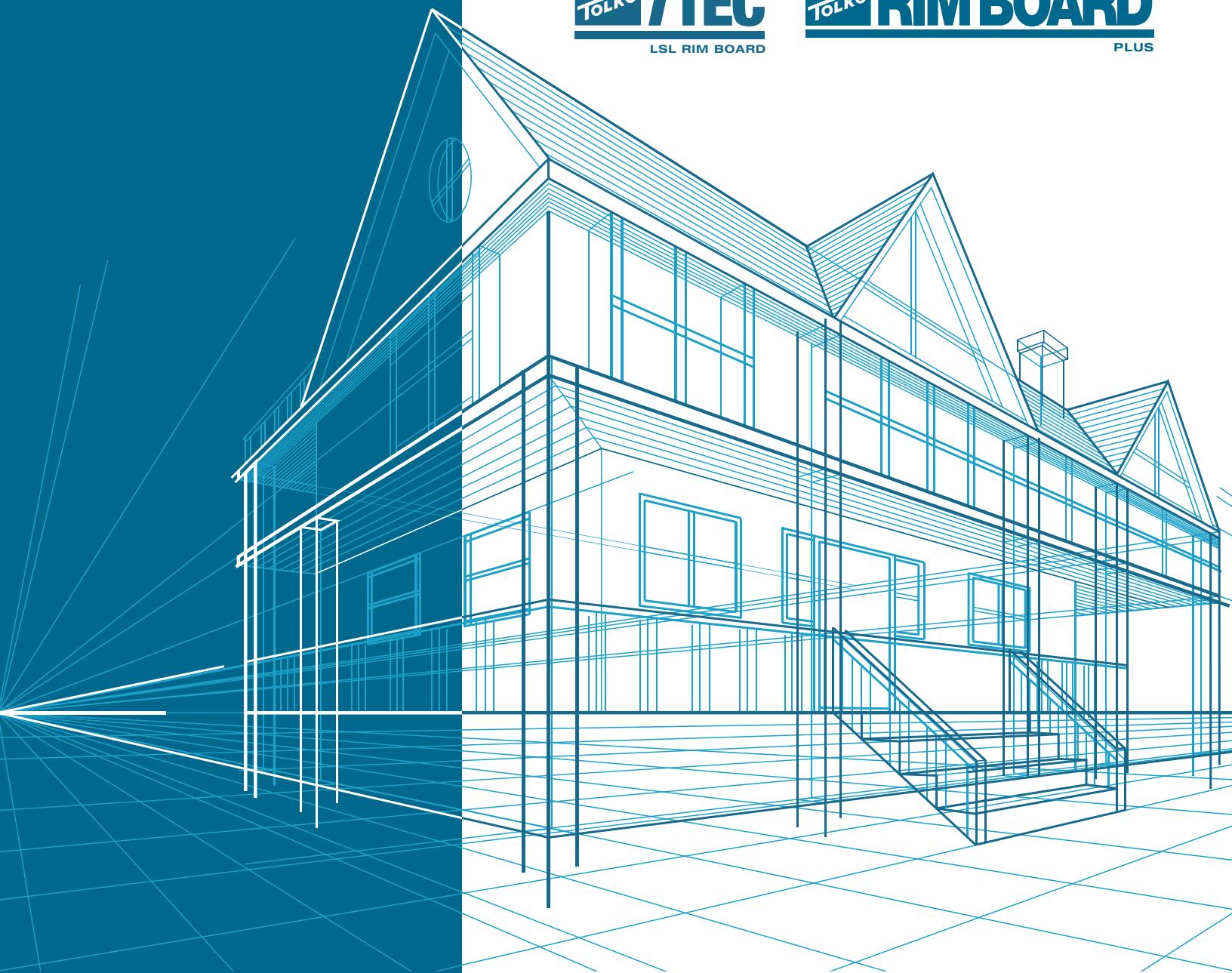




## TECHNICAL GUIDE (LSD - CANADA)

### T-TEC 1.35E & 1.55E LSL RIM BOARD & TOLKO OSB RIM BOARD PLUS



**TRUE.  
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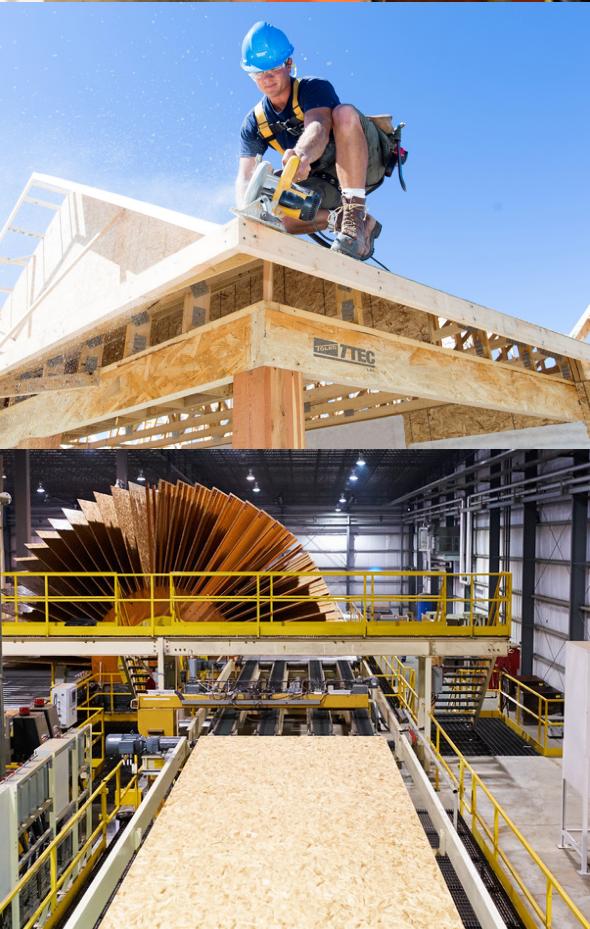
Tolko Marketing and Sales  
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Vernon, BC V1T 9W9  
Tel 250.545.4411 – Fax 250.550.2550



LIMIT STATES DESIGN

Updated: Jun 22, 2023

[WWW.TOLKO.COM](http://WWW.TOLKO.COM)



## TOLKO RIM BOARD OFFERINGS

Tolko produces T-TEC LSL Rim Board from laminated strand lumber (LSL) and Tolko OSB Rim Board Plus from oriented strand board (OSB). Tolko's rim board offerings are manufactured from highly predictable and uniform engineered wood that is sawn to consistent sizes and resists warping and splitting making them the preferred rim board for builders.



## RIM BOARD APPLICATIONS

Tolko OSB Rim Board Plus fills the space between the sill plate and the bottom wall plate, or between the top plate and the bottom plate in multi-floor construction. In addition, to filling the void, rim board is an integral structural component that transfers both lateral and vertical forces. To function properly, the rim board must match the depth of framing members.

## BUILDING WITH CONFIDENCE

T-TEC LSL Rim Board and Tolko OSB Rim Board Plus are structural-use products that are manufactured in accordance with the Performance Standard for APA EWS Rim Boards PRR-401 ANSI PRR-410, CCMC 13238-L (for OSB Rim Board) and meet or exceed the requirements given in the ICC-ES Acceptance Criteria for Wood-based Rim Board Products, AC124.

	T-TEC LSL Rim Board	Tolko OSB Rim Board Plus
<b>Thickness<sup>1</sup></b>	1-1/8", 1-1/4", 1-1/2", 1-3/4"	1-1/8", 1-1/4"
<b>Depths<sup>1</sup></b>	9-1/2", 11-7/8", 14", 16", 18", 20", 22", 24"	9-1/2", 11-7/8", 14", 16", 18", 20", 22", 24"
<b>Lengths<sup>1</sup></b>	12', 16', 24'	12', 16', 24'
<b>E-Rating</b>	1.35E, 1.55E	0.55E
<b>Zinc Borate Protection</b>	Optional	Optional

<sup>1</sup> For promotional purposes, lengths and widths are the actual sizes.

