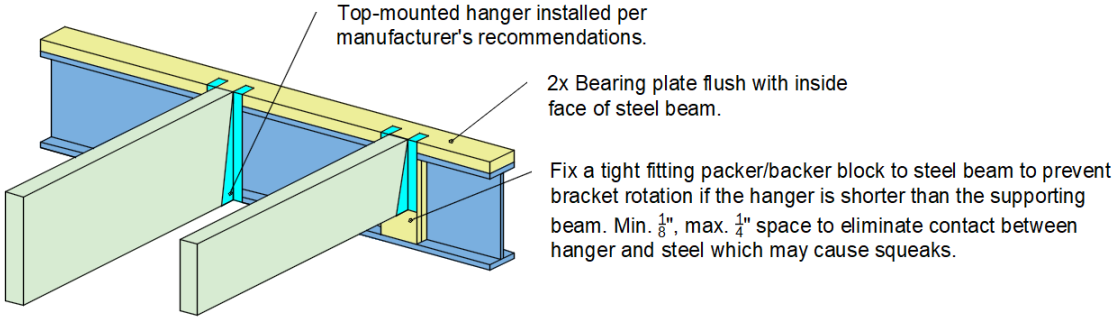
Detail 1f. Interior Load Bearing Wall



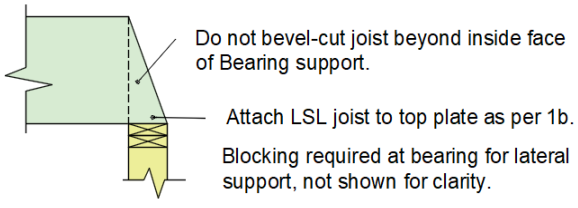
Detail 1g. LSL Joists Supported by Multi-Ply Beams



Detail 1h. LSL Joists Supported by I-Steel Beam



Detail 1i. Do Not Bevel Cut Beyond Inside Face of Bearing Support



SECTION 3: TOLKO T-TEC LSL FLOOR SPAN CHARTS

TABLE 4: FLOOR SPAN CHART: 40/10 PSF; NAILED SUBFLOOR; L/360 LIVE LOAD DEFLECTION - 1.35E LSL

40 psf Live Load; 10 psf Dead Load Live Load Deflection = L/360; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.35E LSL, 1.5"x5.5"	10'-0"	9'-1"	8'-6"	7'-10"	11'-2"	10'-1"	9'-5"	8'-9"
1.35E LSL, 1.5"x7.25"	13'-3"	12'-0"	11'-3"	10'-5"	14'-9"	13'-5"	12'-7"	11'-7"
1.35E LSL, 1.5"x9.25"	16'-11"	15'-4"	14'-5"	13'-4"	18'-11"	17'-2"	16'-1"	14'-11"
1.35E LSL, 1.5"x9.5"	17'-5"	15'-9"	14'-10"	13'-8"	19'-6"	17'-8"	16'-7"	15'-4"
1.35E LSL, 1.5"x11.25"	20'-8"	18'-9"	17'-7"	16'-3"	23'-1"	20'-11"	19'-8"	16'-4"
1.35E LSL, 1.5"x11.875"	21'-10"	19'-9"	18'-7"	17'-2"	24'-5"	22'-1"	20'-6"	16'-4"
1.35E LSL, 1.5"x14"	25'-9"	23'-4"	21'-11"	20'-3"	28'-10"	24'-8"	20'-6"	16'-4"
1.35E LSL, 1.75"x5.5"	10'-7"	9'-7"	9'-0"	8'-3"	11'-9"	10'-7"	10'-0"	9'-3"
1.35E LSL, 1.75"x7.25"	14'-0"	12'-8"	11'-11"	11'-0"	15'-7"	14'-1"	13'-3"	12'-3"
1.35E LSL, 1.75"x9.25"	17'-11"	16'-2"	15'-2"	14'-1"	20'-0"	18'-1"	17'-0"	15'-9"
1.35E LSL, 1.75"x9.5"	18'-4"	16'-8"	15'-7"	14'-5"	20'-6"	18'-7"	17'-6"	16'-2"
1.35E LSL, 1.75"x11.25"	21'-9"	19'-9"	18'-6"	17'-2"	24'-5"	22'-1"	20'-9"	19'-2"
1.35E LSL, 1.75"x11.875"	23'-0"	20'-10"	19'-7"	18'-1"	25'-9"	23'-4"	21'-11"	19'-4"
1.35E LSL, 1.75"x14"	27'-2"	24'-7"	23'-1"	21'-5"	30'-5"	27'-7"	24'-3"	19'-4"
1.35E LSL, 1.75"x16"	31'-1"	28'-2"	26'-5"	24'-3"	34'-10"	29'-2"	24'-3"	19'-4"

Notes:

1) Tabulated spans have been designed to meet the IBC, IRC and the NDS requirements.
2) Tabulated spans are measured from the inside face of end bearings for single spans, and from inside face of end bearing to inside face of interior bearing for continuous spans. The shortest span shall not be less than 40% the longest span. For two spans with a span ratio in between 0.4 and 0.7, the uplift (lbs) at the end of the short span is equal to -10*Longer Span (feet)*Spacing(inches)/12. Install metal hangers or equivalent to withstand the uplift force at the end of the short span. For all other applications, consult Tolko.
3) Tabulated Glued & Nailed spans are based on partial composite action using OSB APA Rated Sheathing or STURD-I-FLOOR® conforming to PRP-108, PS 1, PS 2. See APA Engineering Wood Construction Guide, Form E30, for fastener size and spacings. Construction adhesive shall meet the requirements given in ASTM D3498 or APA Specification AFG-01.
4) Min. end bearing length shall be 1 3/4", and 3 1/2" for the interior bearing supports. Joists shall be supported on the full width for the required minimum length of bearing.
5) Continuous lateral support must be provided on the compression top and bottom edges. Continuous lateral support is considered to be a maximum unbraced length of 24". This is normally provided by sheathing and/or framing members, which must be adequately anchored to the member and supporting structure.
6) Lateral support must be provided at all bearing locations to prevent lateral displacement and rotation.
7) Joists shall be used in a dry, well ventilated environment, where the moisture content in service does not exceed 16%, as in most covered structures.
8) Point loads from above over bearing supports shall be properly transferred by squash blocks or pass-through framing.
9) Tabulated values are only valid for uniform loads, and for a load duration C_D = 1.0
10) The spans are limited to the bearing capacity of SPF wall plate ($F_{c\perp}$ = 425 psi)
11) For loading conditions not shown, use the CSD® Software or contact your Tolko representative.
12) For lengths exceeding 24 ft., check with Tolko's representative for product availability.

TABLE 5: FLOOR SPAN CHART: 40/10 PSF; GLUED & NAILED SUBFLOOR; L/360 LIVE LOAD DEFLECTION - 1.35E LSL

40 psf Live Load; 10 psf Dead Load Live Load Deflection = L/360; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - GLUED & NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.35E LSL, 1.5"x5.5"	11'-2"	10'-4"	9'-10"	9'-3"	12'-5"	11'-6"	10'-11"	9'-10"
1.35E LSL, 1.5"x7.25"	14'-5"	13'-4"	12'-8"	11'-11"	16'-1"	14'-10"	14'-1"	12'-10"
1.35E LSL, 1.5"x9.25"	18'-2"	16'-8"	15'-10"	14'-11"	20'-4"	18'-8"	17'-9"	16'-2"
1.35E LSL, 1.5"x9.5"	18'-7"	17'-1"	16'-3"	15'-3"	20'-10"	19'-2"	18'-2"	16'-4"
1.35E LSL, 1.5"x11.25"	21'-10"	20'-1"	19'-1"	17'-10"	24'-6"	22'-6"	20'-6"	16'-4"
1.35E LSL, 1.5"x11.875"	23'-0"	21'-2"	20'-1"	18'-10"	25'-9"	23'-8"	20'-6"	16'-4"
1.35E LSL, 1.5"x14"	27'-0"	24'-9"	23'-5"	20'-6"	30'-3"	24'-8"	20'-6"	16'-4"
1.35E LSL, 1.75"x5.5"	11'-8"	10'-9"	10'-3"	9'-8"	13'-0"	12'-0"	11'-5"	10'-7"
1.35E LSL, 1.75"x7.25"	15'-1"	13'-11"	13'-2"	12'-5"	16'-10"	15'-6"	14'-9"	13'-10"
1.35E LSL, 1.75"x9.25"	19'-0"	17'-5"	16'-7"	15'-7"	21'-3"	19'-6"	18'-6"	17'-5"
1.35E LSL, 1.75"x9.5"	19'-6"	17'-11"	17'-0"	15'-11"	21'-9"	20'-0"	19'-0"	17'-10"
1.35E LSL, 1.75"x11.25"	22'-11"	21'-0"	19'-11"	18'-8"	25'-8"	23'-6"	22'-4"	19'-4"
1.35E LSL, 1.75"x11.875"	24'-1"	22'-2"	21'-0"	19'-8"	27'-0"	24'-9"	23'-6"	19'-4"
1.35E LSL, 1.75"x14"	28'-3"	25'-11"	24'-6"	23'-0"	31'-8"	29'-0"	24'-3"	19'-4"
1.35E LSL, 1.75"x16"	32'-2"	29'-5"	27'-10"	24'-3"	36'-1"	29'-2"	24'-3"	19'-4"

Notes

Refer to design notes from Table 4.

TABLE 6: FLOOR SPAN CHART: 40/10 PSF; NAILED SUBFLOOR; L/480 LIVE LOAD DEFLECTION - 1.35E LSL

40 psf Live Load; 10 psf Dead Load Live Load Deflection = L/480; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.35E LSL, 1.5"x5.5"	9'-1"	8'-2"	7'-8"	7'-1"	10'-1"	9'-1"	8'-6"	7'-10"
1.35E LSL, 1.5"x7.25"	12'-0"	10'-10"	10'-2"	9'-5"	13'-5"	12'-1"	11'-4"	10'-6"
1.35E LSL, 1.5"x9.25"	15'-4"	13'-11"	13'-0"	12'-1"	17'-2"	15'-6"	14'-7"	13'-6"
1.35E LSL, 1.5"x9.5"	15'-9"	14'-3"	13'-5"	12'-5"	17'-8"	15'-11"	15'-0"	13'-10"
1.35E LSL, 1.5"x11.25"	18'-9"	16'-11"	15'-11"	14'-8"	20'-11"	18'-11"	17'-9"	16'-4"
1.35E LSL, 1.5"x11.875"	19'-9"	17'-11"	16'-9"	15'-6"	22'-1"	20'-0"	18'-10"	16'-4"
1.35E LSL, 1.5"x14"	23'-4"	21'-1"	19'-10"	18'-4"	26'-2"	23'-8"	20'-6"	16'-4"
1.35E LSL, 1.75"x5.5"	9'-7"	8'-8"	8'-1"	7'-6"	10'-7"	9'-7"	9'-0"	8'-4"
1.35E LSL, 1.75"x7.25"	12'-8"	11'-5"	10'-9"	9'-11"	14'-1"	12'-9"	12'-0"	11'-1"
1.35E LSL, 1.75"x9.25"	16'-2"	14'-8"	13'-9"	12'-9"	18'-1"	16'-5"	15'-5"	14'-3"
1.35E LSL, 1.75"x9.5"	16'-8"	15'-1"	14'-2"	13'-1"	18'-7"	16'-10"	15'-10"	14'-7"
1.35E LSL, 1.75"x11.25"	19'-9"	17'-10"	16'-9"	15'-6"	22'-1"	20'-0"	18'-9"	17'-4"
1.35E LSL, 1.75"x11.875"	20'-10"	18'-10"	17'-9"	16'-5"	23'-4"	21'-2"	19'-10"	18'-4"
1.35E LSL, 1.75"x14"	24'-7"	22'-3"	20'-11"	19'-4"	27'-7"	25'-0"	23'-5"	19'-4"
1.35E LSL, 1.75"x16"	28'-2"	25'-6"	23'-11"	22'-2"	31'-7"	28'-7"	24'-3"	19'-4"

Notes

Refer to design notes from Table 4.

TABLE 7: FLOOR SPAN CHART: 40/10 PSF; GLUED & NAILED SUBFLOOR; L/480 LIVE LOAD DEFLECTION - 1.35E LSL

40 psf Live Load; 10 psf Dead Load Live Load Deflection = L/480; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - GLUED & NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.35E LSL, 1.5"x5.5"	10'-1"	9'-4"	8'-10"	8'-4"	11'-3"	10'-5"	9'-10"	9'-3"
1.35E LSL, 1.5"x7.25"	13'-1"	12'-0"	11'-5"	10'-9"	14'-7"	13'-5"	12'-9"	12'-0"
1.35E LSL, 1.5"x9.25"	16'-5"	15'-1"	14'-4"	13'-6"	18'-4"	16'-11"	16'-0"	15'-1"
1.35E LSL, 1.5"x9.5"	16'-10"	15'-6"	14'-8"	13'-10"	18'-10"	17'-4"	16'-5"	15'-5"
1.35E LSL, 1.5"x11.25"	19'-10"	18'-2"	17'-3"	16'-2"	22'-2"	20'-4"	19'-4"	16'-4"
1.35E LSL, 1.5"x11.875"	20'-10"	19'-2"	18'-2"	17'-0"	23'-4"	21'-5"	20'-4"	16'-4"
1.35E LSL, 1.5"x14"	24'-5"	22'-5"	21'-2"	19'-10"	27'-5"	24'-8"	20'-6"	16'-4"
1.35E LSL, 1.75"x5.5"	10'-6"	9'-9"	9'-3"	8'-8"	11'-9"	10'-10"	10'-4"	9'-8"
1.35E LSL, 1.75"x7.25"	13'-8"	12'-7"	11'-11"	11'-3"	15'-3"	14'-0"	13'-4"	12'-6"
1.35E LSL, 1.75"x9.25"	17'-2"	15'-10"	15'-0"	14'-1"	19'-3"	17'-8"	16'-9"	15'-9"
1.35E LSL, 1.75"x9.5"	17'-8"	16'-2"	15'-4"	14'-5"	19'-9"	18'-1"	17'-2"	16'-2"
1.35E LSL, 1.75"x11.25"	20'-9"	19'-0"	18'-0"	16'-11"	23'-3"	21'-4"	20'-2"	18'-11"
1.35E LSL, 1.75"x11.875"	21'-10"	20'-0"	19'-0"	17'-9"	24'-6"	22'-5"	21'-3"	19'-4"
1.35E LSL, 1.75"x14"	25'-7"	23'-5"	22'-2"	20'-9"	28'-9"	26'-4"	24'-3"	19'-4"
1.35E LSL, 1.75"x16"	29'-2"	26'-8"	25'-3"	23'-7"	32'-8"	29'-2"	24'-3"	19'-4"

Notes

Refer to design notes from Table 4.

TABLE 8: FLOOR SPAN CHART: 40/20 PSF: NAILED SUBFLOOR; L/360 LIVE LOAD DEFLECTION - 1.35E LSL

40 psf Live Load; 20 psf Dead Load Live Load Deflection = L/360; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.35E LSL, 1.5"x5.5"	10'-0"	9'-1"	8'-6"	7'-10"	11'-2"	10'-1"	9'-5"	8'-9"
1.35E LSL, 1.5"x7.25"	13'-3"	12'-0"	11'-3"	10'-5"	14'-9"	13'-5"	12'-7"	11'-7"
1.35E LSL, 1.5"x9.25"	16'-11"	15'-4"	14'-5"	13'-4"	18'-11"	17'-2"	16'-1"	13'-7"
1.35E LSL, 1.5"x9.5"	17'-5"	15'-9"	14'-10"	13'-8"	19'-6"	17'-8"	16'-7"	13'-7"
1.35E LSL, 1.5"x11.25"	20'-8"	18'-9"	17'-7"	16'-3"	23'-1"	20'-6"	17'-0"	13'-7"
1.35E LSL, 1.5"x11.875"	21'-10"	19'-9"	18'-7"	17'-0"	24'-5"	20'-6"	17'-0"	13'-7"
1.35E LSL, 1.5"x14"	25'-9"	23'-4"	21'-5"	17'-0"	27'-6"	20'-6"	17'-0"	13'-7"
1.35E LSL, 1.75"x5.5"	10'-7"	9'-7"	9'-0"	8'-3"	11'-9"	10'-7"	10'-0"	9'-3"
1.35E LSL, 1.75"x7.25"	14'-0"	12'-8"	11'-11"	11'-0"	15'-7"	14'-1"	13'-3"	12'-3"
1.35E LSL, 1.75"x9.25"	17'-11"	16'-2"	15'-2"	14'-1"	20'-0"	18'-1"	17'-0"	15'-9"
1.35E LSL, 1.75"x9.5"	18'-4"	16'-8"	15'-7"	14'-5"	20'-6"	18'-7"	17'-6"	16'-1"
1.35E LSL, 1.75"x11.25"	21'-9"	19'-9"	18'-6"	17'-2"	24'-5"	22'-1"	20'-2"	16'-1"
1.35E LSL, 1.75"x11.875"	23'-0"	20'-10"	19'-7"	18'-1"	25'-9"	23'-4"	20'-2"	16'-1"
1.35E LSL, 1.75"x14"	27'-2"	24'-7"	23'-1"	20'-2"	30'-5"	24'-3"	20'-2"	16'-1"
1.35E LSL, 1.75"x16"	31'-1"	28'-2"	25'-3"	20'-2"	32'-5"	24'-3"	20'-2"	16'-1"

Notes

Refer to design notes from Table 4.

TABLE 9: FLOOR SPAN CHART: 40/20 PSF; GLUED & NAILED SUBFLOOR; L/360 LIVE LOAD DEFLECTION - 1.35E LSL

40 psf Live Load; 20 psf Dead Load Live Load Deflection = L/360; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - GLUED & NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.35E LSL, 1.5"x5.5"	11'-2"	10'-4"	9'-10"	9'-1"	12'-5"	11'-0"	10'-0"	8'-11"
1.35E LSL, 1.5"x7.25"	14'-5"	13'-4"	12'-8"	11'-10"	16'-1"	14'-4"	13'-1"	11'-8"
1.35E LSL, 1.5"x9.25"	18'-2"	16'-8"	15'-10"	14'-11"	20'-4"	18'-1"	16'-6"	13'-7"
1.35E LSL, 1.5"x9.5"	18'-7"	17'-1"	16'-3"	15'-3"	20'-10"	18'-7"	16'-11"	13'-7"
1.35E LSL, 1.5"x11.25"	21'-10"	20'-1"	19'-1"	17'-0"	24'-6"	20'-6"	17'-0"	13'-7"
1.35E LSL, 1.5"x11.875"	23'-0"	21'-2"	20'-1"	17'-0"	25'-9"	20'-6"	17'-0"	13'-7"
1.35E LSL, 1.5"x14"	27'-0"	24'-9"	21'-5"	17'-0"	27'-6"	20'-6"	17'-0"	13'-7"
1.35E LSL, 1.75"x5.5"	11'-8"	10'-9"	10'-3"	9'-8"	13'-0"	11'-11"	10'-10"	9'-8"
1.35E LSL, 1.75"x7.25"	15'-1"	13'-11"	13'-2"	12'-5"	16'-10"	15'-6"	14'-2"	12'-7"
1.35E LSL, 1.75"x9.25"	19'-0"	17'-5"	16'-7"	15'-7"	21'-3"	19'-6"	17'-10"	15'-11"
1.35E LSL, 1.75"x9.5"	19'-6"	17'-11"	17'-0"	15'-11"	21'-9"	20'-0"	18'-4"	16'-1"
1.35E LSL, 1.75"x11.25"	22'-11"	21'-0"	19'-11"	18'-8"	25'-8"	23'-6"	20'-2"	16'-1"
1.35E LSL, 1.75"x11.875"	24'-1"	22'-2"	21'-0"	19'-8"	27'-0"	24'-3"	20'-2"	16'-1"
1.35E LSL, 1.75"x14"	28'-3"	25'-11"	24'-6"	20'-2"	31'-8"	24'-3"	20'-2"	16'-1"
1.35E LSL, 1.75"x16"	32'-2"	29'-5"	25'-3"	20'-2"	32'-5"	24'-3"	20'-2"	16'-1"

Notes

Refer to design notes from Table 4.