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# RIM BOARD INSTALLATION

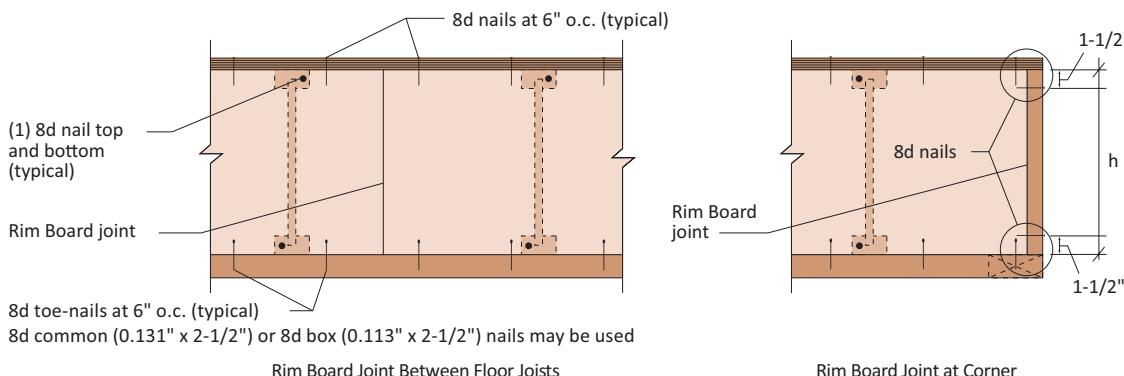
TABLE 1: NAILING SCHEDULE FOR TOLKO OSB RIM BOARD PLUS AND 1.35E &amp; 1.55E T-TEC LSL

Sheathing to Rim Board	Rim Board to Sill Plate (Toe Nail)	Rim Board to I-Joist/LSL Joist	Sheathing to Rim Board to Bottom Plate
8d common (0.131" x 2-1/2") at 6" o.c. (typical)	8d box (0.113" x 2-1/2") at 6" o.c. (typical)	8d box (0.113" x 2-1/2") top and bottom. This is typical for a Rim Board of 1-1/8". A larger nail size (10d: 0.131"x 2-1/2") may be required for thicker Rim Board or as indicated by the I-Joist/LSL Joist manufacturer.	16d box (0.135" x 3-1/2") or 16d common (0.162" x 3-1/2") - in accordance with the prescriptive requirements of the applicable code.

Notes:

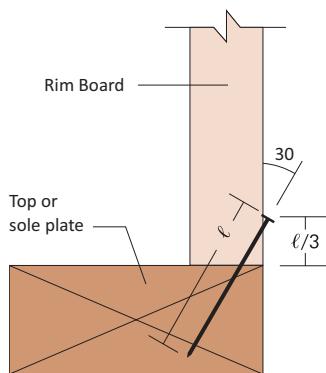
- 1) The first and last nail between sheathing and rim board (edge nails) shall be 3 inches from each rim board end.
- 2) The first and last toe nails between rim board and sill plate shall be 3 inches from each rim board end.
- 3) The lateral load capacity (Table 3) shall not be increased for nail spacings less than 6". The 16d (box or common) nails used to connect the bottom plate to the Rim Board through the sheathing do not reduce the lateral load capacity of the Rim Board provided that the 8d nail spacing (sheathing-Rim Board) is 6" o.c. and the 16d nail spacing (bottom plate-sheathing-Rim Board) is in accordance with the prescriptive requirements of the applicable code.

FIGURE 1: ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



Source: APA Performance Rated Rim Boards® – Form No.345K

FIGURE 2: TOE-NAIL CONNECTION AT RIM BOARD



Source: APA Performance Rated Rim Boards® – Form No.345K

TABLE 2: FASTENERS DESIGN FOR TOLKO OSB RIM BOARD PLUS AND 1.35E & 1.55E T-TEC LSL<sup>(a,b)</sup>

Equivalent Specific Gravity (S.G.)					
Nails		Nails and Wood Screws <sup>(e)</sup>		Bolts and Lag Screws <sup>(c, d)</sup>	
Withdrawal Load		Lateral Load		Lateral Load	
Installed in Edge	Installed in Face	Installed in Edge	Installed in Face	Installed in Face	
				Parallel to Grain	Perpendicular to Grain
0.42	0.44	0.47	0.50	0.50	0.50

- (a) Fastener design values calculated using the tabulated equivalent specific gravities given above must be adjusted by the applicable adjustment factors specified in the CSA086 for connections.
- (b) Fasteners spacing, and end and edge distances must be as specified in the CSA086.
- (c) Bolts and lag screws shall only be installed into the face (plank orientation) of the LSL or Rim Board.
- (d) The capacities for the 1/2-inch diameter lag screws/bolts installed into Tolko LSL or Rim Board for ledger attachment shall be in accordance with Table 3.
- (e) For Tolko OSB Rim Board Plus, a specific gravity of 0.5 could be used for generating the factored lateral resistances of nails or screws fastened on the face.

## PROPOSITION 65 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 inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to [www.P65Warnings.ca.gov/wood](http://www.P65Warnings.ca.gov/wood).

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](http://www.P65Warnings.ca.gov).

# DESIGN PROPERTIES RIM BOARD APPLICATION

TABLE 3: FACTORED RESISTANCES FOR TOLKO OSB RIM BOARD PLUS AND 1.35E & 1.55E T-TEC LSL<sup>(a)</sup>

Grade	Thickness (in.)	Factored Horizontal Shear Load, $\bar{O}H^{(b,c)}$ (lbf/ft)	Factored Uniform Vertical Load, $\bar{O}V^{(d)}$ (lbf/ft)					Factored Concentrated Vertical Load, $\bar{O}P^{(e)}$ (lbf)	Factored Lateral Resistance for 1/2-inch dia. Lag Screws/Bolts, $\bar{O}Z$ (lbf)		
			Depth								
			≤ 16"	18"	20"	22"	24"				
Tolko OSB Rim Board Plus	1-1/8	243	7,033	6,743	6,018	5,293	4,640	5,075	584		
	1-1/4										
1.35E T-TEC LSL	1-1/4	304	7,830	6,308	6,308	6,308	6,308	5,510	934		
	1-1/2	274	9,353	7,975	7,975	7,975	7,975				
	1-3/4	243	10,948	10,948	10,948	10,948	10,948				
1.55E T-TEC LSL	1-1/8	286	7,033	4,930	4,930	4,930	4,930	6,670	734		
	1-1/4	280	7,830	7,468	7,468	7,468	7,468				
	1-1/2	243	9,353	8,700	8,700	8,700	8,700				

- (a) The tabulated lateral load factored resistance is based on the short-term load duration. The vertical uniform and vertical concentrated load are not permitted to be increased for any load duration. The tabulated values are limited to dry service conditions.
- (b) The horizontal lateral load transfer resistance is for shear forces parallel to the rim joist under short-term and dry service conditions only. For compliance with the NBC 2020, the value shall be multiplied by 0.93. The fastening of the floor shall meet or exceed Part 9 of the NBC 2020.
- (c) The nailing schedule for sheathing to rim is based on 8d box nails (0.113" x 2-1/2") at 6" on center, and for the rim board to the sill plate with 8d box nails (0.113" x 2-1/2" toe-nailed) at 6" on center. Values assume the floor joists or blocking are fastened to the rim board and the sill plate at max. 24" on center in accordance with Part 9 of the NBC 2020. Commercial framing connectors may be used to achieve lateral load capacities exceeding the values shown in this table. Calculations shall be based on the equivalent relative density values listed in Table 2 subjected to the nailing spacing provided in Table 4.
- (d) The factored uniform vertical load capacity is based on the strength of the rim board and may need to be reduced based on the bearing capacity of the supporting wall plate.
- (e) Factored concentrated vertical load capacity is based on a 4-1/2" bearing length. The bearing load must be simultaneously satisfied along with the concentrated load capacity.

**Rim Boards subjected to a combination of uniform and concentrated vertical loads -** First, the factored applied concentrated load shall not exceed the factored concentrated vertical load capacity of the rim board, based on a 4-1/2" bearing length over the floor sheathing attached to the top of the rim board. Second, the factored applied concentrated load shall be calculated as an equivalent uniform load based on the applied loading length increased by a 45° load distribution through decking and plate on both sides of the concentrated load, as applicable. The equivalent factored uniform load shall be added to the factored applied uniform load to determine the total factored applied uniform load, which shall not exceed the factored vertical uniform load of the Rim Board. If the total factored applied uniform load exceeds the factored vertical uniform load, use appropriate squash blocks, double Rim Boards, or a higher grade Performance Rated Rim Board to carry the concentrated vertical load.

**Example:**

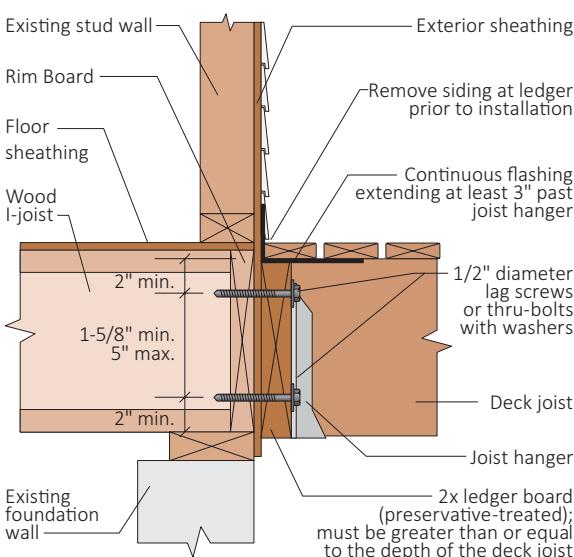
A mechanical device distributes a weight of 1,000 lbf for a distance of 12 inches along the top of a 1-1/8-inch x 16-inch Tolko OSB Rim Board Plus through 23/32-inch floor sheathing. In addition to the mechanical device, the Rim Board carries a uniform live load of 2,000 lbf/ft and a concentrated live load of 2,000 lbf.

**Check:**

- (1) Factored concentrated vertical load =  $1.25 * 1,000 \text{ lbf} + 1.5 * 2,000 = 4,250 \text{ lbf} < 1.0 * 5,075 = 5,075 \text{ lbf}$  (for a KD = 1.0). OK.
- (2) Equivalent factored uniform load =  $(1.25 * 1,000 + 1.5 * 2,000) / [(12 + 2 * 23/32) / 12] = 3,795 \text{ lbf/ft}$ . Total equivalent factored uniform bearing load =  $3,795 + 1.5 * 2,000 = 6,795 \text{ lbf/ft}$ . Use Tolko OSB Rim Board Plus that has an allowable bearing (vertical) load capacity of 7,033 lbf/ft.

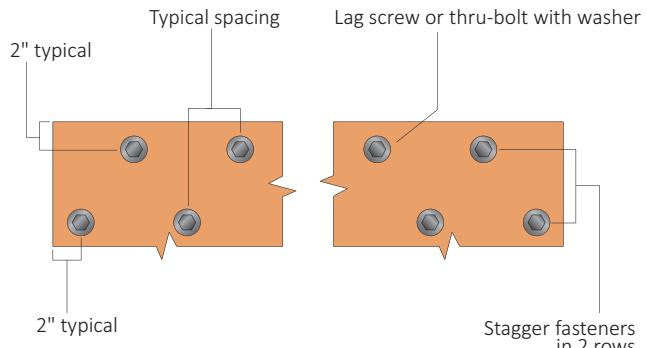
Source: Form No. W345K • © 2009 APA - The Engineered Wood Association • www.apawood.org

FIGURE 3: 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



Source: APA Performance Rated Rim Boards® – Form No.345K

FIGURE 4: FASTENER SPACING FOR DECK LEDGER



Source: APA Performance Rated Rim Boards® – Form No.345K

# NAILING DISTANCES ON THE EDGE AND FACE

TABLE 4: MINIMUM NAIL SPACING<sup>(a)</sup>

Product	Thickness (in.)	Orientation <sup>(d)</sup>	Pennyweight/Type <sup>(e, f)</sup>	Max. Diameter (in.)	Max. Length (in.)	Minimum End Distance (in.)	Minimum Nail Spacing per Row (in)	
							Single Row	Multiple Rows <sup>(b,c,i)</sup>
Tolko OSB Rim Board Plus	1-1/8	Face <sup>(h)</sup>	8d; 10d; 12d	0.148	3-1/4	2-1/2	2	
	1-1/4	Edge <sup>(g)</sup>	8d; 10d; 12d	0.148	3-1/4	2-1/2	6	
1.35E T-TEC LSL Rim Board	1-1/4 ≤ thickness < 1-1/2	Edge <sup>(g)</sup>	8d and smaller	0.131	2-1/2	2	4	Not recommended
			10d; 12d	0.148	3-1/4	2	4	
			16d	0.162	3-1/2	2-1/2	5	
		Face <sup>(h)</sup>	8d and smaller	0.131	2-1/2	7/8	1	1
			10d; 12d	0.148	3-1/4	7/8	1	1
			16d	0.162	3-1/2	7/8	1-1/2	1-1/2
	1-1/2 ≤ thickness < 3-1/2	Edge <sup>(g)</sup>	8d and smaller	0.131	2-1/2	1	2	3
			10d; 12d	0.148	3-1/4	2	3	4
		Face <sup>(h)</sup>	16d	0.162	3-1/2	2-1/2	3	6
			8d and smaller	0.131	2-1/2	1/2	1	1
1.55E T-TEC LSL	1-1/8	Edge <sup>(g)</sup>	10d; 12d	0.148	3-1/4	2-1/2	5	Not recommended
			16d	0.162	3-1/2	3	6	
		Face <sup>(h)</sup>	8d and smaller	0.131	2-1/2	7/8	1	1
			10d; 12d	0.148	3-1/4	7/8	1	1
			16d	0.162	3-1/2	7/8	1-1/2	1-1/2
	1-1/4	Edge <sup>(g)</sup>	8d and smaller	0.131	2-1/2	2	4	Not recommended
			10d; 12d	0.148	3-1/4	2	4	
		Face <sup>(h)</sup>	16d	0.162	3-1/2	2-1/2	5	
			8d and smaller	0.131	2-1/2	7/8	1	1
	1-1/2	Edge <sup>(g)</sup>	10d; 12d	10d; 12d	3-1/4	7/8	1	1
			16d	16d	3-1/2	7/8	1-1/2	1-1/2
		Face <sup>(h)</sup>	8d and smaller	0.131	2-1/2	1/2	1	1
			10d; 12d	10d; 12d	3-1/4	1/2	1	1
			16d	16d	3-1/2	7/8	1-1/2	1-1/2

## Notes:

- (a) Edge distance shall be sufficient to prevent splitting, but not less than permitted in CSAO86.
- (b) Multiple rows must be spaced 1/2 inch or more from each other and offset one-half of the tabulated minimum nailing spacing, as shown in APA PR-284C Figure 1.
- (c) Multiple rows must be equally spaced about the centerline of the edge or face (whichever applies).
- (d) Face orientation applies to nails driven into the face of the member, such that the long axis of the nail is perpendicular to the wide face of the strands. Edge orientation applies to nails driven into the edge of the member.
- (e) 16d sinker nails (0.148" x 3-1/4") may be spaced the same as the 12d common wire nails (0.14" x 3-1/4").
- (f) Nails listed are common wire nails. For box nails, the spacing and end distance requirements of the next lower penny weight common nail may be used: e.g. a 16d box nail may be spaced the same as a 10d or 12d common nail.
- (g) Nail penetration for edge nailing shall not exceed 2 inches for 16d common wire nails (0.162" x 3-1/2") and 2-1/2" for 10d and 12d nails (common or box).
- (h) Tabulated closest on-center spacing for face orientation is applicable to nails that are installed in rows parallel to the grain (length) of the member. For nails installed in rows perpendicular to the direction of the grain (width/depth) of the member, the closest on-center spacing for face orientation shall be sufficient to prevent splitting of the member.
- (i) The multiple row end spacing is 1-1/2 inches.

## DESIGN PROPERTIES EDGEWISE BENDING

TABLE 5A: SPECIFIED EDGEWISE BENDING STRENGTHS AND MODULUS OF ELASTICITY<sup>(a)</sup>

Product/Grade	Modulus of Elasticity, E <sup>(d)</sup> (psi)	Specified flexural strength, fb <sup>(b)</sup> (psi)	Specified compression perpendicular to grain, fc <sub>L</sub> <sup>(e)</sup> (psi)	Specified shear parallel to grain, fv (psi)
1.35E T-TEC LSL	1.35 X 10 <sup>6</sup>	3420 <sup>(c)</sup>	1370	580
1.55E T-TEC LSL - 1 1/8"	1.55 X 10 <sup>6</sup>	4360 <sup>(c)</sup>	1640	845
1.55E T-TEC LSL - 1 1/4" & 1 1/2"	1.55 X 10 <sup>6</sup>	4360 <sup>(c)</sup>	1640	975

- (a) The tabulated values are specified strengths and modulus of elasticity for normal load duration. All values, except E, are permitted to be adjusted for other load durations as permitted by the code. The tabulated values are limited to the dry service conditions.
- (b) Tabulated flexural stress (fb) may be increased by 4 percent when the member qualifies as a repetitive member as defined in CSA086.
- (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) Edgewise apparent modulus of elasticity. For a simple span member, deflection for a uniform load could be calculated as follows:

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

where:

$\delta_T$  = total deflection (in)  
 w = applied uniform loads (lbf/ft)  
 L = design span (ft)  
 E = modulus of elasticity (lbf/in<sup>2</sup>)  
 b = beam width (in)  
 h = beam depth (in)

- (e) The size factor for bearing, KZcp, shall be equal to 1.0.