TABLE 10: FLOOR SPAN CHART: 40/20 PSF; NAILED SUBFLOOR; L/480 LIVE LOAD DEFLECTION - 1.35E LSL

40 psf Live Load; 20 psf Dead Load Live Load Deflection = L/480; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - NAILED								
Joist Series	Single Span				OC Spacing			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.35E LSL, 1.5"x5.5"	9'-1"	8'-2"	7'-8"	7'-1"	10'-1"	9'-1"	8'-6"	7'-10"
1.35E LSL, 1.5"x7.25"	12'-0"	10'-10"	10'-2"	9'-5"	13'-5"	12'-1"	11'-4"	10'-6"
1.35E LSL, 1.5"x9.25"	15'-4"	13'-11"	13'-0"	12'-1"	17'-2"	15'-6"	14'-7"	13'-6"
1.35E LSL, 1.5"x9.5"	15'-9"	14'-3"	13'-5"	12'-5"	17'-8"	15'-11"	15'-0"	13'-7"
1.35E LSL, 1.5"x11.25"	18'-9"	16'-11"	15'-11"	14'-8"	20'-11"	18'-11"	17'-0"	13'-7"
1.35E LSL, 1.5"x11.875"	19'-9"	17'-11"	16'-9"	15'-6"	22'-1"	20'-0"	17'-0"	13'-7"
1.35E LSL, 1.5"x14"	23'-4"	21'-1"	19'-10"	17'-0"	26'-2"	20'-6"	17'-0"	13'-7"
1.35E LSL, 1.75"x5.5"	9'-7"	8'-8"	8'-1"	7'-6"	10'-7"	9'-7"	9'-0"	8'-4"
1.35E LSL, 1.75"x7.25"	12'-8"	11'-5"	10'-9"	9'-11"	14'-1"	12'-9"	12'-0"	11'-1"
1.35E LSL, 1.75"x9.25"	16'-2"	14'-8"	13'-9"	12'-9"	18'-1"	16'-5"	15'-5"	14'-3"
1.35E LSL, 1.75"x9.5"	16'-8"	15'-1"	14'-2"	13'-1"	18'-7"	16'-10"	15'-10"	14'-7"
1.35E LSL, 1.75"x11.25"	19'-9"	17'-10"	16'-9"	15'-6"	22'-1"	20'-0"	18'-9"	16'-1"
1.35E LSL, 1.75"x11.875"	20'-10"	18'-10"	17'-9"	16'-5"	23'-4"	21'-2"	19'-10"	16'-1"
1.35E LSL, 1.75"x14"	24'-7"	22'-3"	20'-11"	19'-4"	27'-7"	24'-3"	20'-2"	16'-1"
1.35E LSL, 1.75"x16"	28'-2"	25'-6"	23'-11"	20'-2"	31'-7"	24'-3"	20'-2"	16'-1"

Notes

Refer to design notes from Table 4.

TABLE 11: FLOOR SPAN CHART: 40/20 PSF; GLUED & NAILED SUBFLOOR; L/480 LIVE LOAD DEFLECTION - 1.35E LSL

40 psf Live Load; 20 psf Dead Load Live Load Deflection = L/480; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - GLUED & NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.35E LSL, 1.5"x5.5"	10'-1"	9'-4"	8'-10"	8'-4"	11'-3"	10'-5"	9'-10"	8'-11"
1.35E LSL, 1.5"x7.25"	13'-1"	12'-0"	11'-5"	10'-9"	14'-7"	13'-5"	12'-9"	11'-8"
1.35E LSL, 1.5"x9.25"	16'-5"	15'-1"	14'-4"	13'-6"	18'-4"	16'-11"	16'-0"	13'-7"
1.35E LSL, 1.5"x9.5"	16'-10"	15'-6"	14'-8"	13'-10"	18'-10"	17'-4"	16'-5"	13'-7"
1.35E LSL, 1.5"x11.25"	19'-10"	18'-2"	17'-3"	16'-2"	22'-2"	20'-4"	17'-0"	13'-7"
1.35E LSL, 1.5"x11.875"	20'-10"	19'-2"	18'-2"	17'-0"	23'-4"	20'-6"	17'-0"	13'-7"
1.35E LSL, 1.5"x14"	24'-5"	22'-5"	21'-2"	17'-0"	27'-5"	20'-6"	17'-0"	13'-7"
1.35E LSL, 1.75"x5.5"	10'-6"	9'-9"	9'-3"	8'-8"	11'-9"	10'-10"	10'-4"	9'-8"
1.35E LSL, 1.75"x7.25"	13'-8"	12'-7"	11'-11"	11'-3"	15'-3"	14'-0"	13'-4"	12'-6"
1.35E LSL, 1.75"x9.25"	17'-2"	15'-10"	15'-0"	14'-1"	19'-3"	17'-8"	16'-9"	15'-9"
1.35E LSL, 1.75"x9.5"	17'-8"	16'-2"	15'-4"	14'-5"	19'-9"	18'-1"	17'-2"	16'-1"
1.35E LSL, 1.75"x11.25"	20'-9"	19'-0"	18'-0"	16'-11"	23'-3"	21'-4"	20'-2"	16'-1"
1.35E LSL, 1.75"x11.875"	21'-10"	20'-0"	19'-0"	17'-9"	24'-6"	22'-5"	20'-2"	16'-1"
1.35E LSL, 1.75"x14"	25'-7"	23'-5"	22'-2"	20'-2"	28'-9"	24'-3"	20'-2"	16'-1"
1.35E LSL, 1.75"x16"	29'-2"	26'-8"	25'-3"	20'-2"	32'-5"	24'-3"	20'-2"	16'-1"

Notes

Refer to design notes from Table 4.

TABLE 12: FLOOR SPAN CHART: 40/10 PSF; NAILED SUBFLOOR; L/360 LIVE LOAD DEFLECTION - 1.55E LSL

40 psf Live Load; 10 psf Dead Load Live Load Deflection = L/360; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.55E LSL, 1.5"x5.5"	10'-6"	9'-6"	8'-11"	8'-3"	11'-8"	10'-7"	9'-11"	9'-2"
1.55E LSL, 1.5"x7.25"	13'-11"	12'-7"	11'-10"	10'-11"	15'-6"	14'-0"	13'-2"	12'-2"
1.55E LSL, 1.5"x9.25"	17'-9"	16'-1"	15'-1"	14'-0"	19'-11"	18'-0"	16'-11"	15'-8"
1.55E LSL, 1.5"x9.5"	18'-3"	16'-6"	15'-6"	14'-5"	20'-5"	18'-6"	17'-4"	16'-1"
1.55E LSL, 1.5"x11.25"	21'-8"	19'-8"	18'-5"	17'-1"	24'-3"	22'-0"	20'-6"	16'-4"
1.55E LSL, 1.5"x11.875"	22'-11"	20'-9"	19'-6"	18'-0"	25'-7"	23'-2"	20'-6"	16'-4"
1.55E LSL, 1.5"x14"	27'-0"	24'-6"	23'-0"	20'-6"	30'-3"	24'-8"	20'-6"	16'-4"

Notes
Refer to design notes from Table 4.

TABLE 13: FLOOR SPAN CHART: 40/10 PSF; GLUED & NAILED SUBFLOOR; L/360 LIVE LOAD DEFLECTION - 1.55E LSL

40 psf Live Load; 10 psf Dead Load Live Load Deflection = L/360; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - GLUED & NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.55E LSL, 1.5"x5.5"	11'-7"	10'-8"	10'-2"	9'-7"	12'-11"	11'-11"	11'-4"	10'-8"
1.55E LSL, 1.5"x7.25"	15'-0"	13'-10"	13'-2"	12'-4"	16'-9"	15'-5"	14'-8"	13'-10"
1.55E LSL, 1.5"x9.25"	18'-11"	17'-4"	16'-6"	15'-6"	21'-2"	19'-5"	18'-5"	16'-4"
1.55E LSL, 1.5"x9.5"	19'-5"	17'-10"	16'-11"	15'-10"	21'-8"	19'-11"	18'-11"	16'-4"
1.55E LSL, 1.5"x11.25"	22'-9"	20'-11"	19'-10"	18'-7"	25'-6"	23'-5"	20'-6"	16'-4"
1.55E LSL, 1.5"x11.875"	24'-0"	22'-0"	20'-10"	19'-7"	26'-11"	24'-8"	20'-6"	16'-4"
1.55E LSL, 1.5"x14"	28'-2"	25'-9"	24'-5"	20'-6"	31'-6"	24'-8"	20'-6"	16'-4"

Notes
Refer to design notes from Table 4.

TABLE 14: FLOOR SPAN CHART: 40/10 PSF; NAILED SUBFLOOR; L/480 LIVE LOAD DEFLECTION - 1.55E LSL

40 psf Live Load; 10 psf Dead Load Live Load Deflection = L/480; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.55E LSL, 1.5"x5.5"	9'-6"	8'-7"	8'-1"	7'-5"	10'-7"	9'-7"	8'-11"	8'-3"
1.55E LSL, 1.5"x7.25"	12'-7"	11'-5"	10'-8"	9'-11"	14'-0"	12'-8"	11'-11"	11'-0"
1.55E LSL, 1.5"x9.25"	16'-1"	14'-7"	13'-8"	12'-8"	18'-0"	16'-3"	15'-3"	14'-2"
1.55E LSL, 1.5"x9.5"	16'-6"	15'-0"	14'-1"	13'-0"	18'-6"	16'-9"	15'-9"	14'-6"
1.55E LSL, 1.5"x11.25"	19'-8"	17'-9"	16'-8"	15'-5"	22'-0"	19'-11"	18'-8"	16'-4"
1.55E LSL, 1.5"x11.875"	20'-9"	18'-9"	17'-7"	16'-4"	23'-2"	21'-0"	19'-9"	16'-4"
1.55E LSL, 1.5"x14"	24'-6"	22'-2"	20'-10"	19'-3"	27'-5"	24'-8"	20'-6"	16'-4"

Notes
Refer to design notes from Table 4.

TABLE 15: FLOOR SPAN CHART: 40/10 PSF; GLUED & NAILED SUBFLOOR; L/480 LIVE LOAD DEFLECTION - 1.55E LSL

40 psf Live Load; 10 psf Dead Load Live Load Deflection = L/480; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - GLUED & NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.55E LSL, 1.5"x5.5"	10'-6"	9'-8"	9'-3"	8'-8"	11'-8"	10'-9"	10'-3"	9'-8"
1.55E LSL, 1.5"x7.25"	13'-7"	12'-6"	11'-11"	11'-2"	15'-2"	14'-0"	13'-3"	12'-6"
1.55E LSL, 1.5"x9.25"	17'-1"	15'-9"	14'-11"	14'-0"	19'-2"	17'-7"	16'-8"	15'-8"
1.55E LSL, 1.5"x9.5"	17'-7"	16'-2"	15'-4"	14'-4"	19'-8"	18'-0"	17'-1"	16'-1"
1.55E LSL, 1.5"x11.25"	20'-8"	18'-11"	17'-11"	16'-10"	23'-1"	21'-2"	20'-1"	16'-4"
1.55E LSL, 1.5"x11.875"	21'-9"	19'-11"	18'-11"	17'-8"	24'-4"	22'-4"	20'-6"	16'-4"
1.55E LSL, 1.5"x14"	25'-6"	23'-4"	22'-1"	20'-6"	28'-7"	24'-8"	20'-6"	16'-4"

Notes
Refer to design notes from Table 4.

TABLE 16: FLOOR SPAN CHART: 40/20 PSF; NAILED SUBFLOOR; L/360 LIVE LOAD DEFLECTION - 1.55E LSL

40 psf Live Load; 20 psf Dead Load Live Load Deflection = L/360; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.55E LSL, 1.5"x5.5"	10'-6"	9'-6"	8'-11"	8'-3"	11'-8"	10'-7"	9'-11"	9'-2"
1.55E LSL, 1.5"x7.25"	13'-11"	12'-7"	11'-10"	10'-11"	15'-6"	14'-0"	13'-2"	12'-2"
1.55E LSL, 1.5"x9.25"	17'-9"	16'-1"	15'-1"	14'-0"	19'-11"	18'-0"	16'-11"	13'-7"
1.55E LSL, 1.5"x9.5"	18'-3"	16'-6"	15'-6"	14'-5"	20'-5"	18'-6"	17'-0"	13'-7"
1.55E LSL, 1.5"x11.25"	21'-8"	19'-8"	18'-5"	17'-1"	24'-3"	20'-6"	17'-0"	13'-7"
1.55E LSL, 1.5"x11.875"	22'-11"	20'-9"	19'-6"	17'-0"	25'-7"	20'-6"	17'-0"	13'-7"
1.55E LSL, 1.5"x14"	27'-0"	24'-6"	21'-5"	17'-0"	27'-6"	20'-6"	17'-0"	13'-7"

Notes
Refer to design notes from Table 4.

TABLE 17: FLOOR SPAN CHART: 40/20 PSF; GLUED & NAILED SUBFLOOR; L/360 LIVE LOAD DEFLECTION - 1.55E LSL

40 psf Live Load; 20 psf Dead Load Live Load Deflection = L/360; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - GLUED & NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.55E LSL, 1.5"x5.5"	11'-7"	10'-8"	10'-2"	9'-7"	12'-11"	11'-11"	11'-4"	10'-1"
1.55E LSL, 1.5"x7.25"	15'-0"	13'-10"	13'-2"	12'-4"	16'-9"	15'-5"	14'-8"	13'-3"
1.55E LSL, 1.5"x9.25"	18'-11"	17'-4"	16'-6"	15'-6"	21'-2"	19'-5"	17'-0"	13'-7"
1.55E LSL, 1.5"x9.5"	19'-5"	17'-10"	16'-11"	15'-10"	21'-8"	19'-11"	17'-0"	13'-7"
1.55E LSL, 1.5"x11.25"	22'-9"	20'-11"	19'-10"	17'-0"	25'-6"	20'-6"	17'-0"	13'-7"
1.55E LSL, 1.5"x11.875"	24'-0"	22'-0"	20'-10"	17'-0"	26'-11"	20'-6"	17'-0"	13'-7"
1.55E LSL, 1.5"x14"	28'-2"	25'-9"	21'-5"	17'-0"	27'-6"	20'-6"	17'-0"	13'-7"

Notes
Refer to design notes from Table 4.

TABLE 18: FLOOR SPAN CHART: 40/20 PSF; NAILED SUBFLOOR; L/480 LIVE LOAD DEFLECTION - 1.55E LSL

40 psf Live Load; 20 psf Dead Load Live Load Deflection = L/480; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.55E LSL, 1.5"x5.5"	9'-6"	8'-7"	8'-1"	7'-5"	10'-7"	9'-7"	8'-11"	8'-3"
1.55E LSL, 1.5"x7.25"	12'-7"	11'-5"	10'-8"	9'-11"	14'-0"	12'-8"	11'-11"	11'-0"
1.55E LSL, 1.5"x9.25"	16'-1"	14'-7"	13'-8"	12'-8"	18'-0"	16'-3"	15'-3"	13'-7"
1.55E LSL, 1.5"x9.5"	16'-6"	15'-0"	14'-1"	13'-0"	18'-6"	16'-9"	15'-9"	13'-7"
1.55E LSL, 1.5"x11.25"	19'-8"	17'-9"	16'-8"	15'-5"	22'-0"	19'-11"	17'-0"	13'-7"
1.55E LSL, 1.5"x11.875"	20'-9"	18'-9"	17'-7"	16'-4"	23'-2"	20'-6"	17'-0"	13'-7"
1.55E LSL, 1.5"x14"	24'-6"	22'-2"	20'-10"	17'-0"	27'-5"	20'-6"	17'-0"	13'-7"

Notes
Refer to design notes from Table 4.

TABLE 19: FLOOR SPAN CHART: 40/20 PSF; GLUED & NAILED SUBFLOOR; L/480 LIVE LOAD DEFLECTION - 1.55E LSL

40 psf Live Load; 20 psf Dead Load Live Load Deflection = L/480; Total Load Deflection = L/240 23/32" APA Rated STURD-I-FLOOR Subfloor - GLUED & NAILED								
Joist Series	Single Span				Continuous Span			
	OC Spacing				OC Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.55E LSL, 1.5"x5.5"	10'-6"	9'-8"	9'-3"	8'-8"	11'-8"	10'-9"	10'-3"	9'-8"
1.55E LSL, 1.5"x7.25"	13'-7"	12'-6"	11'-11"	11'-2"	15'-2"	14'-0"	13'-3"	12'-6"
1.55E LSL, 1.5"x9.25"	17'-1"	15'-9"	14'-11"	14'-0"	19'-2"	17'-7"	16'-8"	13'-7"
1.55E LSL, 1.5"x9.5"	17'-7"	16'-2"	15'-4"	14'-4"	19'-8"	18'-0"	17'-0"	13'-7"
1.55E LSL, 1.5"x11.25"	20'-8"	18'-11"	17'-11"	16'-10"	23'-1"	20'-6"	17'-0"	13'-7"
1.55E LSL, 1.5"x11.875"	21'-9"	19'-11"	18'-11"	17'-0"	24'-4"	20'-6"	17'-0"	13'-7"
1.55E LSL, 1.5"x14"	25'-6"	23'-4"	21'-5"	17'-0"	27'-6"	20'-6"	17'-0"	13'-7"

Notes
Refer to design notes from Table 4.

SECTION 4: TOLKO T-TEC LSL - FLOOR LOAD TABLES

TABLE 20: FLOOR JOIST UNIFORM PLF LOAD TABLE (100%) - 1.35E TOLKO T-TEC LSL 1-1/2" WIDTH

Product Grade	Member Thickness (in)	Depth (in)	Floor Joist Clear Span (ft)																	
			8		10		12		14		16		18		20		22		24	
			Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load
1.35E T-TEC LSL	1-1/2	Limited to the bearing capacity of 425 psi for SPF Bearing Plate																		
		5.5	55	107																
		7.25	125	215	66	128														
		9.25		215	136	173	80	145	51	97										
		9.5		215	147	173	87	145	55	106										
		11.25		215		173	144	145	91	125	62	110	44	82						
		11.875		215		173		145	108	125	73	110	51	97						
		14		215		173		145		125		110	84	98	62	88	46	80		
		Limited to the bearing capacity of 690 psi for 1.35E T-TEC LSL Bearing Plate																		
		5.5	55	107																
		7.25	125	247	66	128														
		9.25	260	350	136	257	80	155	51	97										
		9.5	282	350	147	271	87	169	55	106										
		11.25		350	245	282	144	236	91	178	62	118	44	82						
		11.875		350		282	169	236	108	203	73	140	51	97						
		14		350		282		236	176	203	119	178	84	158	62	117	46	86		

Notes:

1) Joist span is the clear distance between supports and is valid for simple or continuous span applications.
2) The allowable loads represent the capacity in pounds per lineal foot (plf) of length
3) Tabulated values are valid for uniform loads only.
4) Minimum end bearing of 1-3/4", and minimum interior bearing of 3-1/2".
5) Deflection of L/480 for the live load and L/240 for the total load.
6) Tabulated values shall not be increased for a load duration CD > 1.0
7) Tabulated values assume full lateral support on the compression edge. Full support is considered to be a maximum unbraced length of 24". Tabulated values are valid for dry service conditions, where the moisture content in service does not exceed 16%, as in most covered structures.

How to use this table

1) Both total and live loads shall be checked. Where the live load is blank the total load governs the design.
2) Joist weight shall be included in the total load.
3) Select the appropriate Clear Span.
4) Scan vertically to find the proper thickness and depth with the capacities that exceed the actual live and total loads.
5) Verify the min. end bearing length of 1-3/4" and min. interior bearing length of 3-1/2".
6) For a live load deflection limit of **L/360**, the Live Load column values could be multiplied by 1.33. The resulting Live Load shall not exceed the Total Load.
7) For loading conditions not shown, use CSD® software or contact your Tolko representative.

TABLE 21: FLOOR JOIST UNIFORM PLF LOAD TABLE (100%) - 1.35E TOLKO T-TEC LSL 1-3/4" WIDTH

Product Grade	Member Thickness (in)	Depth (in)	Floor Joist Clear Span (ft)																	
			8		10		12		14		16		18		20		22		24	
			Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load
1.35E T-TEC LSL	1-3/4	Limited to the bearing capacity of 425 psi for SPF Bearing Plate																		
		5.5	64	125																
		7.25	146	251	76	149	45	86												
		9.25		251	159	202	93	169	59	114	40	75								
		9.5		251	172	202	101	169	64	123	43	81								
		11.25		251		202	168	169	107	146	72	128	51	96						
		11.875		251		202		169	125	146	85	128	60	113	44	81				
		14		251		202		169		146		128	98	114	72	103	54	93	42	76
		16		251		202		169		146		128		114		103	81	93	63	86
		Limited to the bearing capacity of 690 psi for 1.35E T-TEC LSL Bearing Plate																		
		5.5	64	125																
		7.25	146	288	76	149	45	86												
		9.25	304	408	159	300	93	181	59	114	40	75								
		9.5	329	408	172	316	101	197	64	123	43	81								
		11.25		408	286	329	168	275	107	207	72	138	51	96						
		11.875		408		329	197	275	125	237	85	163	60	113	44	81				
		14		408		329		275	206	237	139	208	98	185	72	136	54	101	42	76
		16		408		329		275		237	207	208	146	185	107	167	81	152	63	116

Notes

Refer to design notes from Table 20.

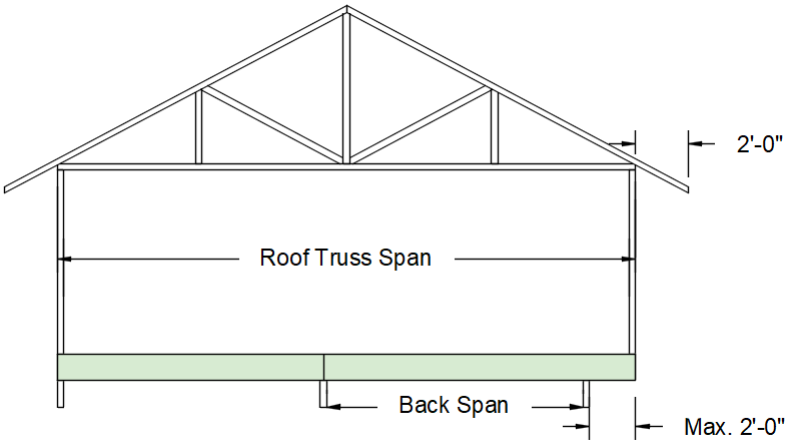
TABLE 22: FLOOR JOIST UNIFORM PLF LOAD TABLE (100%) - 1.55E TOLKO T-TEC LSL 1-1/2" WIDTH

Product Grade	Member Thickness (in)	Depth (in)	Floor Joist Clear Span (ft)																	
			8		10		12		14		16		18		20		22		24	
			Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load	Live Load	Total Load
1.55E T-TEC LSL	1-1/2	Limited to the bearing capacity of 425 psi for SPF Bearing Plate																		
		5.5	63	123																
		7.25	144	215	75	147	44	85												
		9.25		215	156	173	92	145	58	112										
		9.5		215	169	173	99	145	63	122	43	81								
		11.25		215		173		145	105	125	71	110	50	95						
		11.875		215		173		145	123	125	83	110	59	98	43	81				
		14		215		173		145		125		110	97	98	71	88	53	80	41	73
		Limited to the bearing capacity of 775 psi for 1.55E T-TEC LSL Bearing Plate																		
		5.5	63	123																
		7.25	144	284	75	147	44	85												
		9.25	299	393	156	308	92	179	58	112										
		9.5	324	393	169	316	99	194	63	122	43	81								
		11.25		393	281	316	165	265	105	205	71	136	50	95						
		11.875		393		316	194	265	123	228	83	161	59	112	43	81				
		14		393		316		265	202	228	137	200	97	178	71	135	53	100	41	76

Notes
Refer to design notes from Table 20.

SECTION 5: CANTILEVERS FOR FLOOR JOISTS

FIGURE 2: CANTILEVERS MAX. 2'-0"



LSL Joists may be cantilevered max 2'-0" when supporting the roof loads assuming the back span does not exceed the maximum spans shown in Table 23, and the back span is minimum 3 x cantilever length.

TABLE 23: MAXIMUM BACK SPANS (FT) FOR CANTILEVERED LSL JOISTS FROM TABLE 24

Depth (in)	O.C. Spacing			
	12"	16"	19.2"	24"
9.25	16	15	14	13
9.5	17	16	15	14
11.25	19	18	17	16
11.875	21	19	18	17
14	22	21	20	19
16[a]	24	23	22	21

(a) 16" depth is only for the 1-3/4" width

Detail 1j. Cantilever Reinforcement for Floor Joists Supporting Roof Loads (see Table 24)

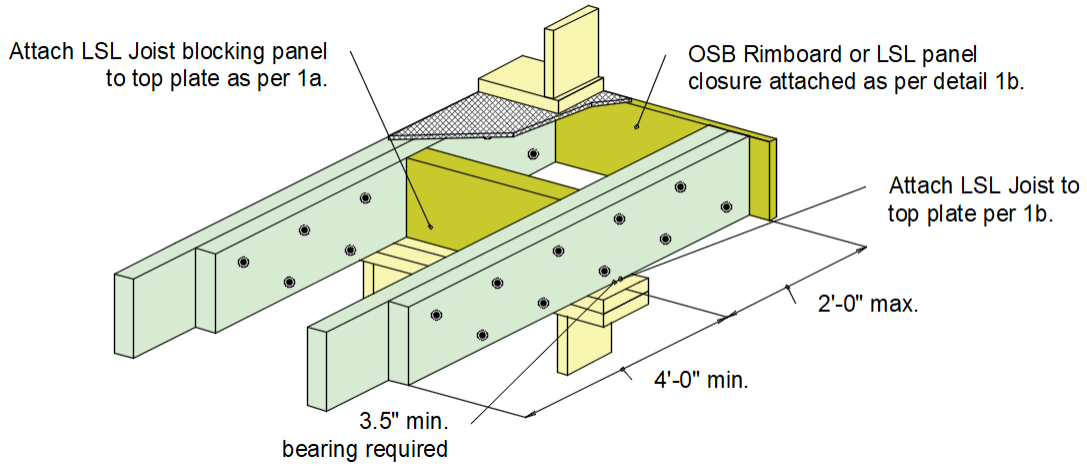


TABLE 24: CANTILEVER REINFORCEMENT SUPPORTING ROOF LOADS IN ADDITION TO THE FLOOR LOADS

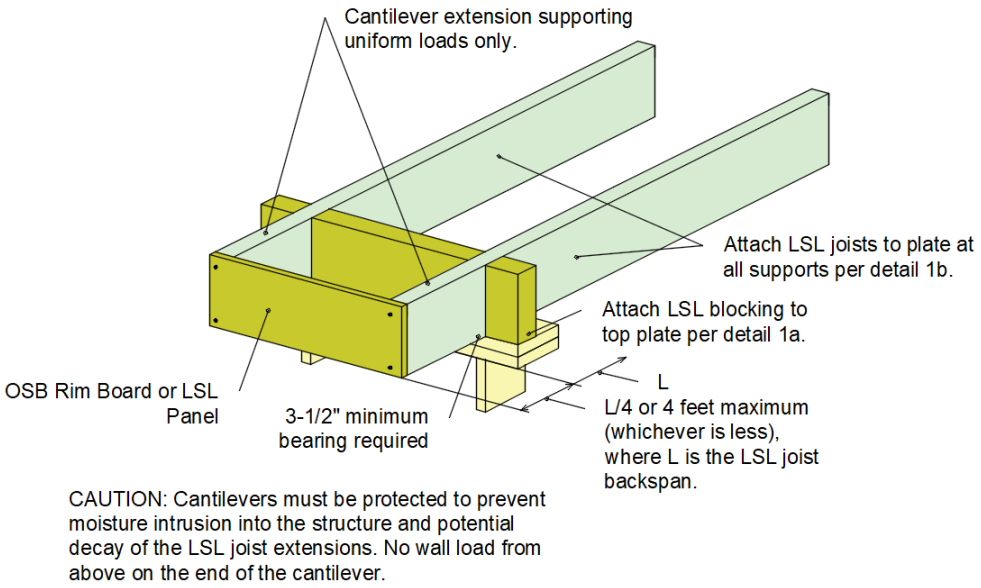
Joist	Joist Width (in)	Joist Depth (in)	Reinforcement Installation (where required)	Roof Span (ft)	Snow Load = 20 psf ; Roof Dead Load = 15 psf				Snow Load = 30 psf ; Roof Dead Load = 15 psf				Snow Load = 40 psf ; Roof Dead Load = 15 psf			
					Floor Joist On Center Spacing (in)											
					12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
T-TEC LSL	1.5	9.25, 9.5, 11.25, 11.875, 14	1.35E/1.55E T-TEC LSL Reinforcement; 1.5" width; matching the joist depth; fastened with 2 rows of 10d Box Nails (0.128" x 3") at 6" o.c. spacing; nail end distance = 2", nail edge distance = 1.5"; Reinforcement length = 48 ft. + cant. length	20	0	0	1	1	0	0	1	0	0	1	1	1
				22	0	0	1	1	0	1	1	1	0	1	1	1
				24	0	0	1	1	0	1	1	1	0	1	1	1
				26	0	0	1	1	0	1	1	1	0	1	1	1
				28	0	1	1	1	0	1	1	1	0	1	1	1
				30	0	1	1	1	0	1	1	1	0	1	1	x
				32	0	1	1	1	0	1	1	1	1	1	1	x
	1.75	9.25, 9.5, 11.25, 11.875, 14, 16	1.35E T-TEC LSL Reinforcement; 1.75" width; matching the joist depth; fastened with 2 rows of 16d Box Nails (0.135" x 3.5") at 6" o.c. spacing; nail end distance = 2", nail edge distance = 1.5"; Reinforcement length = 48 ft. + cant. length	20	0	0	0	1	0	0	1	1	0	0	1	0
				22	0	0	0	1	0	0	1	1	0	0	1	0
				24	0	0	0	1	0	0	1	1	0	1	1	1
				26	0	0	1	1	0	0	1	1	0	1	1	1
				28	0	0	1	1	0	0	1	1	0	1	1	1
				30	0	0	1	1	0	1	1	1	0	1	1	1
				32	0	0	1	1	0	1	1	1	0	1	1	1

Nomenclature:
0 = no reinforcement required
1 = 1 side reinforcement required
x = no solution

For lengths exceeding 24', contact Tolko Marketing and Sales to confirm availability.

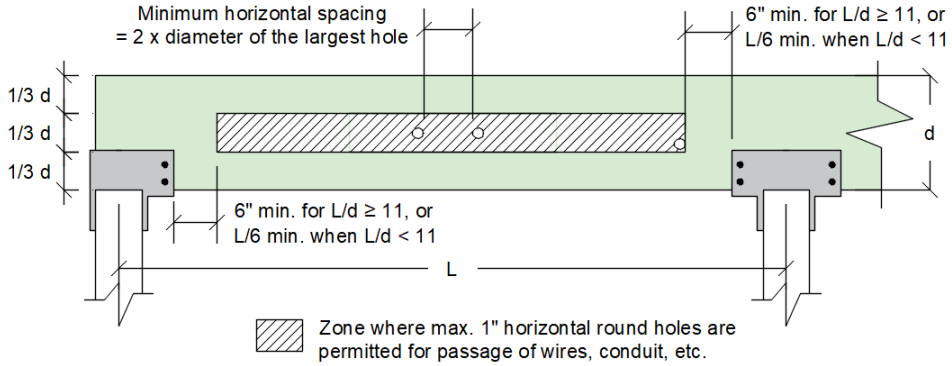
Notes:
1) Table values are valid for the max. back spans (adjacent to the cantilever) as specified below for single or continuous spans.
2) The floor live load shall not exceed 40 psf and the floor dead load shall not exceed 10 psf.
3) Maximum floor joist cantilever length = 2 ft.
4) The roof span is the out-to-out distance between the exterior bearing walls plus a max. 2 ft. roof overhang.
5) Table values assume a bearing length adjacent to the cantilever of at least 3-1/2" for SPF plate with compression perpendicular. to grain of 425 psi.
6) Exterior bearing wall weight = 100 plf
7) Reinforcement shall match the joist depth and width.
8) Roof pitch <= 12/12
9) For floor cantilever lengths <= 5" (from the inside edge of the bearing support), the reinforcement length could be equal to 2 ft.+ cantilever length.

Detail 1k. LSL Joist Cantilever Supporting Only Uniform Floor Loads



SECTION 6: ROUND HOLES FOR WIRING, PLUMBING AND DUCT WORK

Detail 1l. Maximum 1" Diameter Hole (single or multiple spans)



Notes:

1) A 1-inch diameter hole may be cut at the middle 1/3 of the beam depth anywhere along the span, except for the area that is within 6 inches of clear distance between the face of the support and the nearest edge of the hole for L/d ≥ 11, or L/6 when L/d < 11.
2) Holes allowed for single or continuous spans for uniform loads only.
3) No more than 3 holes per span are permitted.
4) Holes shall not be cut in cantilevers.
5) Beam depth shall be at least 7.25 inches.
6) The horizontal spacing must be a minimum of two diameters clear distance between adjacent holes based on the diameter of the larger hole.
7) When holes are required to be drilled outside the allowable zones, an engineering analysis shall be conducted and approved be a professional engineer.

Reference: APA - The Engineered Wood Association: Form No. EWS G535A

Detail 1m. Maximum 1-1/2" - 2" Diameter Holes (single or multiple spans)

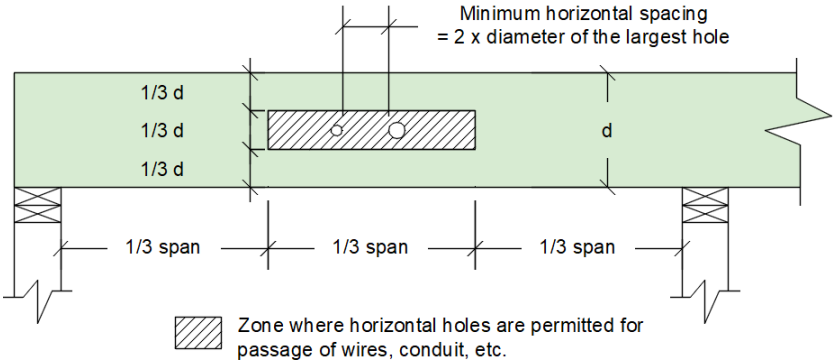


TABLE 25: MAXIMUM 1-1/2" - 2" DIAMETER HOLES (SINGLE OR MULTIPLE SPANS)

Joists Series	Max. o.c. Spacing (in)	Joist Depth (in)	Joist Width (in)	Max. Round Hole Diameter (in)
1.35E/1.55E LSL	24	7.25	1.5	1.5
			1.75	
		9.25	1.5	2
			1.75	
		9.5	1.5	
			1.75	
		11.25	1.5	
			1.75	
		11.875	1.5	
			1.75	
		14	1.5	
			1.75	
		16	1.75	

Notes:

1) Holes allowed for single or continuous spans for uniform loads only.
2) No more than 3 holes per span are permitted.
3) Holes shall not be cut in cantilevers.
4) The horizontal spacing must be a minimum of two diameters clear distance between adjacent holes based on the diameter of the larger hole.
5) When holes are required to be drilled outside the allowable zones, an engineering analysis shall be conducted and approved be a professional engineer.