TABLE 5B: FACTORED EDGEWISE BENDING STRENGTHS AND MODULUS OF ELASTICITY<sup>(a)</sup>

Product/Grade	Modulus of Elasticity, E <sup>(c)</sup> (psi)	Specified flexural strength, fb <sup>(b)</sup> (psi)	Specified compression perpendicular to grain, fc <sub>L</sub> <sup>(e)</sup> (psi)	Specified shear parallel to grain, fv <sup>(d)</sup> (psi)
Tolko Rim Board Plus	0.55 X 10 <sup>6</sup>	1,100	910	260

Rim Board Properties - APA Form W345 CA - 2021

- (a) All tabulated values are applicable to the standard-term load duration and permitted to be adjusted for other load durations in accordance with the applicable building code except for E.
- (b) Specified edgewise bending strength shall be permitted for engineered design of spans of 4 ft. or less. For longer spans over openings, use glulam, I-Joists or SCL headers.
- (c) Edgewise apparent modulus of elasticity. For a simple span member, deflection for a uniform load could be calculated as follows:

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

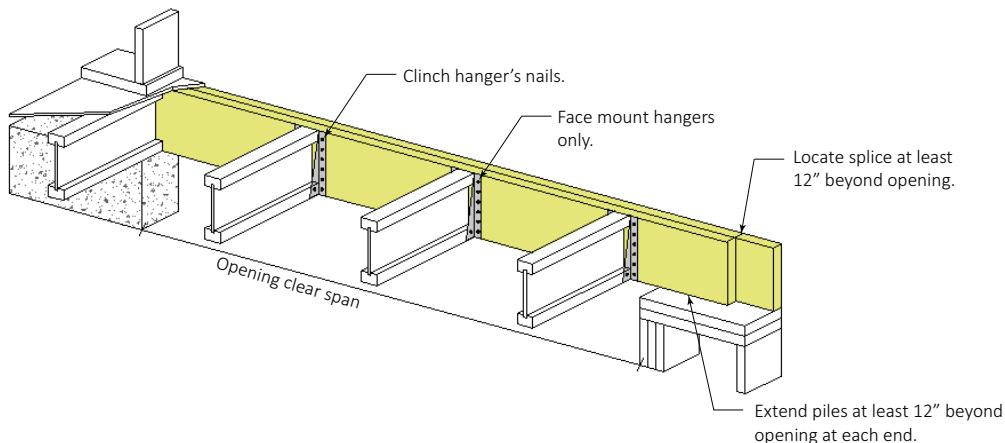
where:

$\delta_T$  = total deflection (in)  
 w = applied uniform loads (lbf/ft)  
 L = design span (ft)  
 E = modulus of elasticity (lbf/in<sup>2</sup>)  
 b = beam width (in)  
 h = beam depth (in)

- (d) Specified edgewise shear strength is permitted to be increased to 502 psi for mat-formed panels such as OSB.
- (e) Specified edgewise compressive strength perpendicular to grain at 0.04-in. deformation, which is permitted to be increased to 1,000 psi for mat-formed panel such as OSB.

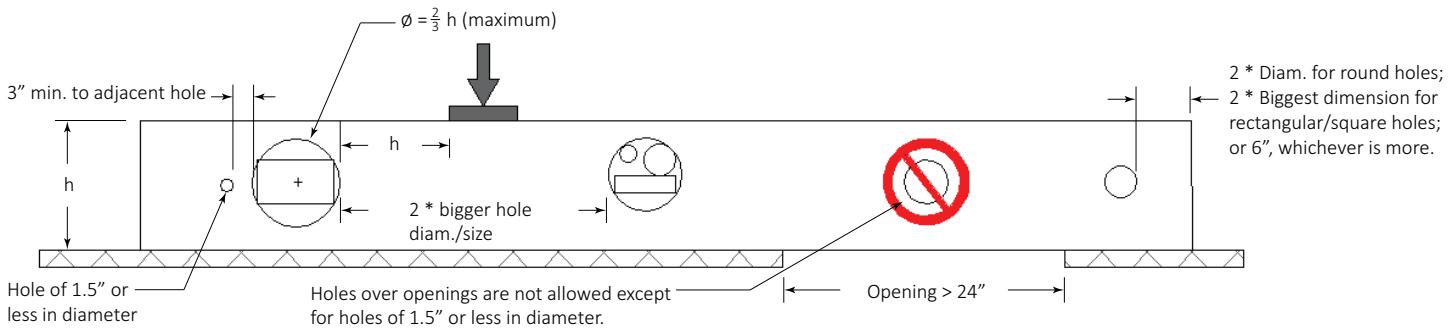
## RIM BOARD HEADER APPLICATION

FIGURE 5: HEADER APPLICATION



## ALLOWABLE HOLES

FIGURE 6: RIM BOARD HOLES SPECIFICATION



### Notes:

- 1) The maximum allowable round hole size for rim boards is limited to 2/3 of the rim board depth. Rectangular/square holes shall be circumscribed in the maximum allowable round holes, and the corners shall not be over-cut. Pre-drilling corners with a 1-inch diameter bit is recommended.
- 2) Holes should not occur in rim board installed over openings, such as doors or windows, where the rim board is not fully supported, except that holes of 1-1/2 inches or less in size are permitted provided they are positioned at the mid-depth and in the middle 1/3 of the span.
- 3) When concentrated loads are present on the rim board (loads not supported by other vertical-load-carrying members such as squash blocks), holes should not be placed in the rim board within a distance equal to the depth of the rim board from the area of loading.
- 4) For multiple holes, the clear spacing between holes should be at least two times the diameter of the larger hole, or twice the length of the longest side of the longest rectangular hole. This minimum hole spacing does not apply to holes of 1-1/2" or less in diameter, which can be placed anywhere in the rim board except that the clear distance to the adjacent hole should be 3 inches minimum.
- 5) Closely grouped holes are permitted if the group perimeter meets the requirements for the round hole.

# ALLOWABLE PLF LOADS HEADER APPLICATION

TABLE 6: ALLOWABLE PLF LOADS - RIM BOARD HEADERS TOLKO OSB RIM BOARD PLUS 1-1/8"

Product Grade	Single Ply Thickness (in)	# of plies	Depth (in)	Header Span (ft)																													
				2			3			4			5			6			8			10			12			14			16		
				Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance					
				Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)				
TOLKO RIM BOARD PLUS	1-1/8	1	7.25		1270			720			403	235		257	136		177	57	83	98													
			9.25		1620			1078			658			419	282		290	119		161	61	88	101										
			9.5		1664			1108			694			442	306		306	129		170	66	95	107										
			11.25		1970			1312			974			621			430	214		239	109		151	63	91	103	40	56	75				
		2	11.875		2080			1385			1037			693			479	252		267	129		169	74	107	116	47	66	83				
			7.25		2540			1440			807	470		514	272		355	114	167	197	58	83	123										
			9.25		3240			2157			1316			839	565		580	238		322	122	176	203	70	99	139	44	60	99				
			9.5		3328			2216			1388			885	612		612	258		340	132	191	215	76	108	146	48	65	105				
		3	11.25		3941			2624			1949			1243			860	429		479	219		303	127	182	207	80	112	150	53	72	112	
			11.875		4160			2770			2075			1386			959	504		535	258		338	149	215	232	94	132	167	63	86	125	
			14		4905			3265			2446			1929			1336			746	423		473	244		324	154	221	235	103	145	177	
			16		5605			3732			2795			2233			1747			976			619	365		426	230		309	154	220	233	
		4	7.25		3810			2246			1259	705		802	408		554	172	250	307	88	124	193	51	68	131							
			9.25		4861			3236			2053			1310	847		906	357		504	183	264	318	105	149	217	66	90	156	44	57	116	
			9.5		4992			3324			2166			1382	918		956	387		532	198	287	336	114	162	229	72	98	165	48	62	123	
			11.25		5912			3936			2948			1941			1343	643		749	329		474	190	274	324	120	168	234	80	108	176	
		4	11.875		6240			4155			3112			2163			1497	756		835	387		529	224	323	362	141	199	262	94	129	197	
			14		7357			4898			3669			2932			2085			1164	634		738	367		507	231	332	367	155	217	277	
			16		8408			5598			4193			3350			2726			1524	947		968	548		665	345		483	231	330	365	
			7.25		5080			2995			1679	940		1070	544		739	229	334	410	117	166	258	68	91	175	42	54	125				
		4	9.25		6481			4315			2738			1746	1130		1208	476		672	244	353	424	141	198	289	88	120	208	59	76	155	
			9.5		6656			4432			2889			1843	1224		1274	516		709	264	383	448	153	216	306	96	131	220	64	83	164	
			11.25		7883			5248			3931			2588			1791	858		998	439		632	254	365	432	160	224	312	107	145	234	
			11.875		8321			5540			4150			2884			1997	1009		1114	516		705	299	431	483	188	265	349	126	172	262	
		4	14		9810			6531			4892			3909			2780			1553	846		985	489		676	308	443	490	206	290	369	

TABLE 7: ALLOWABLE PLF LOADS - RIM BOARD HEADERS TOLKO OSB RIM BOARD PLUS 1-1/4"

Product Grade	Single Ply Thickness (in)	# of plies	Depth (in)	Header Span (ft)																																		
				2			3			4			5			6			8			10			12			14			16							
				Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)								
				Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)									
TOLKO RIM BOARD PLUS	1-1/4	1	7.25		1411			800			448	261		285	151		197	63	92	109																		
			9.25		1800			1198			731			466	314		322	132		179	67	98	113															
			9.5		1849			1231			771			492	340		340	143		189	73	106	119	42	60	81												
			11.25		2189			1458			1082			691			478	238		266	122		168	70	101	115	44	62	83									
			11.875		2311			1539			1152			770			533	280		297	143		188	83	119	128	52	73	93									
		2	7.25		2822			1600			896	522		571	302		394	127	185	218	65	92	137															
			9.25		3601			2397			1462			932	628		645	264		358	135	196	226	78	110	154	49	66	111									
			9.5		3698			2462			1542			984	680		680	287		378	146	213	239	85	120	163	53	72	117									
			11.25		4379			2916			2165			1382			956	476		533	244		337	141	203	230	88	124	166	59	80	125						
			11.875		4622			3078			2305			1540			1066	560		594	287		376	166	239	257	104	147	186	70	95	139						
		3	14		5450			3628			2718			2143			1484			829	470		525	272		360	171	246	261	114	161	197						
			16		6228			4147			3106			2482			1941			1085			688	406		473	255		343	171	244	259						
			7.25		4233			2496			1399	783		891	453		616	191	278	341	97	138	215	56	76	146												
			9.25		5401			3596			2282			1455	942		1006	397		560	203	294	353	117	165	241	74	100	173	49	63	129						
			9.5		5547			3693			2407			1535	1020		1062	430		591	220	319	373	127	180	255	80	109	183	53	69	137						
		4	11.25		6569			4374			3276			2156			1492	715		832	366		526	211	304	360	133	186	260	89	120	195						
			11.875		6934			4617			3458			2404			1664	840		928	430		587	249	359	402	156	221	291	105	143	219						
			14		8175			5443			4077			3257			2316			1294	705		820	408		563	257		369	408	172	241	308					
			16		9343			6220			4659			3723			3029			1693	1053		1075	609		739	383		537	257	366	405						
			7.25		5644			3328			1866	1045		1189	604		821	255	371	455	130	184	286	75	102	194	47	60	139									
			9.25		7202			4795			3042			1940	1256		1342	529		747	271	392	471	157	221	322	98	133	231	66	84	173						
			9.5		7396			4924			3210			2047	1360		1416	574		788	293	426	498	170	240	340	107	145	245	71	92	183						
			11.25		8759			5832			4368			2875			1990	953		1109	488		702	282	406	481	177	249	347	119	161	260						
			11.875		9245			6156			4611			3205			2218	1121		1238	574		783	332	479	537	209	295	388	140	191	292						
			14		10900			725																														

TABLE 9: ALLOWABLE PLF LOADS - RIM BOARD HEADERS TOLKO 1.35E T-TEC LSL 1-1/2"

Product Grade	Single Ply Thickness (in)	# of plies	Depth (in)	Header Span (ft)																												
				2			3			4			5			6			8			10			12			14				
				Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)					
				Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)						
1.35E T-TEC LSL	1-1/2	1	7.25		3782			2520	1489		1791	762	1140	1145	441	658	794	186	275	444	95	139	283	55	79	195						
			9.25		3903			2600		1949			1558	916		1255	386	575	703	198	292	448	114	167	309	72	103	226	48	68	171	
			9.5		3903			2600		1948			1558	993		1297	418	623	739	214	317	471	124	181	325	78	112	237	52	74	180	
			11.25		3902			2599		1947			1556			1296	695		970	356	529	648	206	303	448	129	189	327	86	125	249	
			11.875		3902			2599		1947			1556			1296	818		970	418	622	717	242	358	496	152	223	362	102	147	276	
		2	7.25		7565			5041	2979		3583	1525	2281	2290	882	1317	1588	372	551	889	190	279	566	110	158	390	69	97	284	46	63	216
			9.25		7807			5201		3898			3116	1833		2510	773	1151	1407	396	585	896	229	335	619	144	207	452	96	136	343	
			9.5		7806			5200		3897			3116	1986		2594	837	1247	1479	428	634	942	248	363	651	156	225	475	104	148	361	
			11.25		7804			5198		3895			3113			2592	1391		1941	712	1058	1296	412	607	896	259	378	655	173	250	498	
			11.875		7804			5198		3895			3113			2592	1636		1940	837	1245	1435	484	716	992	305	446	725	204	295	552	
			14		7801			5195		3892			3110			2589			1938	1372		1547	794	1178	1286	500	737	990	335	489	754	
			16		7799			5193		3890			3108			2587			1935			1544	1186		1284	746		1098	500	735	958	
		3	7.25		11348			7561	4468		5591	2288	3421	3573	1324	1975	2477	558	827	1388	286	418	883	165	238	609	104	146	444	69	94	337
			9.25		11710			7801		5847			4674	2750		3892	1160	1727	2195	594	877	1399	343	502	966	216	311	706	145	204	536	
			9.5		11710			7801		5846			4674	2979		3892	1256	1871	2308	643	951	1471	372	545	1016	234	338	742	157	222	564	
			11.25		11707			7798		5843			4670			3889	2087		2911	1068	1587	2023	618	911	1399	389	568	1022	260	375	778	
			11.875		11706			7797		5842			4669			3888	2454		2910	1256	1868	2240	727	1074	1549	458	670	1132	306	443	862	
			14		11702			7793		5838			4666			3884			2907	2059		2320	1191	1768	1929	750	1106	1546	502	734	1178	
		4	7.25		15131			10082	5958		7454	3050	4562	4764	1765	2634	3303	744	1103	1850	381	558	1178	220	317	813	138	194	592	93	126	449
			9.25		15614			10402		7796			6232	3666		5190	1546	2302	2927	792	1170	1865	458	670	1289	288	415	941	193	272	715	
			9.5		15613			10401		7795			6232	3972		5189	1675	2495	3078	857	1269	1962	496	726	1355	312	451	990	209	296	752	
			11.25		15609			10397		7791			6227			5185	2782		3882	1424	2116	2698	824	1215	1865	519	757	1363	347	500	1037	
			11.875		15608			10396		7790			6226			5184	3272		3881	1675	2491	2987	969	1432	2066	610	893	1510	409	591	1150	
			14		15603			10391		7785			6221			5179			3876	2745		3094	1589	2357	2573	100						

TABLE 11: ALLOWABLE PLF LOADS - RIM BOARD HEADERS TOLKO 1.55E T-TEC LSL 1-1/8"

Product Grade	Single Ply Thickness (in)	# of plies	Depth (in)	Header Span (ft)																													
				2			3			4			5			6			8			10			12			14			16		
				Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)			
				Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)	Live Load (PLF)	Live Load (PLF)	Total Load (PLF)				
1.55E T-TEC LSL	1-1/8	1	7.25		2928			1951	1282		1462	656	982	1095	380	567	760	160	237	426	82	120	271	47	68	187							
			9.25		2927			1950			1461			1168	789		973	333	496	673	170	252	429	98	144	297	62	89	217	41	59	165	
			9.5		2927			1950			1461			1168	855		973	360	537	708	184	273	451	106	156	312	67	97	228	45	64	173	
			11.25		2926			1949			1460			1167			972	599		727	306	456	581	177	262	429	111	163	314	74	108	239	
			11.875		2926			1949			1460			1167			972	704		727	360	536	581	208	308	476	131	193	348	88	127	265	
		2	7.25		5857			3902	2565		2925	1313	1965	2191	760	1135	1520	320	475	852	164	241	543	95	137	375	59	84	274	40	55	208	
			9.25		5855			3900			2923			2337	1578		1946	666	992	1347	341	504	859	197	289	594	124	179	434	83	118	330	
			9.5		5855			3900			2923			2337	1710		1946	721	1075	1417	369	547	903	213	313	625	134	195	457	90	128	347	
			11.25		5853			3899			2921			2335			1944	1198		1455	613	912	1162	355	524	859	223	327	629	149	216	479	
			11.875		5853			3898			2921			2334			1944	1409		1455	721	1073	1162	417	617	952	262	386	696	176	255	531	
			14		5851			3896			2919			2333			1942			1453			1160	684		964	430	636	825	288	423	720	
			16		5849			3894			2917			2331			1940			1451			1158			963	643		823	430	635	718	
		3	7.25		8785			5853	3848		4388	1970	2947	3419	1140	1702	2371	481	713	1329	246	361	847	142	206	585	89	126	427	60	82	325	
			9.25		8783			5851			4385			3505	2368		2919	999	1488	2102	511	757	1341	296	434	927	186	269	678	124	177	516	
			9.5		8782			5850			4385			3505	2565		2919	1082	1613	2186	554	821	1410	320	470	975	201	292	713	135	192	543	
			11.25		8780			5848			4382			3503			2916	1797		2183	920	1368	1744	532	786	1342	335	491	982	224	325	748	
			11.875		8779			5847			4381			3502			2916	2113		2183	1082	1610	1743	626	926	1450	394	579	1087	264	383	829	
			14		8776			5845			4379			3499			2913			2180			1740	1026		1447	646	954	1237	432	634	1080	
			16		8774			5842			4376			3496			2910			2177			1737			1444	964		1235	646	952	1078	
		4	7.25		11714			7805	5130		5850	2627	3930	4559	1520	2270	3162	641	951	1773	328	482	1130	190	274	781	119	169	570	80	110	433	
			9.25		11710			7801			5847			4674	3157		3892	1332	1985	2803	682	1009	1788	394	579	1237	248	359	904	166	236	688	
			9.5		11710			7801			5846			4674	3420		3892	1443	2151	2915	738	1094	1880	427	627	1300	269	390	951	180	257	724	
			11.25		11707			7798			5843			4670			3889	2396		2911	1226	1824	2325	710	1049	1789	447	654	1309	299	433	997	
			11.875		11706			7797			5842			46																			

TABLE 13: ALLOWABLE PLF LOADS - RIM BOARD HEADERS TOLKO 1.55E T-TEC LSL 1-1/2"