Reference: APA - The Engineered Wood Association: Form No. EWS G535A

Detail 1n. Maximum 2-1/4" - 5-1/4" Diameter Holes (single spans only)

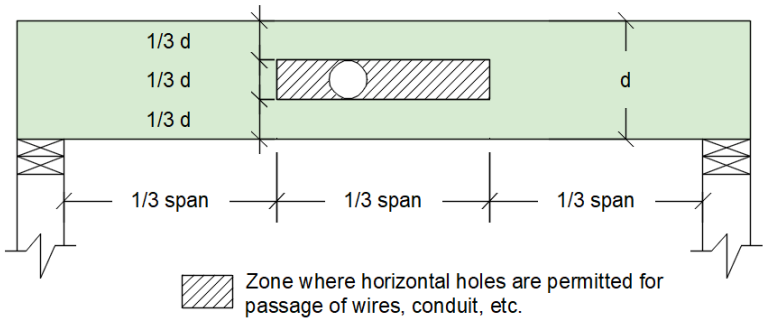


TABLE 26: MAXIMUM 2-1/4" - 5-1/4" DIAMETER HOLES (SINGLE SPANS ONLY)

Joists Series	Max. o.c. Spacing (in)	Joist Depth (in)	Joist Width (in)	Max. Joist Span (ft)								Max. Round Hole Diameter (in)
				Live Load (psf) 40	Dead Load (psf) 10	Live Load (psf) 40	Dead Load (psf) 20	Live Load (psf) 40	Dead Load (psf) 25	Live Load (psf) 100	Dead Load (psf) 25	
1.35/1.55E LSL	24	7.25	1.5	10		10		9		7		2.25
			1.75	11		11		10		7		2.25
		9.25	1.5	13		12		12		8		3
			1.75	14		13		13		9		3
		9.5	1.5	13		13		12		9		3
			1.75	14		14		13		9		3
		11.25	1.5	16		15		14		10		3.5
			1.75	17		16		16		11		3.5
		11.875	1.5	17		16		15		11		3.75
			1.75	18		17		16		12		3.75
		14	1.5	20		18		18		13		4.5
			1.75	21		20		19		14		4.5
		16	1.75	24		23		22		16		5.25

Notes:

1) Holes only allowed for uniform loads and single spans.
2) No more than 1 hole per span.
3) Hole shall not be cut in cantilevers.
4) When holes are required to be drilled outside the allowable zones, an engineering analysis shall be conducted and approved be a professional engineer.

Reference: APA - The Engineered Wood Association: Form No. EWS G535A

SECTION 7: HANGERS SUPPORTING FLOOR JOISTS

TABLE 27: SIMPSON® FACE MOUNT HANGERS - 1-1/2" JOIST WIDTH

	Hanger Type	Joist Width (in)	Joist Min. Depth (in)	Joist Max. Depth (in)	Hanger Model	Bearing Length (in)	Header Top Fastener Qty	Header Top Fastener Type	Header Face Fastener Qty	Header Face Fastener Type	Joist Fastener Qty	Joist Fastener Type	Uplift (lbs) (160)	Hanger Capacity (lbs) - Floor (100)	Hanger Capacity (lbs) - Snow (115)	Hanger Capacity (lbs) - Roof (125)
Supplier: Simpson Mount Type: Face Mount	HU	1.5	5.5	5.5	HU26	2.25	-	-	4	16d	2	10dx1-1/2	260	595	670	720
			7.25	7.25	HU28	2.25	-	-	6	16d	4	10dx1-1/2	520	895	1010	1080
			9.25	11.875	HU210	2.25	-	-	8	16d	4	10dx1-1/2	520	1190	1345	1440
			11.25	14	HU212	2.25	-	-	10	16d	6	10dx1-1/2	975	1490	1680	1800
	HUS	1.5	5.125	7.25	HUS26	3	-	-	14	16d	6	16d	1135	2735	3095	3235
			7.25	11.25	HUS28	3	-	-	22	16d	8	16d	1515	4095	4095	4095
			9.25	14	HUS210	3	-	-	30	16d	10	16d	2265	5450	5795	5830
	LU	1.5	5.5	7.25	LU26	1.5	-	-	6	16d	4	10dx1-1/2	465	835	950	1030
			7.25	11.25	LU28	1.5	-	-	8	16d	6	10dx1-1/2	730	1110	1180	1180
			9.25	11.875	LU210	1.5	-	-	10	16d	6	10dx1-1/2	730	1390	1580	1615
	LUS	1.5	5.5	7.25	LUS26	1.75	-	-	4	10d	4	10d	1000	865	990	1060
			7.25	11.25	LUS28	1.75	-	-	6	10d	4	10d	1000	1100	1260	1350
			9.25	11.875	LUS210	1.75	-	-	8	10d	4	10d	1000	1335	1530	1640
	MIU	1.5	9.25	14	MIU1.56/9	2.5	-	-	16	16d	2	10dx1-1/2	197	2305	2615	2820
			11.25	14	MIU1.56/11	2.5	-	-	20	16d	2	10dx1-1/2	197	2880	3135	3135
	U	1.5	5.5	7.25	U26	2	-	-	6	16d	4	10dx1-1/2	460	865	980	1055
			7.25	11.875	U210	2	-	-	10	16d	6	10dx1-1/2	850	1440	1565	1565
			11.25	14	U214	2	-	-	12	16d	8	10dx1-1/2	850	1730	1955	2110

Notes

1) Tabulated values are only valid for headers with a rectangular cross section. When I-joists are used as header, the hangers capacities are reduced and the Simpson/USP hangers technical guides for I-joists headers shall be followed.
2) The supported member end reaction capacity must be checked to ensure it is not less than the hanger capacity shown in the tables.
3) Uplift loads have been increased for wind loading with no further increase allowed. Reduce the uplift capacity where other loads govern by a factor 1/1.6 = 0.625.
4) Top mount hangers may cause unevenness. Possible remedies should be evaluated by a professional and include using a face-mount hanger.
5) Unless otherwise noted screws may not be used to replace nails unless approved and recommended by the Designer/Engineer of Record.
6) Do not overdrive nails. Overdriven nails reduce shear capacity.
7) Install all specified fasteners before loading the connection.
8) Joist shall bear completely on the connector seat, and the gap between the joist end and the header shall not exceed 1/8".
9) Nails: 16d = 0.162" dia. x 3 1/2" long, 10d = 0.148" dia. x 3" long, 10d x 1 1/2" = 0.148" dia. x 1 1/2" long.

TABLE 28: SIMPSON® FACE MOUNT HANGERS - 1-3/4" JOIST WIDTH

	Hanger Type	Joist Width (in)	Joist Min. Depth (in)	Joist Max. Depth (in)	Hanger Model	Bearing Length (in)	Header Top Fastener Qty	Header Top Fastener Type	Header Face Fastener Qty	Header Face Fastener Type	Joist Fastener Qty	Joist Fastener Type	Uplift (lbs) (160)	Hanger Capacity (lbs) - Floor (100)	Hanger Capacity (lbs) - Snow (115)	Hanger Capacity (lbs) - Roof (125)
Supplier: Simpson Mount Type: Face Mount	HU	1.75	5.5	7.25	HU1.81/5 (Max)	2.5	-	-	16	16d	6	10dx1-1/2	787	2380	2685	2890
			5.5	7.25	HU1.81/5 (Min)	2.5	-	-	12	16d	4	10dx1-1/2	524	1785	2015	2165
			7.25	11.25	HU7 (Max)	2.5	-	-	16	16d	8	10dx1-1/2	1300	2380	2685	2890
			7.25	11.25	HU7 (Min)	2.5	-	-	12	16d	4	10dx1-1/2	524	1785	2015	2165
			9.25	14	HU9 (Max)	2.5	-	-	24	16d	10	10dx1-1/2	1629	3570	4030	4335
			9.25	14	HU9 (Min)	2.5	-	-	18	16d	6	10dx1-1/2	787	2680	3020	3250
			11.25	16	HU11 (Max)	2.5	-	-	30	16d	10	10dx1-1/2	1629	4465	4705	4810
			11.25	16	HU11 (Min)	2.5	-	-	22	16d	6	10dx1-1/2	787	3275	3695	3970
			14	16	HU14 (Max)	2.5	-	-	36	16d	14	10dx1-1/2	1543	5055	5275	5420
			14	16	HU14 (Min)	2.5	-	-	28	16d	8	10dx1-1/2	1302	4165	4420	4505
	IUS	1.75	9.5	9.5	IUS1.81/9.5	2	-	-	8	10d	-	-	60	950	1080	1165
			11.875	11.875	IUS1.81/11.88	2	-	-	10	10d	-	-	60	1185	1345	1455
			14	14	IUS1.81/14 (Max)	2	-	-	14	10d	-	-	60	1660	1805	1805
			14	14	IUS1.81/14 (Min)	2	-	-	12	10d	-	-	60	1420	1615	1745
			16	16	IUS1.81/16 (Max)	2	-	-	16	10d	-	-	60	1805	1805	1805
			16	16	IUS1.81/16 (Min)	2	-	-	14	10d	-	-	60	1660	1805	1805
	MIU	1.75	9.25	9.5	MIU1.81/9	2.5	-	-	16	16d	2	10dx1-1/2	197	2305	2615	2820
			11.25	11.875	MIU1.81/11	2.5	-	-	20	16d	2	10dx1-1/2	197	2880	3135	3135
			14	14	MIU1.81/14	2.5	-	-	22	16d	2	10dx1-1/2	197	3170	3595	3875
			16	16	MIU1.81/16	2.5	-	-	24	16d	2	10dx1-1/2	197	3455	3920	4045

Notes

Refer to design notes from Table 27.

TABLE 29: SIMPSON® TOP MOUNT HANGERS - 1-1/2" JOIST WIDTH

	Hanger Type	Joist Width (in)	Joist Min. Depth (in)	Joist Max. Depth (in)	Hanger Model	Bearing Length (in)	Header Top Fastener Qty	Header Top Fastener Type	Header Face Fastener Qty	Header Face Fastener Type	Joist Fastener Qty	Joist Fastener Type	Uplift (lbs) (160)	Hanger Capacity (lbs) - Floor (100)	Hanger Capacity (lbs) - Snow (115)	Hanger Capacity (lbs) - Roof (125)
Supplier: Simpson Mount Type: Top Mount	ITS	1.5	11.875	11.875	ITS1.56/11.88	2	4	10d	2	10d	-	-	103	1150	1150	1150
	JB	1.5	5.5	5.5	JB26	1.5	4	10d	-	-	2	2 PRONG	-	780	780	780
			7.25	7.25	JB28	1.5	4	10d	-	-	2	2 PRONG	-	775	775	775
			9.25	9.25	JB210A	2	6	16d	-	-	2	10dx1-1/2	223	1190	1190	1190
			11.25	11.25	JB212A	2	6	16d	-	-	2	10dx1-1/2	223	1190	1190	1190
	LB	1.5	5.5	5.5	LB26	1.5	-	-	4	16d	2	10dx1-1/2	326	705	705	705
			7.25	7.25	LB28	1.5	-	-	4	16d	2	10dx1-1/2	326	710	710	710
			9.25	9.25	LB210AZ	2	-	-	6	16d	2	10dx1-1/2	288	1330	1330	1330
			11.25	11.25	LB212AZ	2	-	-	6	16d	2	10dx1-1/2	288	1330	1330	1330
	BA	1.5	9.25	9.25	BA1.56/9.25	3	6	10d	10	10d	2	10dx1-1/2	219	2345	2345	2345
			9.5	9.5	BA1.56/9.5	3	6	10d	10	10d	2	10dx1-1/2	219	2345	2345	2345
			11.25	11.25	BA1.56/11.25	3	6	10d	10	10d	2	10dx1-1/2	219	2425	2425	2425
			11.875	11.875	BA1.56/11.88	3	6	10d	10	10d	2	10dx1-1/2	219	2425	2425	2425
			14	14	BA1.56/14	3	6	10d	10	10d	2	10dx1-1/2	219	2425	2425	2425
	WP	1.5	5.5	5.5	WP	2.5	2	10dx1 1/2	-	-	2	10dx1-1/2	-	2000	2000	2000
			7.25	7.25	WP	2.5	2	10dx1 1/2	-	-	2	10dx1-1/2	-	2000	2000	2000
			9.25	9.25	WP	2.5	2	10dx1 1/2	-	-	2	10dx1-1/2	-	2000	2000	2000
			11.25	11.25	WP	2.5	2	10dx1 1/2	-	-	2	10dx1-1/2	-	2000	2000	2000

Notes

Refer to design notes from Table 27.

TABLE 30: SIMPSON® TOP MOUNT HANGERS - 1-3/4" JOIST WIDTH

	Hanger Type	Joist Width (in)	Joist Min. Depth (in)	Joist Max. Depth (in)	Hanger Model	Bearing Length (in)	Header Top Fastener Qty	Header Top Fastener Type	Header Face Fastener Qty	Header Face Fastener Type	Joist Fastener Qty	Joist Fastener Type	Uplift (lbs) (160)	Hanger Capacity (lbs) - Floor (100)	Hanger Capacity (lbs) - Snow (115)	Hanger Capacity (lbs) - Roof (125)
Supplier: Simpson Mount Type: Top Mount	ITS	1.75	9.5	9.5	ITS1.81/9.5	2	4	10d	2	10d	-	-	103	1150	1150	1150
			11.875	11.875	ITS1.81/11.88	2	4	10d	2	10d	-	-	103	1150	1150	1150
			14	14	ITS1.81/14	2	4	10d	2	10d	-	-	103	1150	1150	1150
			16	16	ITS1.81/16	2	4	10d	2	10d	-	-	103	1150	1150	1150
	BA	1.75	7.25	7.25	BA1.81/7.25	3	6	10d	4	10d	2	10dx1-1/2	219	2665	2665	2665
			9.25	9.25	BA1.8/9.25	3	6	10d	4	10d	2	10dx1-1/2	219	2665	2665	2665
			9.5	9.5	BA1.8/9.5	3	6	10d	4	10d	2	10dx1-1/2	219	2665	2665	2665
			11.25	11.25	BA1.8/11.25	3	6	10d	4	10d	2	10dx1-1/2	219	2665	2665	2665
			11.875	11.875	BA1.81/11.88	3	6	10d	4	10d	2	10dx1-1/2	219	2665	2665	2665
			14	14	BA1.81/14	3	6	10d	4	10d	2	10dx1-1/2	219	2665	2665	2665
			16	16	BA1.81/16	3	6	10d	4	10d	2	10dx1-1/2	219	2665	2665	2665
	MIT	1.75	9.5	9.5	MIT9.5	2.5	4	16d	4	16d	2	10dx1-1/2	185	1665	1665	1665
			11.875	11.875	MIT11.88	2.5	4	16d	4	16d	2	10dx1-1/2	185	1665	1665	1665
			14	14	MIT1.81/14	2.5	4	16d	4	16d	2	10dx1-1/2	185	1665	1665	1665
			16	16	MIT1.81/16	2.5	4	16d	4	16d	2	10dx1-1/2	185	1665	1665	1665
	HWP	1.75	9.25	9.25	HWP1.81/9.25	4	3	16d	6	16d	10	10dx1-1/2	1320	3955	3955	3955
			11.25	11.25	HWP1.81/11.25	4	3	16d	6	16d	10	10dx1-1/2	1320	3955	3955	3955
			11.875	11.875	HWP1.81/11.88	4	3	16d	6	16d	10	10dx1-1/2	1320	3955	3955	3955

Notes
Refer to design notes from Table 27.

TABLE 31: MITEK® FACE MOUNT HANGERS - 1-1/2" & 1-3/4" JOIST WIDTH

	Hanger Type	Joist Width (in)	Joist Min. Depth (in)	Joist Max. Depth (in)	Hanger Model	Bearing Length (in)	Header Top Fastener Qty	Header Top Fastener Type	Header Face Fastener Qty	Header Face Fastener Type	Joist Fastener Qty	Joist Fastener Type	Uplift (lbs) (160)	Hanger Capacity (lbs) - Floor (100)	Hanger Capacity (lbs) - Snow (115)	Hanger Capacity (lbs) - Roof (125)
Supplier: USP Mount Type: Face Mount	MUS	1.5	5.5	7.25	MUS26	2	-	-	6	10d	6	10d	760	1285	1475	1605
			7.25	9.25	MUS28	2	-	-	8	10d	8	10d	1085	1710	1970	2140
	IHF	1.5	9.25	14	IHF15925 (Max)	2.5	-	-	20	16d	2	10dx1-1/2	260	2905	2905	2905
			9.25	14	IHF15925 (Min)	2.5	-	-	8	10d	2	10dx1-1/2	260	1000	1120	1210
			11.25	14	IHF15112 (Max)	2.5	-	-	24	16d	2	10dx1-1/2	260	3065	3095	3115
			11.25	14	IHF15112 (Min)	2.5	-	-	10	10d	2	10dx1-1/2	260	1250	1405	1515
			14	14	IHF1514 (Max)	2.5	-	-	28	16d	2	10dx1-1/2	260	3065	3095	3115
			14	14	IHF1514 (Min)	2.5	-	-	12	10d	2	10dx1-1/2	260	1500	1685	1815
	HD	1.75	7.25	11.875	HD1770	2.5	-	-	12	16d	4	10dx1-1/2	610	1850	2085	2232
			9.25	14	HD17925	2.5	-	-	18	16d	6	10dx1-1/2	955	2770	3125	3355
			11.25	16	HD17112	2.5	-	-	22	16d	6	10dx1-1/2	955	3390	3625	3685
			14	16	HD1714	2.5	-	-	28	16d	8	10dx1-1/2	1220	3790	3920	4005
	HUS	1.75	9.25	14	HUS179	3	-	-	30	16d	10	16d	3410	5580	6060	6060
	IHF	1.75	9.25	14	IHF17925 (Max)	2.5	-	-	20	16d	2	10dx1-1/2	260	2905	2905	2905
			9.25	14	IHF17925 (Min)	2.5	-	-	8	10d	2	10dx1-1/2	260	1000	1120	1210
			11.25	16	IHF17112 (Max)	2.5	-	-	24	16d	2	10dx1-1/2	260	3530	3560	3585
			11.25	16	IHF17112 (Min)	2.5	-	-	10	10d	2	10dx1-1/2	260	1250	1405	1515
			14	16	IHF17140 (Max)	2.5	-	-	28	16d	2	10dx1-1/2	260	3530	3560	3585
			14	16	IHF17140 (Min)	2.5	-	-	12	10d	2	10dx1-1/2	260	1500	1685	1815
			16	16	IHF1716 (Max)	2.5	-	-	30	16d	2	10dx1-1/2	260	3530	3560	3585
			16	16	IHF1716 (Min)	2.5	-	-	14	10d	2	10dx1-1/2	260	1750	1965	2120

Notes
Refer to design notes from Table 27.