Product Grade	Single Ply Thickness (in)	# of plies	Depth (in)	Header Span (ft)																																							
				2				3				4				5				6				8				10				12				14				16			
				Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance		Factored Total Load (PLF)	Unfactored Deflection Resistance						
				Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)		Live Load (PLF)	Total Load (PLF)								
1.55E T-TEC LSL 1-1/2	1	7.25	3904			2601	1710		1950	875	1310	1461	506	756	1013	213	317	568	109	160	362	63	91	250																			
			9.25			3903			2600			1949			1558	1052		1297	444	661	898	227	336	573	131	193	396	82	119	289	55	78	220										
			9.5			3903			2600			1948			1558	1140		1297	481	717	944	246	364	602	142	209	416	89	130	304	60	85	231										
			11.25			3902			2599			1947			1556			1296	798		970	408	608	775	236	349	573	149	218	419	99	144	319										
			11.875			3902			2599			1947			1556			1296	939		970	481	715	774	278	411	634	175	257	464	117	170	354										
		2	7.25			7809			5203	3420		3900	1751	2620	2922	1013	1513	2026	427	634	1136	218	321	724	126	183	500	79	112	365	53	73	277										
			9.25			7807			5201			3898			3116	2104		2595	888	1323	1796	454	673	1146	263	386	792	165	239	579	111	157	441										
			9.5			7806			5200			3897			3116	2280		2594	962	1434	1889	492	729	1205	285	418	833	179	260	609	120	171	463										
			11.25			7804			5198			3895			3113			2592	1597		1941	817	1216	1550	473	699	1146	298	436	838	199	288	639										
		3	11.875			7804			5198			3895			3113			2592	1878		1940	962	1431	1549	556	823	1269	350	514	929	234	341	708										
			14			7801			5195			3892			3110			2589			1938			1547	912		1286	574	848	1100	384	564	960										
			16			7799			5193			3890			3108			2587			1935			1544			1284	857		1098	574	846	1098										
			7.25			11714			7805	5130		5850	2627	3930	4559	1520	2270	3162	641	951	1773	328	482	1130	190	274	781	119	169	570	80	110	433										
		4	9.25			11710			7801			5847			4674	3157		3892	1332	1985	2803	682	1009	1788	394	579	1237	248	359	904	166	236	688										
			9.5			11710			7801			5846			4674	3420		3892	1443	2151	2915	738	1094	1880	427	627	1300	269	390	951	180	257	724										
			11.25			11707			7798			5843			4670			3889	2396		2911	1226	1824	2325	710	1049	1789	447	654	1309	299	433	997										
			11.875			11706			7797			5842			4669			3888	2818		2910	1443	2147	2324	835	1235	1933	525	772	1450	352	511	1105										
		4	14			11702			7793			5838			4666			3884			2907			2320	1368		1929	861	1272	1650	577	846	1441										
			16			11698			7789			5835			4662			3880			2903			2317			1926	1286		1647	861	1270	1437										
			7.25			15618			10406	6841		7800	3502</																														

## MULTIPLE MEMBER CONNECTIONS: TOP LOADED MEMBERS

TABLE 14: MULTIPLE MEMBER CONNECTIONS: TOP LOADED MEMBERS (1.35E &amp; 1.55E LSL)

Ply Thickness (in.)	# of Plies	Fastener Type	Depth (in.)	# Rows	On-Center Spacing (in.)	Location	Min. Edge Distance (in.)	Min. End Distance (in.)	Min. Distance Between Rows of Fasteners (in.)	
1 1/8, 1 1/4	2	8d box nail (0.113" x 2.5")	7 1/4	2	12	One side (front or back)	1.5	3	3	
			9 1/4, 9 1/2, 11 1/4, 11 7/8	3						
			14, 16	4						
	3		7 1/4	2	12	Both side (front and back) - stagger nails on the opposite side by 6"	1.5	3	3	
			9 1/4, 9 1/2, 11 1/4, 11 7/8	3						
			14, 16	4						
1 1/8	4	SDW22438	7 1/4, 9 1/4, 9 1/2	2	12	One side (front or back)	1.5	6	4	
			11 1/4, 11 7/8, 14	3						
			16	4						
1 1/4	4	SDW22500, WS5, WSWH5	7 1/4, 9 1/4, 9 1/2	2	12	One side (front or back)	1.5	6	4	
			11 1/4, 11 7/8, 14	3						
			16	4						
1 1/2	2	10d box nail (0.128" x 3")	7 1/4	2	12	One side (front or back)	1.5	3	3	
			9 1/4, 9 1/2, 11 1/4, 11 7/8	3						
			14, 16	4						
	3		7 1/4	2	12	Both side (front and back) - stagger nails on the opposite side by 6"	1.5	3	3	
			9 1/4, 9 1/2, 11 1/4, 11 7/8	3						
			14, 16	4						
1 3/4	4	SDW22600, WS6, WSWH6	7 1/4, 9 1/4, 9 1/2	2	12	One side (front or back)	1.5	6	4	
			11 1/4, 11 7/8, 14	3						
			16	4						
	2		7 1/4	2	12	One side (front or back)	1.5	3	3	
			9 1/4, 9 1/2, 11 1/4, 11 7/8	3						
			14, 16	4						
1 3/4	3		7 1/4	2	12	Both side (front and back) - stagger nails on the opposite side by 6"	1.5	3	3	
			9 1/4, 9 1/2, 11 1/4, 11 7/8	3						
			14, 16	4						
	4		7 1/4, 9 1/4, 9 1/2	2	12	One side (front or back)	1.5	6	4	
			11 1/4, 11 7/8, 14	3						
			16	4						

Note:

- Top Loads (uniform or concentrated) must be applied evenly across the entire total width. Otherwise, the side-loaded connections (uniform or concentrated) shall be used.

# MULTIPLE MEMBER CONNECTIONS: MAX. FACTORED UNIFORM SIDE LOADS

TABLE 15: MULTIPLE MEMBER CONNECTIONS: MAX. FACTORED UNIFORM SIDE LOADS - NAILS

Assembly A			Assembly B		Assembly A		Assembly B		Assembly A		Assembly B	
Fastener type			8d Box Nail (0.113" x 2.5")			10d Box Nail (0.128" x 3")			16d Box Nail (0.135" x 3.5")			
Side member thickness			1-1/8" or 1-1/4"			1-1/8" or 1-1/4"			1-1/2"			
Main member thickness			1-1/8" or 1-1/4"			1-1/2"			1 3/4"			
Min. depth (in.)	# of Rows	Fastener o.c. spacing (in.)	Max. Allowable Uniform Side Loads (PLF)									
7.25	2	12	400	300	500	375	560	420				
9.25	3	12	600	450	750	565	840	630				
14	4	12	800	600	1000	750	1120	840				

Tabulated values shall not be increased for a load duration  $K_D > 1.0$ .

## Min. nails distances:

- 1) Min. nail edge distance = 1.5"
- 2) Min. nail end distance = 3"
- 3) Min. distance between rows of nails = 3"
- 4) Min. distance between nails in a row = 6"
- 5) Nails staggering distance = o.c. spacing/2
- 6) For other nails o.c. spacings, multiply the tabulated PLF load by 12/o.c. spacing (max. fasteners o.c. spacing = 24")
- 7) For three-ply members (Assembly B), min. o.c. spacing = 12"

TABLE 16: MULTIPLE MEMBER CONNECTIONS: MAX. FACTORED UNIFORM SIDE LOADS - SIMPSON STRONG-DRIVE® SDW SCREWS

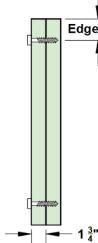
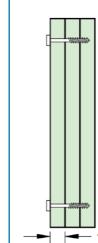
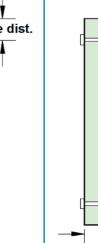
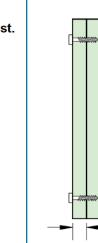
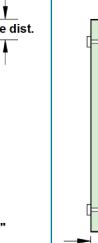
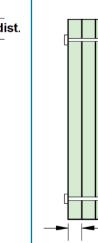
Assembly A			Assembly B		Assembly F		Assembly A		Assembly B		Assembly F		Assembly F	
Fastener type			SDW22338	SDW22500	SDW22634	SDW22300	SDW22458	SDW22600	SDW22500	SDW22438				
Fastener nominal length (in.)			3 3/8	5	6 3/4	3	4 5/8	6	5	4.375				
Side member thickness			1 3/4"	1 3/4"	1 3/4"	1 1/2"	1 1/2"	1 1/2"	1 1/4"	1 1/8"				
Main member thickness			1 3/4"	1 3/4"	1 3/4"	1 1/2"	1 1/2"	1 1/2"	1 1/4"	1 1/8"				
Min. depth (in.)	# of Rows	Fastener o.c. spacing (in.)	Max. Allowable Uniform Side Loads (PLF)											
7.25	2	12	1265	1070	950	1220	1200	1095	795	730				
11.25	3	12	1895	1605	1425	1830	1800	1640	1190	1095				
16	4	12	2530	2135	1900	2440	2395	2190	1585	1460				

Tabulated values shall not be increased for a load duration  $K_D > 1.0$ .