TABLE 32: MITEK® TOP MOUNT HANGERS - 1-1/2" & 1-3/4" JOIST WIDTH

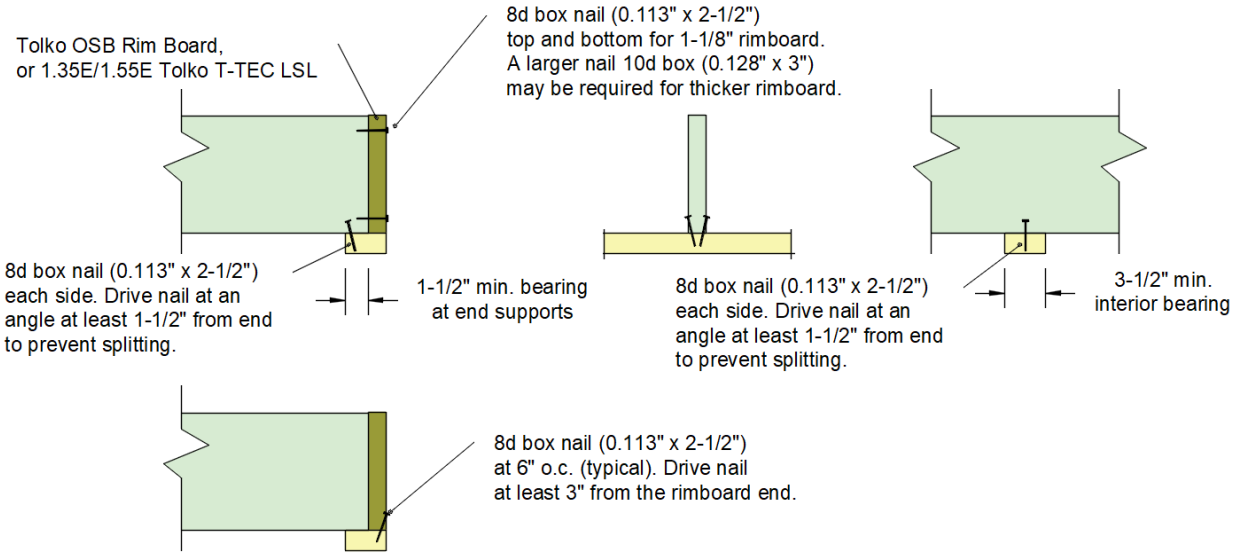
	Hanger Type	Joist Width (in)	Joist Min. Depth (in)	Joist Max. Depth (in)	Hanger Model	Bearing Length (in)	Header Top Fastener Qty	Header Top Fastener Type	Header Face Fastener Qty	Header Face Fastener Type	Joist Fastener Qty	Joist Fastener Type	Uplift (lbs) (160)	Hanger Capacity (lbs) - Floor (100)	Hanger Capacity (lbs) - Snow (115)	Hanger Capacity (lbs) - Roof (125)
Supplier: USP Mount Type: Top Mount	BPH	1.5	9.25	9.25	BPH15925	2.375	4	16d	6	16d	4	10dx1-1/2	731	2095	2095	2095
			9.5	9.5	BPH1595	2.375	4	16d	6	16d	4	10dx1-1/2	731	2095	2095	2095
			11.25	11.25	BPH15112	2.375	4	16d	6	16d	4	10dx1-1/2	731	2095	2095	2095
			11.875	11.875	BPH15118	2.375	4	16d	6	16d	4	10dx1-1/2	731	2095	2095	2095
			14	14	BPH1514	2.375	4	16d	6	16d	4	10dx1-1/2	731	2095	2095	2095
	BPH	1.75	9.25	9.25	BPH17925	2.375	4	16d	6	16d	4	10dx1-1/2	731	2300	2300	2300
			9.5	9.5	BPH1795	2.375	4	16d	6	16d	4	10dx1-1/2	731	2300	2300	2300
			11.25	11.25	BPH17112	2.375	4	16d	6	16d	4	10dx1-1/2	731	2300	2300	2300
			11.875	11.875	BPH17118	2.375	4	16d	6	16d	4	10dx1-1/2	731	2300	2300	2300
			14	14	BPH1714	2.375	4	16d	6	16d	4	10dx1-1/2	731	2300	2300	2300
			16	16	BPH1716	2.375	4	16d	6	16d	4	10dx1-1/2	731	2300	2300	2300
	PHM	1.75	9.25	9.25	PHM17925	2.5	-	-	2	16d	2	10dx1-1/2	-	2140	2140	2140
			9.5	9.5	PHM1795	2.5	-	-	2	16d	2	10dx1-1/2	-	2140	2140	2140
			11.25	11.25	PHM17112	2.5	-	-	2	16d	2	10dx1-1/2	-	2140	2140	2140
			11.875	11.875	PHM17118	2.5	-	-	2	16d	2	10dx1-1/2	-	2140	2140	2140
			14	14	PHM1714	2.5	-	-	2	16d	2	10dx1-1/2	-	2140	2140	2140
			16	16	PHM1716	2.5	-	-	2	16d	2	10dx1-1/2	-	2140	2140	2140
	PHXU	1.75	7.25	7.25	PHXU17725	3.25	4	16d	4	16d	6	10dx1-1/2	800	3245	3245	3245
			9.25	9.25	PHXU17925	3.25	4	16d	4	16d	6	10dx1-1/2	800	3245	3245	3245
			9.5	9.5	PHXU1795	3.25	4	16d	4	16d	6	10dx1-1/2	800	3245	3245	3245
			11.25	11.25	PHXU17112	3.25	4	16d	4	16d	6	10dx1-1/2	800	3245	3245	3245
			11.875	11.875	PHXU17118	3.25	4	16d	4	16d	6	10dx1-1/2	800	3245	3245	3245
			14	14	PHXU1714	3.25	4	16d	4	16d	6	10dx1-1/2	800	3245	3245	3245

Notes

Refer to design notes from Table 27.

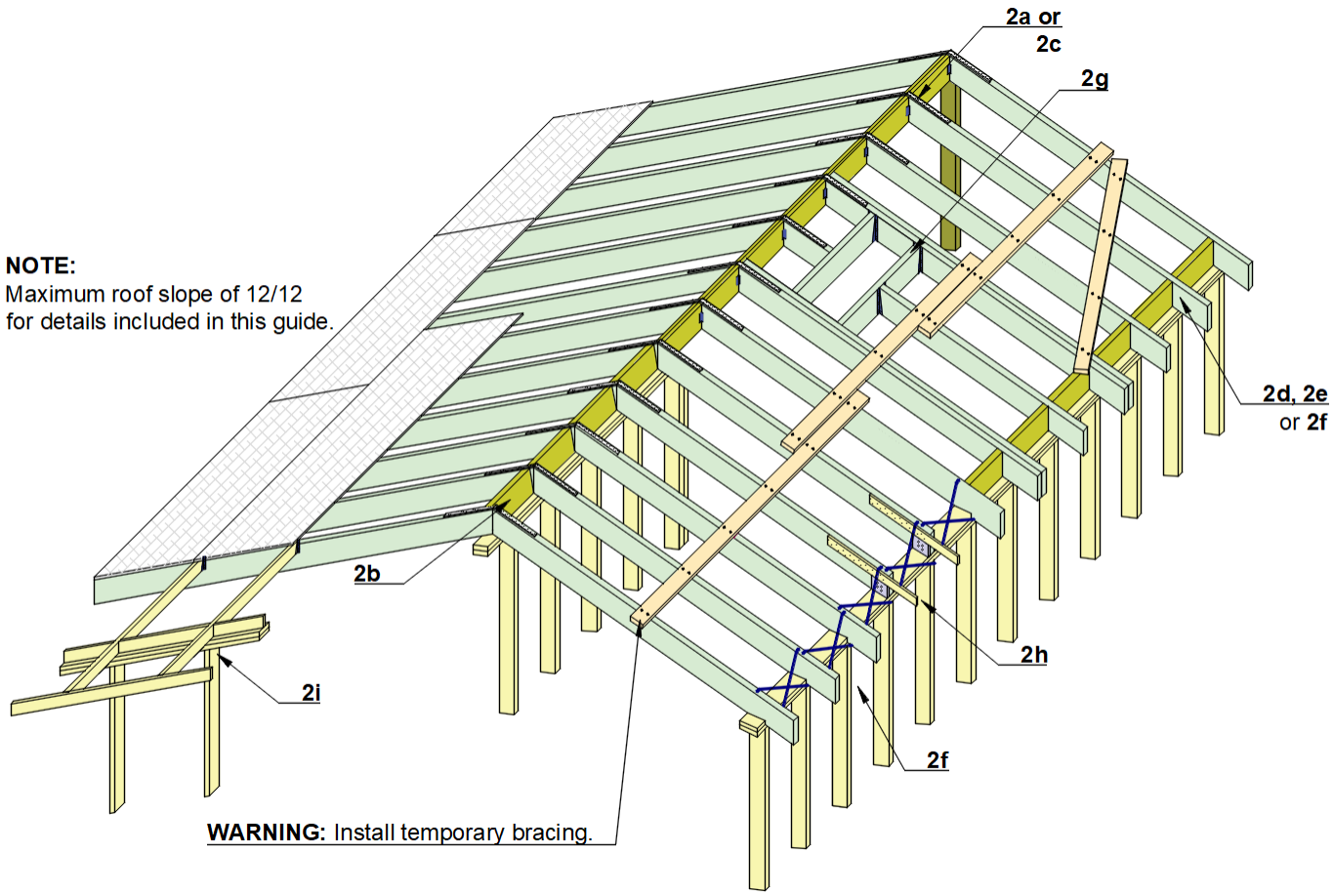
SECTION 8: FLOOR JOIST NAILING REQUIREMENTS AT BEARINGS

FIGURE 3: FLOOR JOIST NAILING REQUIREMENTS AT BEARINGS



SECTION 9: TYPICAL ROOF FRAMING AND CONSTRUCTION DETAILS

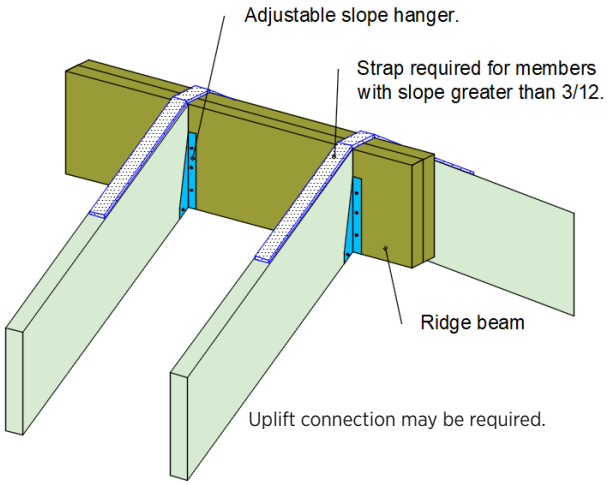
FIGURE 4: TYPICAL ROOF FRAMING AND CONSTRUCTION DETAILS FOR TOLKO T-TEC LSL ROOF FRAMING



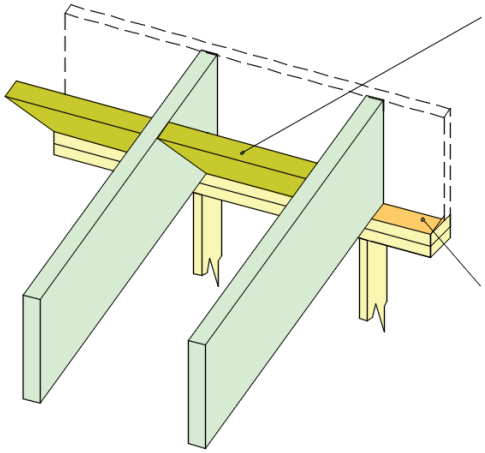
Notes

1) Failure to install temporary bracing may result in sideway buckling or roll-over under light construction loads.
2) Do not allow workers on the Tolko T-TEC LSL Roof Joists (rafters) until all hangers, Rim Joists, Rim Boards, Blocking Panels, and temporary strut lines are installed as specified below.
3) Build a braced end wall at the end of the bay, or permanently install the first 8 ft. of Tolko T-TEC LSL® rafters and the first course of sheathing. As an alternate, temporary sheathing may be nailed to the first 4 ft. of Tolko T-TEC LSL® rafters at the end of the bay.
4) Install temporary strut lines at no more than 8 ft. on center as additional Tolko T-TEC LSL® rafters are set. Nail the strut lines to the sheathing area, or brace end wall, to each Tolko T-TEC LSL® joist with two 8d common nails (0.131" x 2.5").
5) Before laying out roof system components, verify that rafters' widths match hanger widths.
6) When blocking is installed along the rafter span, never deliberately walk on the blocking between the rafters.
7) The end of the cantilevers must be temporarily secured by bracing on both the top and bottom edges.
8) Remove the temporary bracing only as required to install the permanent sheathing.
9) Except for cutting to length, never cut, drill, or notch the rafters.
10) Rafters must be anchored securely to supports before roof sheathing is attached and the supports for multiple-span members must be level.
11) Minimum bearing lengths: 1.5" for end bearings and 3.5" for intermediate bearings.
12) When using hangers, seat rafters firmly in hanger bottoms to minimize settlement.
13) Never install rafters where they will be permanently exposed to weather or where they will remain in direct contact with concrete or masonry.
14) Restrain ends of roof joists to prevent rollover. Use rim board, rim joists or blocking panels.
15) For rafters installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks to transfer gravity loads from the roof system to the wall or structure below.
16) Due to shrinkage, common framing timber set on edge cannot be used as blocking or rim boards. Tolko T-TEC LSL blocking panels or other engineered wood products – such as rim board – must be cut to fit between the rafters, and a rafter-compatible depth selected.
17) Provide permanent lateral support for the bottom edge of all rafters at interior supports of multiple-span members. See Table 2 for recommended sheathing attachment with nails.
18) Do not stack construction materials (sheathing, drywall, etc.) in the middle of the rafters.

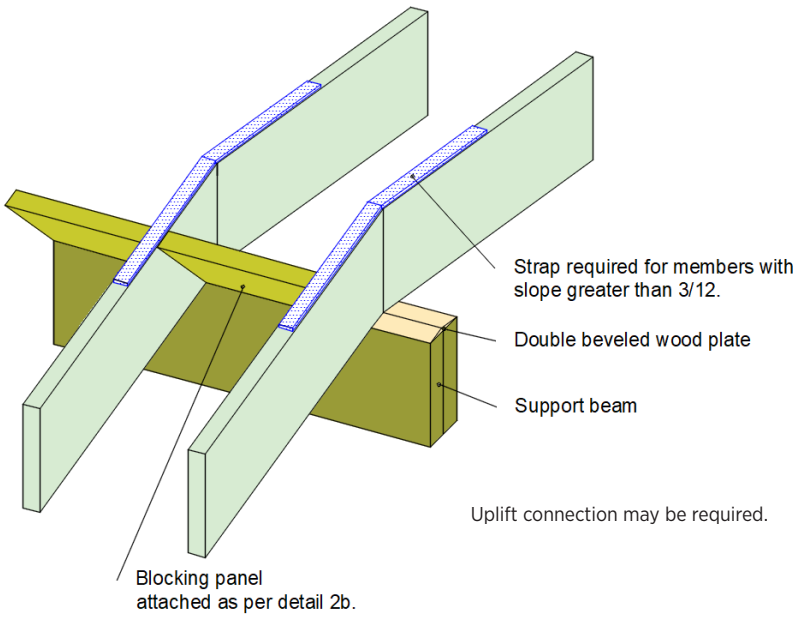
Detail 2a. Ridge Rafter Connection (12/12 maximum roof slope)



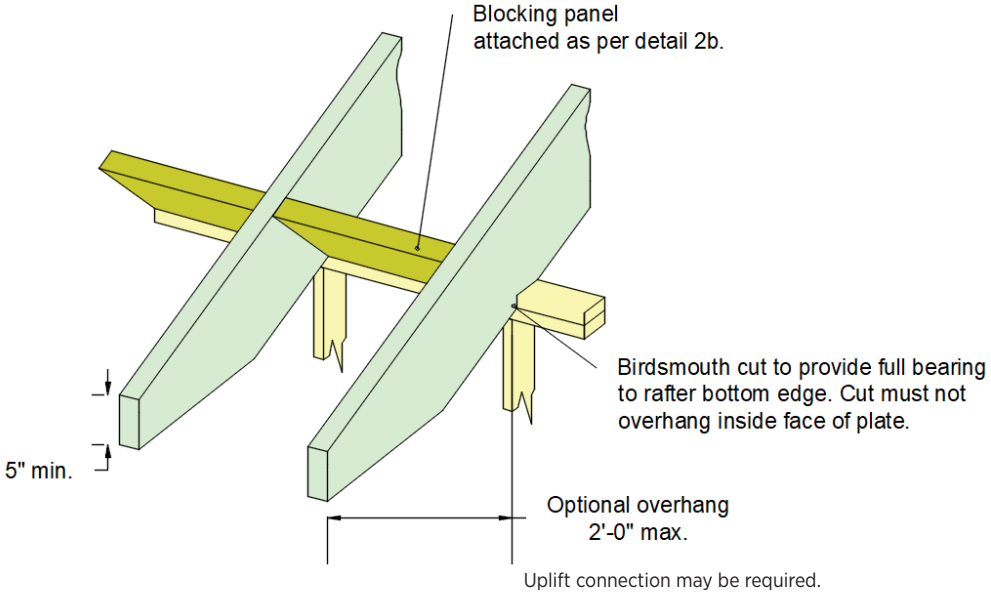
Detail 2b. Rafter Upper End Bearing on Wall



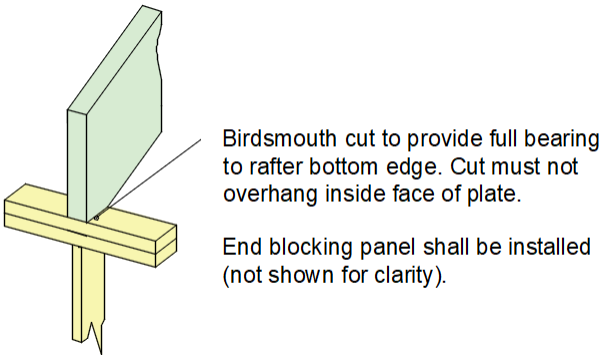
Detail 2c. Rafter Upper End Bearing on Ridge Beam



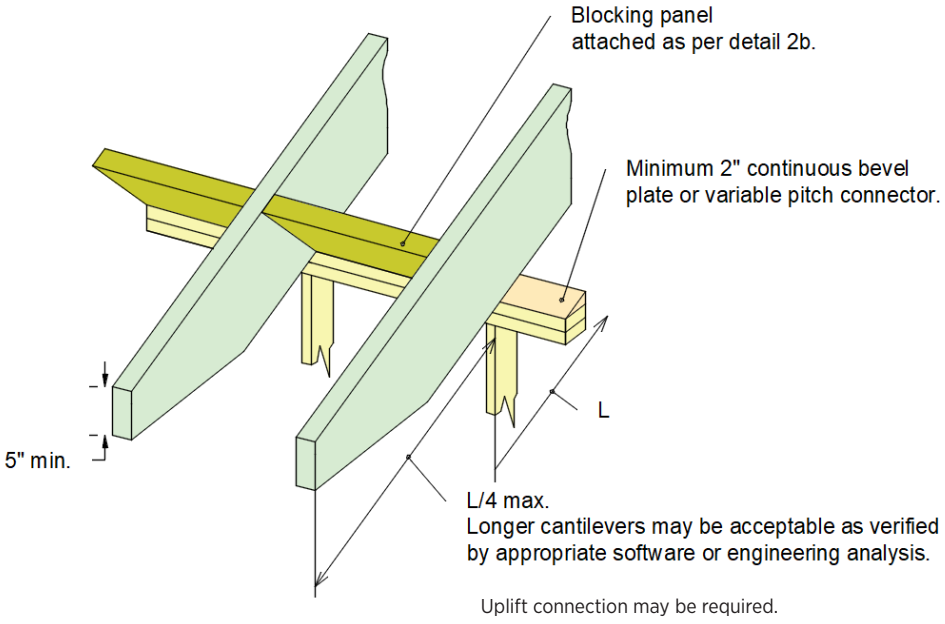
Detail 2d. Rafter Lower End - Birdsmouth Cut - Solid Blocking