## Min. screws distances:

- 1) Min. fastener edge distance = 1.5"
- 2) Min. fastener end distance = 6"
- 3) Min. distance between rows of fasteners = 4"
- 4) Fasteners staggering distance = o.c. spacing/2
- 5) For other fasteners o.c. spacings, multiply the tabulated PLF load by 12/o.c. spacing (max. fasteners o.c. spacing = 24")
- 6) Fasteners installed on one side only

TABLE 17: MULTIPLE MEMBER CONNECTIONS: MAX. FACTORED UNIFORM SIDE LOADS - MITEK MIFLK SCREWS

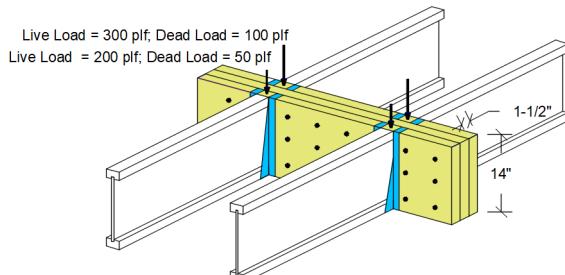
			Assembly A	Assembly B	Assembly F	Assembly A	Assembly B	Assembly F	Assembly F	Assembly F
										
			Fastener type	MIFLK312	MIFLK005	MIFLK634	MIFLK278	MIFLK412	MIFLK22600	MIFLK005
Fastener nominal length (in.)			3 1/2	5	6 3/4	3	4 5/8	6		
Side member thickness			1 3/4"	1 3/4"	1 3/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/4"
Main member thickness			1 3/4"	1 3/4"	1 3/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/4"
Min. depth (in.)	# of Rows	Fastener o.c. spacing (in.)	Max. Allowable Uniform Side Loads (PLF)							
7.25	2	12	1540	1200	1060	1180	1005	895	690	
11.25	3	12	2310	1800	1590	1770	1505	1340	1030	
16	4	12	3080	2400	2120	2360	2005	1785	1375	

Tabulated values shall not be increased for a load duration KD > 1.0

Min. screws distances:

- 1) Min. fastener edge distance = 1.5"
- 2) Min. fastener end distance = 6"
- 3) Min. distance between rows of fasteners = 4"
- 4) Fasteners staggering distance = o.c. spacing/2
- 5) For other fasteners o.c. spacings, multiply the tabulated PLF load by 12/o.c. spacing (max. fasteners o.c. spacing = 24")
- 6) Fasteners installed on one side only

FIGURE 7: UNIFORM SIDE LOAD DESIGN EXAMPLE



#### Note:

- 1) Verify that a 3-ply, 1-1/2" x 14" header can support the total factored load of  $1.5 \times 300 + 1.25 \times 100 = 575$  PLF with proper live and total deflection criteria.
- 2) The actual factored uniform load applied to the outer ply member is 575 PLF.
- 3) Three 1-1/2" plies (Assembly B), 3 rows of 10d Box nails (0.128" x 3") at 12" o.c. spacing fastened on both sides (face and back) are good for 750 PLF factored uniform side load. Therefore, use 3 rows of 10d Box nails (0.128" x 3") at 12" o.c. spacing.
- 4) Since nails are required on both sides (face and back) for 3-ply members, stagger fasteners on the back side by half the distance between the fasteners on the face side.
- 5) Verify hanger capacity. Capacity reduction may be required for the selected header thickness. Refer to hanger manufacturer for appropriate reductions.

# MULTIPLE MEMBER CONNECTIONS: MAX. FACTORED CONCENTRATED SIDE LOADS

TABLE 18: MULTIPLE MEMBER CONNECTIONS: MAX. FACTORED CONCENTRATED SIDE LOADS - NAILS

		Assembly A	Assembly A	Assembly A	Assembly B
Fastener type		8d Box Nail (0.113" x 2.5")	10d Box Nail (0.128" x 3")	16d Box Nail (0.135" x 3.5")	
Side member thickness		1 1/8" or 1 1/4"	1 1/2"	1 3/4"	1 3/4"
Main member thickness		1 1/8" or 1 1/4"	1 1/2"	1 3/4"	1 3/4"
Min. depth (in.)	Total # of Fasteners	Max. Allowable Uniform Side Loads (PLF)			
7.25	6	1200	1500	1680	1260
9.25	8	1600	2000	2240	1680
9.5	12	2400	3000	3360	2520
11.25	16	3200	4000	4480	3360
14	18	3600	4500	5040	3780
16	24	4800	6000	6720	5040

Tabulated values shall not be increased for a load duration KD > 1.0

FIGURE 8: 6 NAILS

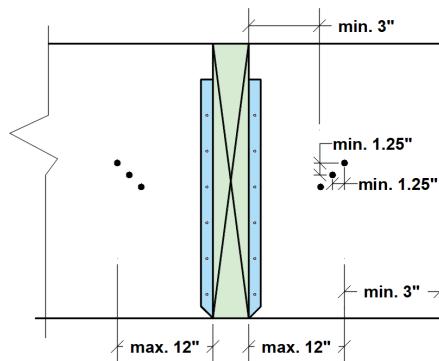


FIGURE 9: 8 NAILS

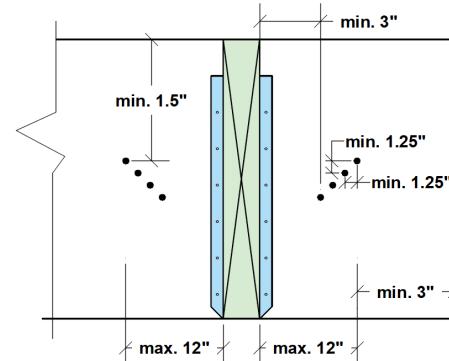


FIGURE 10: 12 NAILS

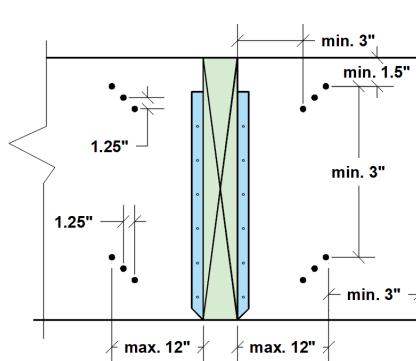


FIGURE 11: 16 NAILS

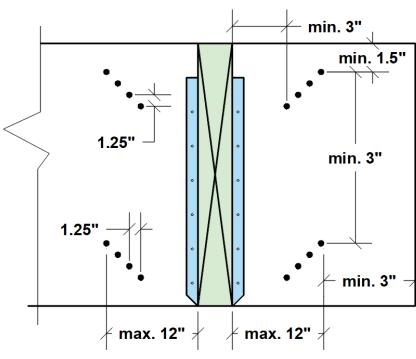


FIGURE 12: 18 NAILS

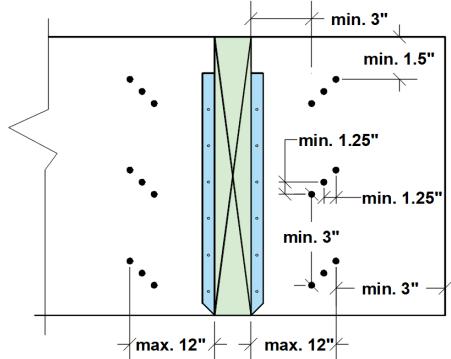


FIGURE 13: 24 NAILS

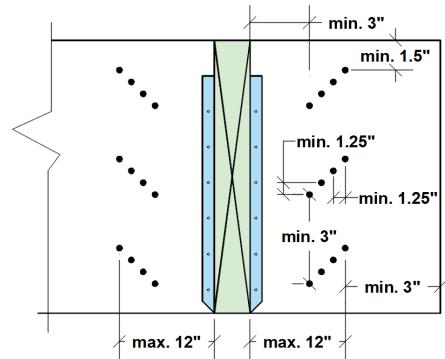
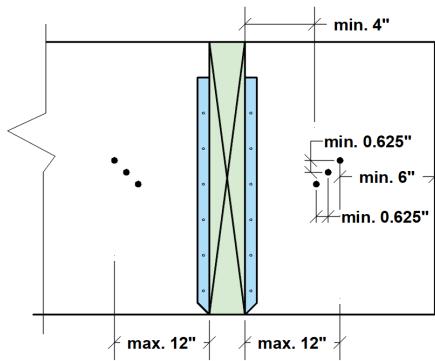


TABLE 19: MULTIPLE MEMBER CONNECTIONS: MAX. FACTORED CONCENTRATED SIDE LOADS - SIMPSON SDW SCREWS

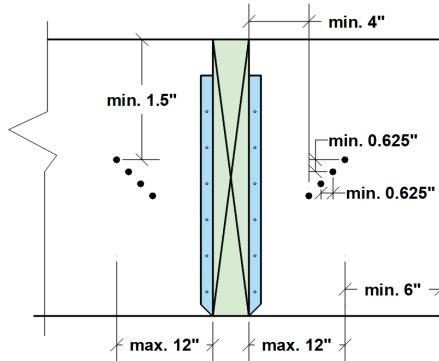
	Assembly A	Assembly B	Assembly F	Assembly A	Assembly B	Assembly F	Assembly F	Assembly F	
Fastener type	SDW22338	SDW22500	SDW22634	SDW22300	SDW22458	SDW22600	SDW22500	SDW22438	
Fastener nominal length (in)	3 3/8	5	6 3/4	3	4 5/8	6	5	4.375	
Side Member Thickness	1 3/4"	1 3/4"	1 3/4"	1 1/2"	1 1/2"	1 1/2"	1 1/4"	1 1/8"	
Main Member Thickness	1 3/4"	1 3/4"	1 3/4"	1 1/2"	1 1/2"	1 1/2"	1 1/4"	1 1/8"	
Min. depth (in.)	Total # of Fasteners	Max. Allowable Uniform Side Loads (PLF)							
7.25	6	3790	3205	2850	3660	3595	3280	2375	2190
9.25	8	5055	4270	3795	4880	4790	4375	3165	2920
9.5	12	7580	6405	5695	7320	7185	6560	4745	4375
11.25	16	10105	8540	7590	9760	9575	8750	6325	5835
14	18	11370	9605	8540	10980	10775	9840	7115	6560

Tabulated values shall not be increased for a load duration KD > 1.0

FIGURE 14: 6 SDW SCREWS



**FIGURE 15:** 8 SDW SCREWS



**FIGURE 16:** 12 SDW SCREWS

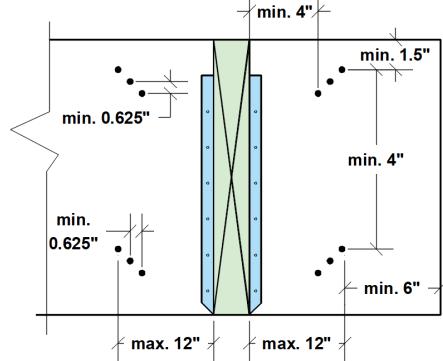


FIGURE 17: 16 SDW SCREWS

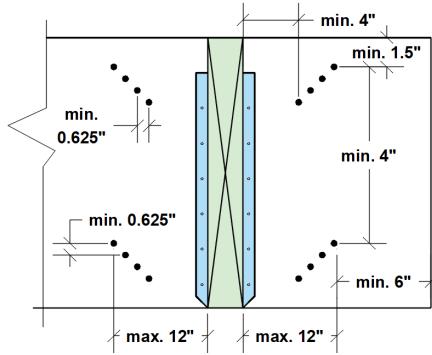


FIGURE 18: 18 SDW SCREWS

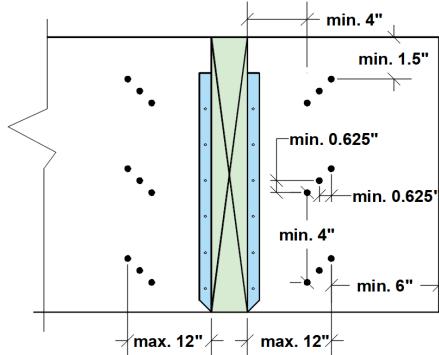


TABLE 20: MULTIPLE MEMBER CONNECTIONS: MAX. FACTORED CONCENTRATED SIDE LOADS - MITEK MIFLK SCREWS

		Assembly A	Assembly B	Assembly F	Assembly A	Assembly B	Assembly F	Assembly F
Fastener type		MIFLK312	MIFLK005	MIFLK634	MIFLK278	MIFLK412	MIFLK22600	MIFLK005
Fastener nominal length (in)		3 1/2	5	6 3/4	3	4 5/8	6	5
Side Member Thickness		1 3/4"	1 3/4"	1 3/4"	1 1/2"	1 1/2"	1 1/2"	1 1/4"
Main Member Thickness		1 3/4"	1 3/4"	1 3/4"	1 1/2"	1 1/2"	1 1/2"	1 1/4"
Min. depth (in.)	Total # of Fasteners	Max. Allowable Uniform Side Loads (PLF)						
7.25	6	4620	3600	3180	3540	3010	2675	2060
9.25	8	6160	4800	4240	4720	4010	3565	2745
9.5	12	9240	7200	6360	7080	6015	5345	4115
11.25	16	12320	9600	8480	9440	8020	7130	5490
14	18	13860	10800	9540	10620	9020	8020	6175

Tabulated values shall not be increased for a load duration KD > 1.0

FIGURE 19: 6 MIFLK SCREWS

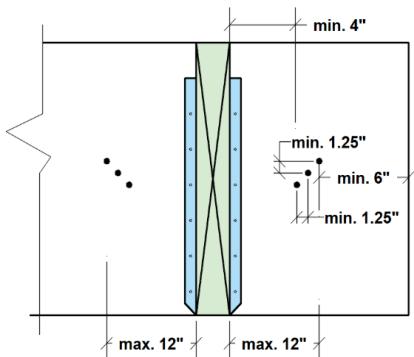


FIGURE 20: 8 MIFLK SCREWS

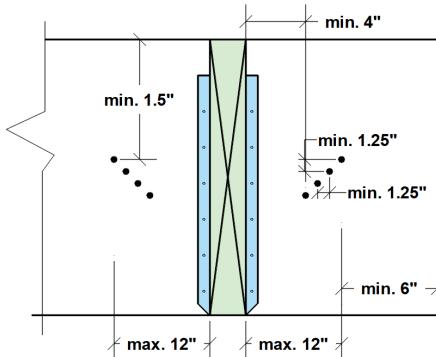


FIGURE 21: 12 MIFLK SCREWS

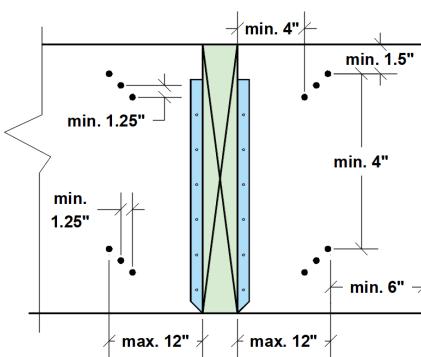


FIGURE 22: 16 MIFLK SCREWS

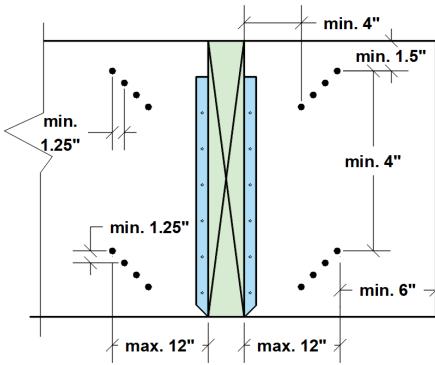


FIGURE 23: 18 MIFLK SCREWS

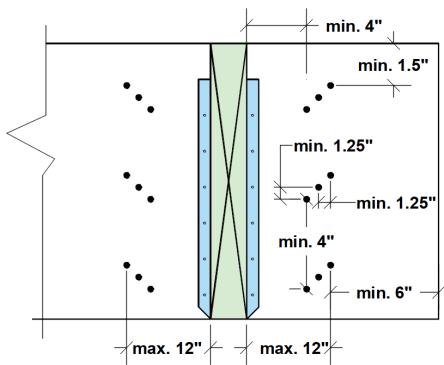
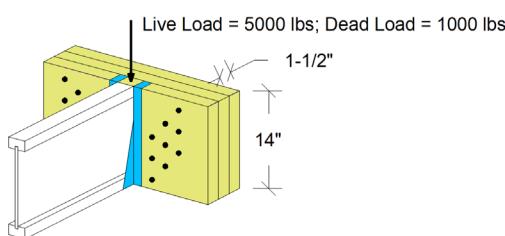


FIGURE 24: CONCENTRATED SIDE LOAD EXAMPLE



## Note:

- 1) Verify that a 3-ply, 1-1/2" x 14" header can support a factored concentrated side load of  $1.5 \times 5000 + 1.25 \times 1000 = 8750$  lbs and all other loads applied.
- 2) The concentrated factored side load of 8750 lbs is transferred to the header with a face mount hanger.
- 3) For an assembly of three 1-1/2" plies (Assembly B), 18 - MIFLK005 screws are good for 10800 lbs.
- 4) Verify hanger capacity. Capacity reduction may be required for the selected header thickness. Refer to hanger manufacturer for appropriate reductions.

# 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](http://www.apawood.org).

## SAFE HANDLING DURING DISTRIBUTION

1. 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.
2. Follow good forklift safety procedures when handling T-TEC LSL and Tolko LSL Industrials at the yard.
3. Store longest material lowest to the ground.
4. When handling with a crane, pick up the load using a spreader if necessary to minimize handling stresses.
5. 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](http://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/](http://csdsoftware.com/csd/software/)

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- 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

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- Analyze anytime for quick results and guidance
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- Create flexible and detailed plot layouts
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## ACCESS THE CSD SOFTWARE

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



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isDesign®

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