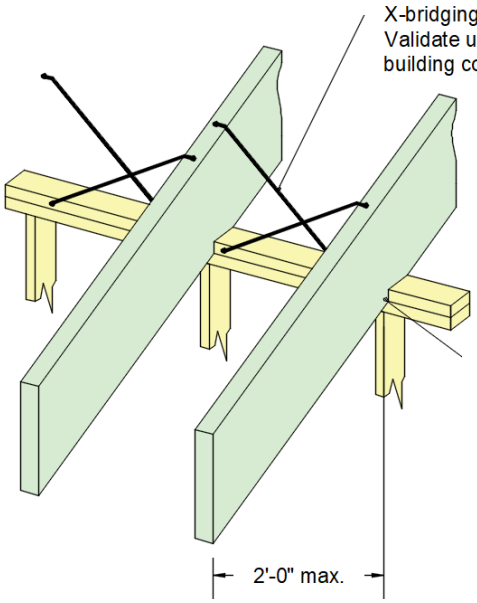
Detail 2d-1. Rafter Lower End - Birdsmouth Cut No Overhang



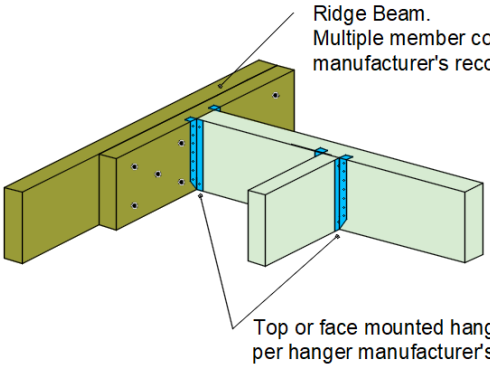
Detail 2e. Rafter Supported by Beveled Plate



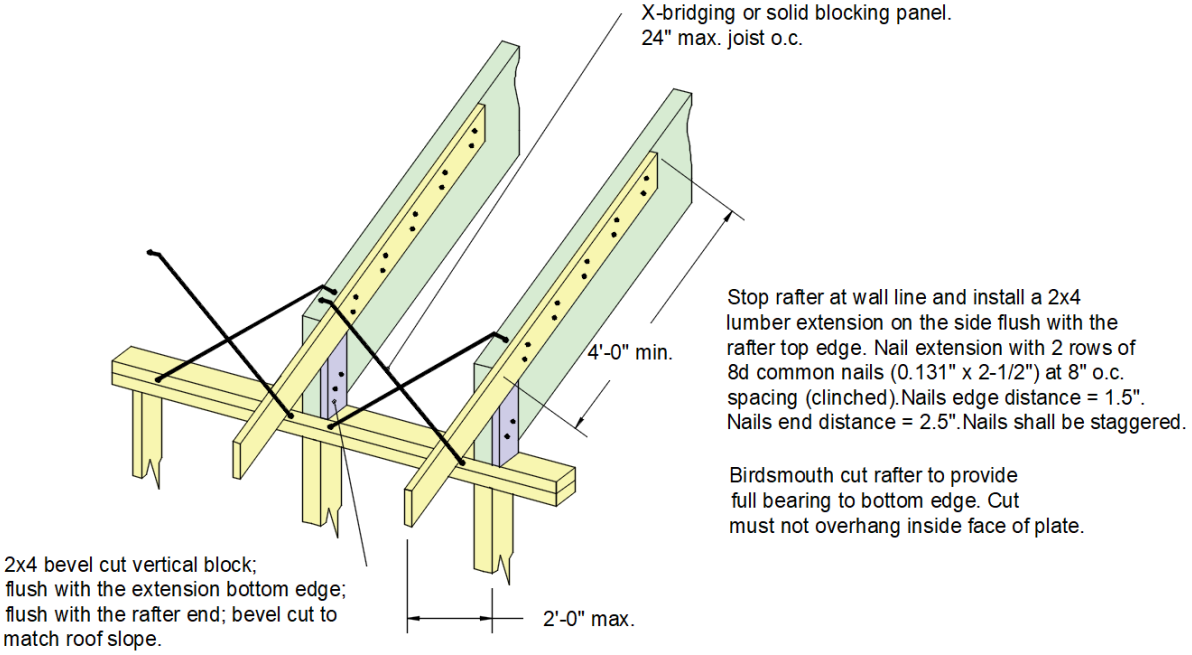
Detail 2f. Rafter Lower End - Birdsmouth Cut - X-Bridging or Solid Blocking



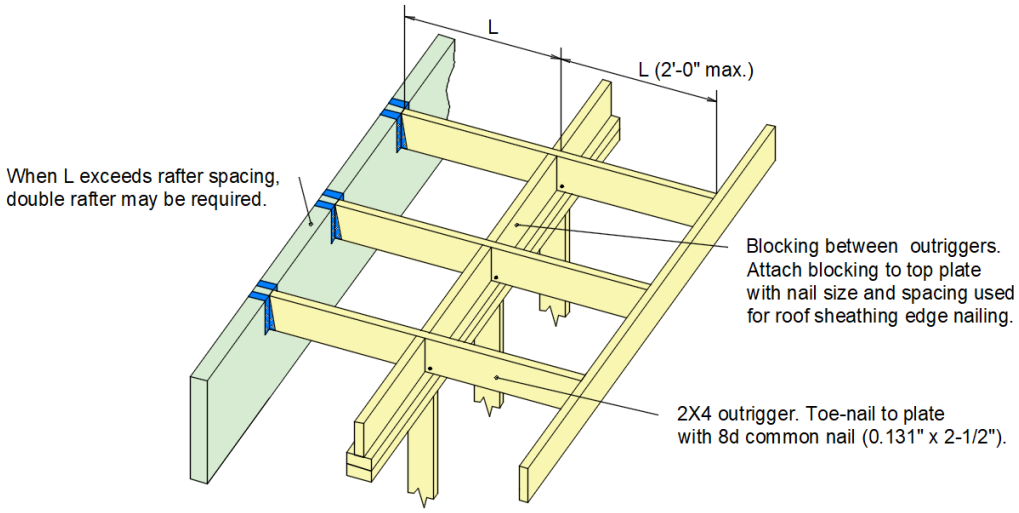
Detail 2g. Roof Openings - Top/Face Mount Hangers



Detail 2h. Optional Overhang Extension

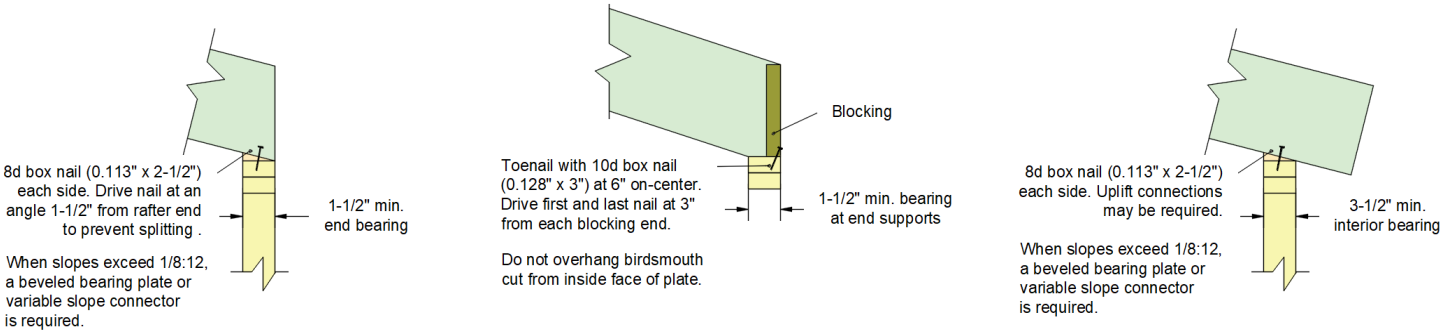


Detail 2i. Overhang Parallel to Rafter



SECTION 10: RAFTER NAILING REQUIREMENTS AT BEARING

FIGURE 5: RAFTER NAILING REQUIREMENTS AT BEARING



SECTION 11: HANGERS SUPPORTING ROOF JOISTS

TABLE 33: HANGERS SUPPORTING ROOF JOISTS

Supplier	Mount Type	Hanger Type	Joist Width (in)	Joist Min. Depth (in)	Joist Max. Depth (in)	Hanger Model	Bearing Length (in)	Header Face Fastener Qty	Header Face Fastener Type	Joist Fastener Qty	Joist Fastener Type	Uplift (lbs) (160)	Hanger Resistance (lbs) (100)	Hanger Resistance (lbs) - Snow (115)	Hanger Resistance (lbs) - Roof (125)
Simpson	Slope Skew	LSSJ (0˚ - 20˚ Skew)	1.5	5.25	7.25	LSSJ26LZ	2.5	4	10d	4	10d	255	365	365	365
				5.25	7.25	LSSJ26RZ	2.5	4	10dx1-1/2	4	10dx1-1/2	255	365	365	365
				7.25	9.5	LSSJ28LZ	2.5	5	10d	5	10d	385	590	605	605
				7.25	9.5	LSSJ28RZ	2.5	5	10dx1-1/2	5	10dx1-1/2	385	590	605	605
				9.25	11.875	LSSJ210LZ	2.5	6	10d	6	10d	685	710	810	815
				9.25	11.875	LSSJ210RZ	2.5	6	10dx1-1/2	6	10dx1-1/2	685	710	810	815
		LSSJ (21˚ - 45˚ Skew)	1.5	5.25	7.25	LSSJ26LZ	2.5	4	10d	4	10d	645	750	750	750
				5.25	7.25	LSSJ26RZ	2.5	4	10dx1-1/2	4	10dx1-1/2	255	420	420	420
				7.25	9.5	LSSJ28LZ	2.5	5	10d	5	10d	1000	1080	1165	1165
				7.25	9.5	LSSJ28RZ	2.5	5	10dx1-1/2	5	10dx1-1/2	385	590	675	725
				9.25	11.875	LSSJ210LZ	2.5	6	10d	6	10d	1220	1295	1445	1445
				9.25	11.875	LSSJ210RZ	2.5	6	10dx1-1/2	6	10dx1-1/2	685	710	810	815
	Skew 45	SUR	1.5	5.5	7.25	SUR/L26	2	6	16d	6	10dx1-1/2	580	865	980	1055
				9.25	11.875	SUR/L210	2	10	16d	10	10dx1-1/2	1075	1440	1630	1760
				11.25	14	SUR/L214	2	12	16d	12	10dx1-1/2	1625	1730	1955	2110
			1.75	9.25	9.5	SUR/L1.81/9	3	12	16d	2	10dx1-1/2	150	1730	1945	1945
				11.25	11.875	SUR/L1.81/11	3	16	16d	2	10dx1-1/2	150	2305	2465	2465
				13.5	14	SUR/L1.81/14	3	20	16d	2	10dx1-1/2	150	2470	2470	2470
Mitek USP	Slope Skew	LSSH	1.5	5.5	7.25	LSSH15-TZ	3	6	10d HDG	7	10dx1-1/2 HDG	400	485	485	485
				9.25	14	LSSH210-TZ	3	10	10d	7	10dx1-1/2	320	1065	1090	1090
			1.75	9.25	14	LSSH179-TZ	3	10	10d	7	10dx1-1/2	690	1065	1090	1090
	Skew 45	SKH	1.5	5.5	7.25	SKH26L/R	1.875	6	16d	6	10dx1-1/2	980	700	700	700
				7.25	11.25	SKH28L/R	1.875	10	16d	8	10dx1-1/2	1070	1160	1160	1160
				9.25	13.25	SKH210L/R	1.875	14	16d	10	10dx1-1/2	1220	1425	1425	1425
		SKHH	1.5	5.5	7.25	SKHH26L/R	3.25	18	16d	12	10dx1-1/2	645	1450	1450	1450
				7.25	11.25	SKHH28L/R	3.25	26	16d	16	10dx1-1/2	940	2055	2055	2055
				9.25	14	SKHH210L/R	4.25	34	16d	20	10dx1-1/2	1160	2150	2150	2150
		SKH	1.75	9.25	14	SKH1720L/R	1.875	14	10d	10	10dx1-1/2	1220	1400	1400	1400
				11.25	16	SKH1724L/R	1.875	16	10d	10	10dx1-1/2	1220	1635	1880	2035

Notes:

1) Tabulated values are only valid for headers with a rectangular cross section. When I-joists are used as header, the hangers capacities are reduced and the Simpson/USP hangers technical guides for I-joists headers shall be followed.
2) The supported member end reaction capacity must be checked to ensure it is not less than the hanger capacity shown in the tables.
3) Uplift loads have been increased for wind loading with no further increase allowed. Reduce the uplift capacity where other loads govern by a factor 1/1.6 = 0.625.
4) Unless otherwise noted screws may not be used to replace nails unless approved and recommended by the Designer/Engineer of Record.
5) Do not overdrive nails. Overdriven nails reduce shear capacity.
6) Install all specified fasteners before loading the connection.
7) Joist shall bear completely on the connector seat, and the gap between the joist end and the header shall not exceed 1/8".
8) Nails: 16d = 0.162" dia. x 3 1.2" long, 10d = 0.148" dia. x 3" long, 10d x 1 1.2" = 0.148" dia. x 1 1.2" long.

SECTION 12: 1.35E TOLKO T-TEC LSL ROOF SPAN CHARTS

TABLE 34: ROOF SPAN CHART: 20 PSF NON-SNOW LOAD, 15 PSF DEAD LOAD - 1.35E LSL

20 (psf) Non-Snow Load; 15 (psf) Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.35E LSL, 1.5"x5.5"	12'-4"	11'-2"	10'-5"	9'-8"	10'-11"	9'-10"	9'-3"	8'-7"
1.35E LSL, 1.5"x7.25"	16'-5"	14'-10"	13'-11"	12'-10"	14'-7"	13'-2"	12'-4"	11'-5"
1.35E LSL, 1.5"x9.25"	21'-0"	19'-0"	17'-10"	16'-6"	18'-8"	16'-11"	15'-11"	14'-8"
1.35E LSL, 1.5"x9.5"	21'-7"	19'-7"	18'-4"	17'-0"	19'-2"	17'-5"	16'-4"	15'-1"
1.35E LSL, 1.5"x11.25"	25'-8"	23'-3"	21'-10"	20'-3"	22'-10"	20'-8"	19'-5"	18'-0"
1.35E LSL, 1.5"x11.875"	27'-2"	24'-7"	23'-1"	21'-4"	24'-2"	21'-10"	20'-6"	19'-0"
1.35E LSL, 1.5"x14"	32'-1"	29'-1"	27'-4"	22'-1"	28'-6"	25'-10"	24'-2"	19'-4"
1.35E LSL, 1.75"x5.5"	13'-0"	11'-9"	11'-0"	10'-2"	11'-6"	10'-5"	9'-9"	9'-0"
1.35E LSL, 1.75"x7.25"	17'-3"	15'-8"	14'-8"	13'-7"	15'-4"	13'-11"	13'-0"	12'-1"
1.35E LSL, 1.75"x9.25"	22'-2"	20'-1"	18'-10"	17'-5"	19'-8"	17'-10"	16'-9"	15'-6"
1.35E LSL, 1.75"x9.5"	22'-9"	20'-8"	19'-5"	17'-11"	20'-3"	18'-4"	17'-3"	15'-11"
1.35E LSL, 1.75"x11.25"	27'-1"	24'-6"	23'-0"	21'-4"	24'-1"	21'-10"	20'-6"	19'-0"
1.35E LSL, 1.75"x11.875"	28'-7"	25'-11"	24'-4"	22'-6"	25'-5"	23'-1"	21'-8"	20'-1"
1.35E LSL, 1.75"x14"	33'-10"	30'-8"	28'-9"	26'-1"	30'-1"	27'-3"	25'-7"	22'-11"
1.35E LSL, 1.75"x16"	38'-8"	35'-1"	32'-9"	26'-1"	34'-5"	31'-3"	28'-9"	22'-11"

Notes

1) Tabulated spans have been designed to meet the IBC, IRC and the NDS requirements.
2) Tabulated spans are the horizontal clear single or continuous spans. Continuous spans are based on the longest span. The shortest span shall not be less than 40% the longest span.
3) Min. end bearing length is 1 3/4" and 3 1/2" for the interior bearing length.
4) Tabulated spans are only valid for uniform loads as indicated for each table and the 300 lbs moving live load.
5) These spans have not been evaluated for wind.
6) Minimum roof slope of 1/4: 12.
7) The spans are limited to the bearing capacity for an SPF wall plate ($F_{c\perp}$ = 425 psi)
8) Continuous lateral support must be provided on the compression top and bottom edges.
9) Lateral support must be provided at all bearing locations to prevent lateral displacement and rotation.
10) Rafters must be properly supported at the upper end. A ridge board is not an adequate bearing support.
11) Tabulated spans valid for structural occupancy/risk category = II (snow importance factor = 1.0).

For lengths exceeding 24', contact Tolko Marketing and Sales to confirm availability.

TABLE 35: ROOF SPAN CHART: 20 PSF NON-SNOW LOAD, 20 PSF DEAD LOAD - 1.35E LSL

20 (psf) Non-Snow Load; 20 (psf) Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
1.35E LSL, 1.5"x5.5"	11'-9"	10'-7"	9'-11"	9'-2"	10'-4"	9'-4"	8'-9"	8'-1"
1.35E LSL, 1.5"x7.25"	15'-7"	14'-1"	13'-3"	12'-3"	13'-9"	12'-5"	11'-8"	10'-10"
1.35E LSL, 1.5"x9.25"	20'-0"	18'-2"	17'-0"	15'-9"	17'-8"	16'-0"	15'-0"	13'-11"
1.35E LSL, 1.5"x9.5"	20'-7"	18'-8"	17'-6"	16'-2"	18'-2"	16'-6"	15'-5"	14'-4"
1.35E LSL, 1.5"x11.25"	24'-6"	22'-2"	20'-10"	19'-1"	21'-7"	19'-7"	18'-5"	16'-5"
1.35E LSL, 1.5"x11.875"	25'-10"	23'-5"	22'-0"	19'-1"	22'-10"	20'-8"	19'-5"	16'-5"
1.35E LSL, 1.5"x14"	30'-7"	27'-8"	24'-0"	19'-1"	27'-0"	24'-6"	20'-7"	16'-5"
1.35E LSL, 1.75"x5.5"	12'-4"	11'-2"	10'-6"	9'-8"	10'-11"	9'-10"	9'-3"	8'-6"
1.35E LSL, 1.75"x7.25"	16'-5"	14'-11"	14'-0"	12'-11"	14'-6"	13'-2"	12'-4"	11'-5"
1.35E LSL, 1.75"x9.25"	21'-1"	19'-1"	17'-11"	16'-7"	18'-8"	16'-11"	15'-10"	14'-8"
1.35E LSL, 1.75"x9.5"	21'-8"	19'-8"	18'-5"	17'-1"	19'-2"	17'-4"	16'-4"	15'-1"
1.35E LSL, 1.75"x11.25"	25'-9"	23'-4"	21'-11"	20'-4"	22'-10"	20'-8"	19'-5"	17'-11"
1.35E LSL, 1.75"x11.875"	27'-3"	24'-8"	23'-2"	21'-6"	24'-1"	21'-10"	20'-6"	19'-0"
1.35E LSL, 1.75"x14"	32'-3"	29'-2"	27'-5"	22'-7"	28'-6"	25'-10"	24'-3"	19'-6"
1.35E LSL, 1.75"x16"	36'-11"	33'-5"	28'-4"	22'-7"	32'-8"	29'-5"	24'-6"	19'-6"

Notes:

Refer to design notes from Table 34.

TABLE 36: ROOF SPAN CHART: 25 PSF SNOW LOAD, 15 PSF DEAD LOAD - 1.35E LSL

25 (psf) Snow Load; 15 (psf) Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
1.35E LSL, 1.5”x5.5”	11’-9”	10’-8”	10’-0”	9’-3”	10’-6”	9’-6”	8’-11”	8’-2”
1.35E LSL, 1.5”x7.25”	15’-8”	14’-2”	13’-4”	12’-4”	14’-0”	12’-8”	11’-10”	11’-0”
1.35E LSL, 1.5”x9.25”	20’-1”	18’-3”	17’-1”	15’-10”	18’-0”	16’-3”	15’-3”	14’-1”
1.35E LSL, 1.5”x9.5”	20’-8”	18’-9”	17’-7”	16’-3”	18’-6”	16’-9”	15’-8”	14’-6”
1.35E LSL, 1.5”x11.25”	24’-7”	22’-3”	20’-11”	19’-4”	21’-11”	19’-11”	18’-8”	17’-2”
1.35E LSL, 1.5”x11.875”	26’-0”	23’-6”	22’-1”	19’-4”	23’-2”	21’-0”	19’-9”	17’-2”
1.35E LSL, 1.5”x14”	30’-8”	27’-10”	24’-4”	19’-4”	27’-5”	24’-10”	21’-7”	17’-2”
1.35E LSL, 1.75”x5.5”	12’-5”	11’-3”	10’-6”	9’-9”	11’-1”	10’-0”	9’-5”	8’-8”
1.35E LSL, 1.75”x7.25”	16’-6”	14’-11”	14’-0”	13’-0”	14’-9”	13’-4”	12’-6”	11’-7”
1.35E LSL, 1.75”x9.25”	21’-3”	19’-3”	18’-0”	16’-8”	18’-11”	17’-2”	16’-1”	14’-11”
1.35E LSL, 1.75”x9.5”	21’-10”	19’-9”	18’-6”	17’-2”	19’-6”	17’-8”	16’-7”	15’-4”
1.35E LSL, 1.75”x11.25”	25’-11”	23’-6”	22’-1”	20’-5”	23’-2”	21’-0”	19’-8”	18’-3”
1.35E LSL, 1.75”x11.875”	27’-5”	24’-10”	23’-4”	21’-7”	24’-5”	22’-2”	20’-10”	19’-3”
1.35E LSL, 1.75”x14”	32’-4”	29’-4”	27’-7”	22’-11”	28’-11”	26’-2”	24’-7”	20’-5”
1.35E LSL, 1.75”x16”	37’-1”	33’-7”	28’-9”	22’-11”	33’-1”	30’-0”	25’-7”	20’-5”

Notes:
Refer to design notes from Table 34.

TABLE 37: ROOF SPAN CHART: 30 PSF SNOW LOAD, 15 PSF DEAD LOAD - 1.35E LSL

30 (psf) Snow Load; 15 (psf) Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
1.35E LSL, 1.5”x5.5”	11’-4”	10’-3”	9’-7”	8’-10”	10’-1”	9’-2”	8’-7”	7’-11”
1.35E LSL, 1.5”x7.25”	15’-1”	13’-7”	12’-9”	11’-10”	13’-6”	12’-2”	11’-5”	10’-7”
1.35E LSL, 1.5”x9.25”	19’-4”	17’-6”	16’-5”	15’-2”	17’-4”	15’-8”	14’-9”	13’-7”
1.35E LSL, 1.5”x9.5”	19’-11”	18’-0”	16’-11”	15’-8”	17’-10”	16’-2”	15’-2”	14’-0”
1.35E LSL, 1.5”x11.25”	23’-8”	21’-5”	20’-1”	17’-3”	21’-2”	19’-2”	18’-0”	15’-6”
1.35E LSL, 1.5”x11.875”	25’-0”	22’-7”	21’-3”	17’-3”	22’-5”	20’-3”	19’-0”	15’-6”
1.35E LSL, 1.5”x14”	29’-6”	26’-1”	21’-8”	17’-3”	26’-6”	23’-4”	19’-5”	15’-6”
1.35E LSL, 1.75”x5.5”	11’-11”	10’-10”	10’-1”	9’-4”	10’-8”	9’-8”	9’-1”	8’-4”
1.35E LSL, 1.75”x7.25”	15’-11”	14’-5”	13’-6”	12’-6”	14’-3”	12’-10”	12’-1”	11’-2”
1.35E LSL, 1.75”x9.25”	20’-5”	18’-6”	17’-4”	16’-1”	18’-3”	16’-7”	15’-6”	14’-5”
1.35E LSL, 1.75”x9.5”	21’-0”	19’-0”	17’-10”	16’-6”	18’-10”	17’-0”	16’-0”	14’-9”
1.35E LSL, 1.75”x11.25”	24’-11”	22’-7”	21’-2”	19’-7”	22’-4”	20’-3”	19’-0”	17’-7”
1.35E LSL, 1.75”x11.875”	26’-4”	23’-10”	22’-5”	20’-5”	23’-7”	21’-5”	20’-1”	18’-4”
1.35E LSL, 1.75”x14”	31’-2”	28’-3”	25’-8”	20’-5”	27’-11”	25’-4”	23’-1”	18’-4”
1.35E LSL, 1.75”x16”	35’-8”	30’-10”	25’-8”	20’-5”	32’-0”	27’-9”	23’-1”	18’-4”

Notes:
Refer to design notes from Table 34.

TABLE 38: ROOF SPAN CHART: 40 PSF SNOW LOAD, 15 PSF DEAD LOAD - 1.35E LSL

40 (psf) Snow Load; 15 (psf) Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
1.35E LSL, 1.5”x5.5”	10’-7”	9’-6”	8’-11”	8’-3”	9’-6”	8’-7”	8’-0”	7’-5”
1.35E LSL, 1.5”x7.25”	14’-1”	12’-9”	11’-11”	11’-0”	12’-8”	11’-5”	10’-9”	9’-11”
1.35E LSL, 1.5”x9.25”	18’-1”	16’-4”	15’-4”	14’-2”	16’-4”	14’-9”	13’-10”	12’-11”
1.35E LSL, 1.5”x9.5”	18’-7”	16’-10”	15’-9”	14’-2”	16’-9”	15’-2”	14’-3”	12’-11”
1.35E LSL, 1.5”x11.25”	22’-1”	20’-0”	17’-9”	14’-2”	19’-11”	18’-0”	16’-2”	12’-11”
1.35E LSL, 1.5”x11.875”	23’-4”	21’-2”	17’-9”	14’-2”	21’-1”	19’-1”	16’-2”	12’-11”
1.35E LSL, 1.5”x14”	27’-8”	21’-5”	17’-9”	14’-2”	24’-11”	19’-6”	16’-2”	12’-11”
1.35E LSL, 1.75”x5.5”	11’-2”	10’-1”	9’-5”	8’-9”	10’-0”	9’-1”	8’-6”	7’-10”
1.35E LSL, 1.75”x7.25”	14’-10”	13’-5”	12’-7”	11’-8”	13’-4”	12’-1”	11’-4”	10’-6”
1.35E LSL, 1.75”x9.25”	19’-1”	17’-3”	16’-3”	15’-0”	17’-2”	15’-7”	14’-7”	13’-6”
1.35E LSL, 1.75”x9.5”	19’-7”	17’-9”	16’-8”	15’-5”	17’-8”	16’-0”	15’-0”	13’-11”
1.35E LSL, 1.75”x11.25”	23’-4”	21’-1”	19’-10”	16’-9”	21’-0”	19’-0”	17’-10”	15’-4”
1.35E LSL, 1.75”x11.875”	24’-8”	22’-4”	20’-11”	16’-9”	22’-2”	20’-1”	18’-11”	15’-4”
1.35E LSL, 1.75”x14”	29’-2”	25’-4”	21’-1”	16’-9”	26’-3”	23’-2”	19’-3”	15’-4”
1.35E LSL, 1.75”x16”	33’-4”	25’-4”	21’-1”	16’-9”	30’-1”	23’-2”	19’-3”	15’-4”

Notes:
Refer to design notes from Table 34.

TABLE 39: ROOF SPAN CHART: 50 PSF SNOW LOAD, 15 PSF DEAD LOAD - 1.35E LSL

50 (psf) Snow Load; 15 (psf) Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
1.35E LSL, 1.5”x5.5”	10’-0”	9’-0”	8’-5”	7’-9”	9’-0”	8’-1”	7’-7”	7’-0”
1.35E LSL, 1.5”x7.25”	13’-4”	12’-0”	11’-3”	10’-5”	12’-0”	10’-10”	10’-2”	9’-5”
1.35E LSL, 1.5”x9.25”	17’-1”	15’-6”	14’-6”	11’-11”	15’-6”	14’-0”	13’-1”	11’-0”
1.35E LSL, 1.5”x9.5”	17’-7”	15’-11”	14’-11”	11’-11”	15’-11”	14’-5”	13’-6”	11’-0”
1.35E LSL, 1.5”x11.25”	20’-11”	18’-2”	15’-1”	11’-11”	18’-11”	16’-8”	13’-10”	11’-0”
1.35E LSL, 1.5”x11.875”	22’-1”	18’-2”	15’-1”	11’-11”	20’-0”	16’-8”	13’-10”	11’-0”
1.35E LSL, 1.5”x14”	24’-4”	18’-2”	15’-1”	11’-11”	22’-5”	16’-8”	13’-10”	11’-0”
1.35E LSL, 1.75”x5.5”	10’-6”	9’-6”	8’-11”	8’-3”	9’-6”	8’-7”	8’-0”	7’-5”
1.35E LSL, 1.75”x7.25”	14’-0”	12’-8”	11’-11”	11’-0”	12’-8”	11’-6”	10’-9”	9’-11”
1.35E LSL, 1.75”x9.25”	18’-1”	16’-4”	15’-4”	14’-2”	16’-4”	14’-9”	13’-10”	12’-10”
1.35E LSL, 1.75”x9.5”	18’-7”	16’-9”	15’-9”	14’-2”	16’-9”	15’-2”	14’-3”	13’-1”
1.35E LSL, 1.75”x11.25”	22’-1”	20’-0”	17’-10”	14’-2”	19’-11”	18’-1”	16’-6”	13’-1”
1.35E LSL, 1.75”x11.875”	23’-4”	21’-1”	17’-10”	14’-2”	21’-1”	19’-1”	16’-6”	13’-1”
1.35E LSL, 1.75”x14”	27’-7”	21’-6”	17’-10”	14’-2”	24’-11”	19’-10”	16’-6”	13’-1”
1.35E LSL, 1.75”x16”	28’-10”	21’-6”	17’-10”	14’-2”	26’-7”	19’-10”	16’-6”	13’-1”

Notes:
Refer to design notes from Table 34.

TABLE 40:ROOF SPAN CHART: 20 PSF NON-SNOW LOAD, 15 PSF DEAD LOAD - 1.55E LSL

20 (psf) Non-Snow Load; 15 (psf) Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
1.55E LSL, 1.5"x5.5"	12'-11"	11'-8"	10'-11"	10'-1"	11'-6"	10'-4"	9'-9"	9'-0"
1.55E LSL, 1.5"x7.25"	17'-2"	15'-7"	14'-7"	13'-6"	15'-3"	13'-10"	12'-11"	12'-0"
1.55E LSL, 1.5"x9.25"	22'-1"	20'-0"	18'-9"	17'-4"	19'-7"	17'-9"	16'-8"	15'-5"
1.55E LSL, 1.5"x9.5"	22'-8"	20'-6"	19'-3"	17'-10"	20'-2"	18'-3"	17'-1"	15'-10"
1.55E LSL, 1.5"x11.25"	26'-11"	24'-5"	22'-11"	21'-3"	23'-11"	21'-8"	20'-4"	18'-10"
1.55E LSL, 1.5"x11.875"	28'-5"	25'-9"	24'-3"	22'-1"	25'-4"	22'-11"	21'-6"	19'-4"
1.55E LSL, 1.5"x14"	33'-7"	30'-6"	27'-8"	22'-1"	29'-11"	27'-1"	24'-2"	19'-4"

Notes:
Refer to design notes from Table 34.

TABLE 41: ROOF SPAN CHART: 20 PSF NON-SNOW LOAD, 20 PSF DEAD LOAD - 1.55E LSL

20 (psf) Non-Snow Load; 20 (psf) Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
1.55E LSL, 1.5"x5.5"	12'-4"	11'-1"	10'-5"	9'-8"	10'-10"	9'-10"	9'-2"	8'-6"
1.55E LSL, 1.5"x7.25"	16'-4"	14'-10"	13'-11"	12'-10"	14'-5"	13'-1"	12'-3"	11'-4"
1.55E LSL, 1.5"x9.25"	21'-0"	19'-0"	17'-10"	16'-6"	18'-7"	16'-10"	15'-9"	14'-7"
1.55E LSL, 1.5"x9.5"	21'-7"	19'-7"	18'-4"	17'-0"	19'-1"	17'-3"	16'-3"	15'-0"
1.55E LSL, 1.5"x11.25"	25'-8"	23'-3"	21'-10"	19'-1"	22'-8"	20'-6"	19'-3"	16'-5"
1.55E LSL, 1.5"x11.875"	27'-1"	24'-7"	23'-1"	19'-1"	24'-0"	21'-8"	20'-5"	16'-5"
1.55E LSL, 1.5"x14"	32'-0"	28'-10"	24'-0"	19'-1"	28'-4"	24'-10"	20'-7"	16'-5"

Notes:
Refer to design notes from Table 34.

TABLE 42: ROOF SPAN CHART: 25 PSF SNOW LOAD, 15 PSF DEAD LOAD - 1.55E LSL

25 psf Snow Load, 15 psf Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
1.55E LSL, 1.5"x5.5"	12'-4"	11'-2"	10'-6"	9'-8"	11'-0"	9'-11"	9'-4"	8'-7"
1.55E LSL, 1.5"x7.25"	16'-5"	14'-10"	14'-0"	12'-11"	14'-8"	13'-3"	12'-5"	11'-6"
1.55E LSL, 1.5"x9.25"	21'-1"	19'-1"	17'-11"	16'-7"	18'-10"	17'-1"	16'-0"	14'-10"
1.55E LSL, 1.5"x9.5"	21'-8"	19'-8"	18'-5"	17'-1"	19'-4"	17'-6"	16'-6"	15'-3"
1.55E LSL, 1.5"x11.25"	25'-9"	23'-4"	21'-11"	19'-4"	23'-0"	20'-10"	19'-7"	17'-2"
1.55E LSL, 1.5"x11.875"	27'-3"	24'-8"	23'-2"	19'-4"	24'-4"	22'-0"	20'-8"	17'-2"
1.55E LSL, 1.5"x14"	32'-2"	29'-2"	24'-4"	19'-4"	28'-9"	25'-11"	21'-7"	17'-2"

Notes:
Refer to design notes from Table 34.

TABLE 43: ROOF SPAN CHART: 30 PSF SNOW LOAD, 15 PSF DEAD LOAD - 1.55E LSL

30 (psf) Snow Load; 15 (psf) Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
1.55E LSL, 1.5"x5.5"	11'-10"	10'-9"	10'-1"	9'-4"	10'-7"	9'-7"	9'-0"	8'-4"
1.55E LSL, 1.5"x7.25"	15'-10"	14'-4"	13'-5"	12'-5"	14'-2"	12'-10"	12'-0"	11'-1"
1.55E LSL, 1.5"x9.25"	20'-4"	18'-4"	17'-3"	15'-11"	18'-2"	16'-6"	15'-5"	14'-4"
1.55E LSL, 1.5"x9.5"	20'-10"	18'-11"	17'-9"	16'-5"	18'-8"	16'-11"	15'-11"	14'-8"
1.55E LSL, 1.5"x11.25"	24'-10"	22'-5"	21'-1"	17'-3"	22'-3"	20'-1"	18'-11"	15'-6"
1.55E LSL, 1.5"x11.875"	26'-2"	23'-9"	21'-8"	17'-3"	23'-6"	21'-3"	19'-5"	15'-6"
1.55E LSL, 1.5"x14"	31'-0"	26'-1"	21'-8"	17'-3"	27'-9"	23'-4"	19'-5"	15'-6"

Notes:
Refer to design notes from Table 34.

TABLE 44: ROOF SPAN CHART: 40 PSF SNOW LOAD, 15 PSF DEAD LOAD - 1.55E LSL

40 (psf) Snow Load; 15 (psf) Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
1.55E LSL, 1.5"x5.5"	11'-1"	10'-0"	9'-5"	8'-8"	10'-0"	9'-0"	8'-5"	7'-9"
1.55E LSL, 1.5"x7.25"	14'-9"	13'-4"	12'-6"	11'-7"	13'-4"	12'-0"	11'-3"	10'-5"
1.55E LSL, 1.5"x9.25"	19'-0"	17'-2"	16'-1"	14'-2"	17'-1"	15'-6"	14'-6"	12'-11"
1.55E LSL, 1.5"x9.5"	19'-6"	17'-8"	16'-7"	14'-2"	17'-7"	15'-11"	14'-11"	12'-11"
1.55E LSL, 1.5"x11.25"	23'-2"	21'-0"	17'-9"	14'-2"	20'-11"	18'-11"	16'-2"	12'-11"
1.55E LSL, 1.5"x11.875"	24'-6"	21'-5"	17'-9"	14'-2"	22'-1"	19'-6"	16'-2"	12'-11"
1.55E LSL, 1.5"x14"	28'-8"	21'-5"	17'-9"	14'-2"	26'-1"	19'-6"	16'-2"	12'-11"

Notes:
Refer to design notes from Table 34.

TABLE 45: ROOF SPAN CHART: 50 PSF SNOW LOAD, 15 PSF DEAD LOAD - 1.55E LSL

50 (psf) Snow Load; 15 (psf) Dead Load Live Load Deflection = L/240; Total Load Deflection = L/180								
Joist Series	Roof Slope ≤ 6/12 Span On Center Spacing				6/12 < Roof Slope ≤ 12/12 Span On Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
1.55E LSL, 1.5"x5.5"	10'-6"	9'-6"	8'-10"	8'-2"	9'-5"	8'-6"	8'-0"	7'-5"
1.55E LSL, 1.5"x7.25"	14'-0"	12'-7"	11'-10"	10'-11"	12'-7"	11'-5"	10'-8"	9'-11"
1.55E LSL, 1.5"x9.25"	17'-11"	16'-3"	15'-1"	11'-11"	16'-3"	14'-8"	13'-10"	11'-0"
1.55E LSL, 1.5"x9.5"	18'-5"	16'-8"	15'-1"	11'-11"	16'-8"	15'-1"	13'-10"	11'-0"
1.55E LSL, 1.5"x11.25"	21'-11"	18'-2"	15'-1"	11'-11"	19'-10"	16'-8"	13'-10"	11'-0"
1.55E LSL, 1.5"x11.875"	23'-2"	18'-2"	15'-1"	11'-11"	21'-0"	16'-8"	13'-10"	11'-0"
1.55E LSL, 1.5"x14"	24'-4"	18'-2"	15'-1"	11'-11"	22'-5"	16'-8"	13'-10"	11'-0"

Notes:
Refer to design notes from Table 34.

SECTION 13: TOLKO T-TEC LSL ROOF LOAD TABLES

TABLE 46: ROOF JOIST UNIFORM PLF LOAD TABLE (115% & 125%) - 1.35E TOLKO T-TEC LSL 1-1/2” WIDTH (ROOF SLOPE ≤ 6/12)

Product Grade	Member Thickness (in)	Depth (in)	Total Load (Non-Snow or Snow + Dead Load), PLF Roof Joist Horizontal Clear Span (ft)								
			8	10	12	14	16	18	20	22	24
1.35E T-TEC LSL	1-1/2	Limited to the bearing capacity of 425 psi for SPF Bearing Plate									
		5.5	104	55	32						
		7.25	193	125	73	47	32				
		9.25	193	155	130	97	65	46	34		
		9.5	193	155	130	105	71	50	37		
		11.25	193	155	130	112	98	83	61	46	36
		11.875	193	155	130	112	98	87	72	54	42
		14	193	155	130	112	98	87	79	72	66
		Limited to the bearing capacity of 690 psi for 1.35E T-TEC LSL Bearing Plate									
		5.5	104	55							
		7.25	231	125	73	47	32				
		9.25	313	237	152	97	65	46	34		
		9.5	313	249	165	105	71	50	37		
		11.25	313	252	211	175	118	83	61	46	36
		11.875	313	252	211	181	139	98	72	54	42
		14	313	252	211	181	159	142	117	89	68

Notes

1) Joist span is the horizontal clear distance between supports and is valid for simple or continuous span applications.
2) The allowable load represents the capacity in pounds per lineal foot (plf) of length
3) Tabulated values are valid for uniform loads only.
4) Minimum **end bearing of 1-3/4”**, and minimum **interior bearing of 3-1/2”**.
5) Deflection of **L/240** for the live load and **L/180** for the total load.
6) Tabulated values assume full lateral support on the compression edge. Full support is considered to be a maximum unbraced length of 24”.
7) Tabulated values are valid for dry service conditions, where the moisture content in service does not exceed 16%, as in most covered structures.

How to use this table

1) Total load shall be checked.
2) Joist weight shall be included in the total load.
3) Select the appropriate Horizontal Clear Span .
4) Scan vertically to find the proper thickness and depth with the capacities that exceed the actual total load.
5) Verify the min. end bearing length of 1-3/4” and min. interior bearing length of 3-1/2”.
6) For loading conditions not shown, use CSD® software or contact your Tolko representative.

TABLE 47: ROOF JOIST UNIFORM PLF LOAD TABLE (115% & 125%) - 1.35E TOLKO T-TEC LSL 1-1/2" WIDTH (6/12 < ROOF SLOPE ≤ 12/12)

Product Grade	Member Thickness (in)	Depth (in)	Total Load (Non-Snow or Snow + Dead Load), PLF Roof Joist Horizontal Clear Span (ft)								
			8	10	12	14	16	18	20	22	24
1.35E T-TEC LSL	1-1/2	Limited to the bearing capacity of 425 psi for SPF Bearing Plate									
		5.5	52								
		7.25	118	62	36						
		9.25	152	123	75	48	32				
		9.5	152	123	82	52	35				
		11.25	152	123	103	86	58	41	30		
		11.875	152	123	103	88	68	48	35		
		14	152	123	103	88	77	69	58	44	34
		Limited to the bearing capacity of 690 psi for 1.35E T-TEC LSL Bearing Plate									
		5.5	52								
		7.25	118	62	36						
		9.25	228	128	75	48	32				
		9.5	240	139	82	52	35				
		11.25	247	199	136	86	58	41	30		
		11.875	247	199	159	101	68	48	35		
		14	247	199	167	143	112	79	58	44	34

Notes

Refer to design notes and "How to use this table" from Table 46.

TABLE 48: ROOF JOIST UNIFORM PLF LOAD TABLE (115% & 125%) - 1.35E TOLKO T-TEC LSL 1-3/4" WIDTH (ROOF SLOPE ≤ 6/12)

Product Grade	Member Thickness (in)	Depth (in)	Total Load (Non-Snow or Snow + Dead Load), PLF Roof Joist Horizontal Clear Span (ft)								
			8	10	12	14	16	18	20	22	24
1.35E T-TEC LSL	1-3/4	Limited to the bearing capacity of 425 psi for SPF Bearing Plate									
		5.5	122	64	37						
		7.25	225	146	86	54	37				
		9.25	225	181	152	113	76	54	40	30	
		9.5	225	181	152	123	83	58	43	32	
		11.25	225	181	152	130	114	97	71	54	41
		11.875	225	181	152	130	114	102	84	63	49
		14	225	181	152	130	114	102	92	84	77
		16	225	181	152	130	114	102	92	84	77
		Limited to the bearing capacity of 690 psi for 1.35E T-TEC LSL Bearing Plate									
		5.5	122	64							
		7.25	269	146	86	54	37				
		9.25	365	276	178	113	76	54	40	30	
		9.5	365	290	193	123	83	58	43	32	
		11.25	365	294	246	204	137	97	71	54	41
		11.875	365	294	246	212	162	114	84	63	49
		14	365	294	246	212	186	165	137	103	80
		16	365	294	246	212	186	165	149	136	119

Notes

Refer to design notes and "How to use this table" from Table 46.

TABLE 49: ROOF JOIST UNIFORM PLF LOAD TABLE (115% & 125%) - 1.35E TOLKO T-TEC LSL 1-3/4" WIDTH (6/12 < ROOF SLOPE ≤ 12/12)

Product Grade	Member Thickness (in)	Depth (in)	Total Load (Non-Snow or Snow + Dead Load), PLF Roof Joist Horizontal Clear Span (ft)								
			8	10	12	14	16	18	20	22	24
1.35E T-TEC LSL	1-3/4	Limited to the bearing capacity of 425 psi for SPF Bearing Plate									
		5.5	60	31							
		7.25	138	72	42						
		9.25	178	143	88	56	38				
		9.5	178	143	95	61	41				
		11.25	178	143	120	101	68	48	35		
		11.875	178	143	120	103	80	56	41	31	
		14	178	143	120	103	90	81	68	51	39
		16	178	143	120	103	90	81	73	66	59
		Limited to the bearing capacity of 690 psi for 1.35E T-TEC LSL Bearing Plate									
		5.5	60	31							
		7.25	138	72	42						
		9.25	266	150	88	56	38				
		9.5	280	162	95	61	41				
		11.25	288	232	158	101	68	48	35		
		11.875	288	232	186	118	80	56	41	31	
		14	288	232	194	167	131	92	68	51	39
		16	288	232	194	167	147	131	101	76	59

Notes

Refer to design notes and "How to use this table" from Table 46.

TABLE 50: ROOF JOIST UNIFORM PLF LOAD TABLE (115% & 125%) - 1.55E TOLKO T-TEC LSL 1-1/2" WIDTH (ROOF SLOPE ≤ 6/12)

Product Grade	Member Thickness (in)	Depth (in)	Total Load (Non-Snow or Snow + Dead Load), PLF Roof Joist Horizontal Clear Span (ft)								
			8	10	12	14	16	18	20	22	24
1.55E T-TEC LSL	1-1/2	Limited to the bearing capacity of 425 psi for SPF Bearing Plate									
		5.5	120	63	37						
		7.25	193	144	84	54	36				
		9.25	193	155	130	111	75	53	39		
		9.5	193	155	130	112	81	58	42	32	
		11.25	193	155	130	112	98	87	70	53	41
		11.875	193	155	130	112	98	87	79	62	48
		14	193	155	130	112	98	87	79	72	66
		Limited to the bearing capacity of 775 psi for 1.55E T-TEC LSL Bearing Plate									
		5.5	120	63	37						
		7.25	275	144	84	54	36				
		9.25	351	283	175	111	75	53	39		
		9.5	351	283	190	121	81	58	42		
		11.25	351	283	237	200	135	96	70	53	41
		11.875	351	283	237	204	159	112	82	62	48
		14	351	283	237	204	179	159	135	102	79

Notes
Refer to design notes and "How to use this table" from Table 46.

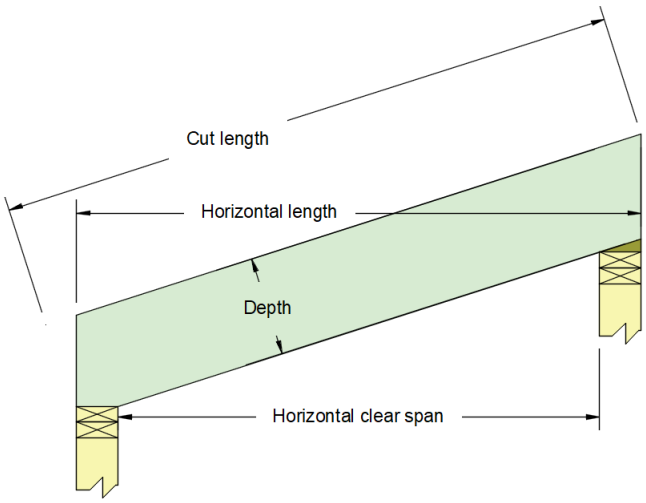
TABLE 51: ROOF JOIST UNIFORM PLF LOAD TABLE (115% & 125%) - 1.55E TOLKO T-TEC LSL 1-1/2" WIDTH (6/12 < ROOF SLOPE ≤ 12/12)

Product Grade	Member Thickness (in)	Depth (in)	Total Load (Non-Snow or Snow + Dead Load), PLF Roof Joist Horizontal Clear Span (ft)								
			8	10	12	14	16	18	20	22	24
1.55E T-TEC LSL	1-1/2	Limited to the bearing capacity of 425 psi for SPF Bearing Plate									
		5.5	59	31							
		7.25	136	71	42						
		9.25	152	123	86	55	37				
		9.5	152	123	94	60	40				
		11.25	152	123	103	88	67	47	35		
		11.875	152	123	103	88	77	56	41	31	
		14	152	123	103	88	77	69	62	50	39
		Limited to the bearing capacity of 775 psi for 1.55E T-TEC LSL Bearing Plate									
		5.5	59	31							
		7.25	136	71	42						
		9.25	278	147	86	55	37				
		9.5	278	160	94	60	40				
		11.25	278	224	156	99	67	47	35		
		11.875	278	224	183	116	79	56	41	31	
		14	278	224	187	161	129	91	67	50	39

Notes
Refer to design notes and "How to use this table" from Table 46.

SECTION 14: RAFTER CUT LENGTH

FIGURE 6: RAFTER CUT LENGTH



Cut length = (Horizontal length × A) + (Depth/12 × B)

Where:
Cut length (ft)
Horizontal length (ft)
Depth (in)
A, B – cut length factors from Table 35

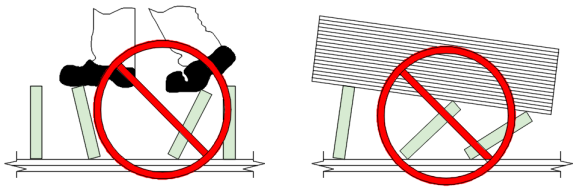
TABLE 52: CUT LENGTH FACTORS

Cut length factors	Slope																						
	1/12	1.5/12	2/12	2.5/12	3/12	3.5/12	4/12	4.5/12	5/12	5.5/12	6/12	6.5/12	7/12	7.5/12	8/12	8.5/12	9/12	9.5/12	10/12	10.5/12	11/12	11.5/12	12/12
A	1.003	1.008	1.014	1.021	1.031	1.042	1.054	1.068	1.083	1.100	1.118	1.137	1.158	1.179	1.202	1.225	1.250	1.275	1.302	1.329	1.357	1.385	1.414
B	0.083	0.125	0.167	0.208	0.250	0.292	0.333	0.375	0.417	0.458	0.500	0.542	0.583	0.625	0.667	0.708	0.750	0.792	0.833	0.875	0.917	0.958	1.000

SECTION 15: WARNINGS

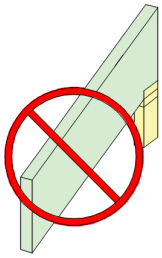
WARNING 1:

Do not walk/stack on unbraced joists.



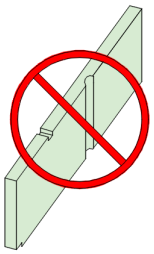
WARNING 2:

Do not overhang birdsmouth cut from inside face of plate.



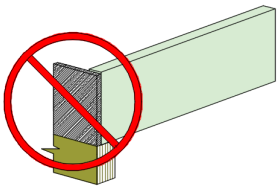
WARNING 3:

Do not cut or notch.



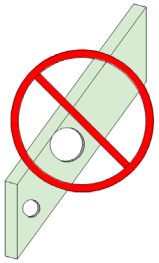
WARNING 4:

Do not use sawn lumber for rim board or blocking as it may shrink after installation. Only use Tolko Rim Board or T-TEC LSL Rim Board.



WARNING 5:

Do not cut holes which are not in compliance with the allowable hole charts.



SECTION 16: STORAGE AND HANDLING

INTRODUCTION

Proper storage and handling of engineered wood products (EWP) including T-TEC LSL and Tolko LSL Industrials is required to protect the products during distribution and at the jobsite. APA – The Engineered Wood Association recommends the following storage and handling practices for EWP products. For full details on proper storage and handling, refer to *APA Technical Note: Proper Storage and Handling of I-Joists and LVL, Form E705* available at www.apawood.org.

SAFE HANDLING DURING DISTRIBUTION

3. Bundle wrap can be slippery. Avoid walking on wrapped bundles. Stacks of product may be unstable or slippery, especially when wet. Avoid walking on the material.
4. Follow good forklift safety procedures when handling T-TEC LSL and Tolko LSL Industrials at the yard.
5. Store longest material lowest to the ground.
6. When handling with a crane, pick up the load using a spreader if necessary to minimize handling stresses.
7. Post and follow load limits on storage racks.

STORAGE DURING DISTRIBUTION

1. Keep wrapped to protect from weather.
2. Use stickers to separate bundles.
3. Use stickers every 8 feet and maintain vertical alignment of the stickers.
4. Do not store T-TEC LSL and Tolko LSL Industrials in direct contact with the ground.
5. For optimal moisture protection, keep at least 12 inches up from the ground.
6. To protect from dirt and weather, delay unwrapping the bundles until the time of the installation or cut-up for delivery.
7. Take care to avoid forklift damage. If the ground is unlevel in the storage area, reduce forklift speed to avoid “bouncing” the load.
8. When handling with a crane, pick up the load using a spreader if necessary to minimize handling stresses.
9. Maintain stack height within safe limits.
10. Do not stack other material on top of T-TEC LSL and Tolko LSL Industrials.

PROPER HANDLING AT THE JOBSITE

1. Do not drop the product off the delivery truck. Best practice is to use a forklift or boom.
2. Store on level, well-drained area.
3. Keep on stickers spaced every 8’ and at least every 6” off the ground at the jobsite.
4. Keep material covered to protect from weather.
5. Do not stack other material on top of the product.
6. Never use or try to repair damaged products. If defective material is discovered prior to or during installation, cease installation and contact the supplier.

MOISTURE EFFECTS

T-TEC LSL and Tolko LSL Industrials products are manufactured under carefully controlled conditions that assure they are dry. Moisture content can be affected by humidity, exposure to wetting and drying conditions. While T-TEC LSL and Tolko LSL Industrials products are engineered to withstand normal exposure, excessive exposure to moisture may lead to dimensional change.

If moisture is present, mold, mildew and wood decay fungi may grow on any engineered wood products, thus it is important to properly store T-TEC LSL and Tolko LSL Industrials to control exposure to moisture. Moisture increase is expected under normal construction situations and does not adversely affect the performance of the products if good building practices are followed to minimize exposure and to provide proper conditions for the products to re-equilibrate to dry conditions.

Reference: *APA Technical Note: Proper Storage and Handling of I-Joists and LVL, Form E705* available at www.apawood.org.

CSD SOFTWARE

Calculated Structured Designs Inc. (CSD®) is a software development company providing solutions for the engineered wood, engineering, design, and building industries for all of North America and Australia.

Building with the most recent cutting edge development tools, CSD® offers solutions for our industry leading designers, drafters, engineers, and builders.

Website: csdsoftware.com/csd/software/

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- Multiple input styles for quick and easy drawing
- Real Time 3D feedback
- Create realistic model the way it will be built
- Draw the way you want. iStruct® will follow
- Robust graphics tools allow custom detailing in the model

DESIGN

- Analyze anytime for quick results and guidance
- Precision load development for accurate designs
- Solution Seeker finds the optimum product solution
- Easily create required engineering reports
- Automatic load distribution analyzes all components at once

BUILD

- Create Flexible and detailed plot layouts
- Add any type of data to your plot
- Integrate customer details and information
- Create dynamic quotes with exports to point of sale systems
- Send materials to automated saw files or create manual cut lists

ACCESS THE CSD SOFTWARE

Tolko offers authorized customers access to engineered wood design software by CSD. This software includes:

isPlan®

A 3D layout and design solution that allows users to model an entire structure with 2D and 3D views. isPlan® develops and transfers gravity loads through the structure and designs the structural members.

isDesign®

A single member sizing solution that allows users to size floor and roof joists, beams and posts by inputting span and load information. Innovative tools allow selection of the most cost effective solution.

isWall®

The first stand alone wall design application that allows users to model a tall wall and run gravity and wind analysis for all the components of the wall.

To become a Tolko authorized user, please contact your Tolko EWP sales representative at:

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