

Client: Weaver Development Project: The Nicholson

Address:

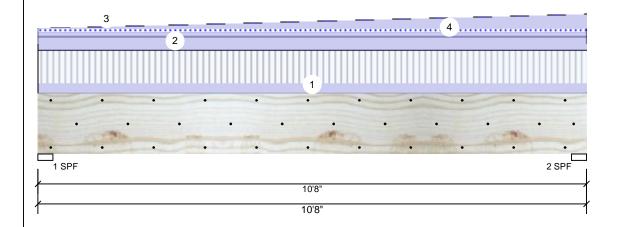
Date: 10/24/2022 Input by: Christine Shivy Job Name: Nicholson The Nicholson

Project #:

1.750" X 14.000" **Kerto-S LVL** BM<sub>1</sub>

2-Ply - PASSED

Level: Level



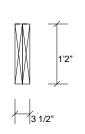
Floor

ASD

No

**IBC/IRC 2015** 

Not Checked



Page 1 of 1

### Member Information

Type:	Giraer
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal - II
Taman a satura.	Tames . 40

Temperature: Temp <= 100°F

## Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1600	1698	213	0	0
2	Vertical	1600	1938	213	0	0

## **Bearings**

Bearing	Length	Dir.	Cap. I	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	63%	1698 / 1600	3298	L	D+L
2 - SPF	3.500"	Vert	68%	1938 / 1600	3538	L	D+L

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	8351 ft-lb	5'5"	26999 ft-lb	0.309 (31%)	D+L	L
Unbraced	8351 ft-lb	5'5"	10599 ft-lb	0.788 (79%)	D+L	L
Shear	3001 lb	9'2 1/2"	10453 lb	0.287 (29%)	D+L	L
LL Defl inch	0.055 (L/2228)	5'4"	0.255 (L/480)	0.215 (22%)	L	L
TL Defl inch	0.117 (L/1043)	5'4 3/8"	0.340 (L/360)	0.345 (35%)	D+L	L

Application:

Design Method:

**Building Code:** 

Load Sharing:

Deck:

# **Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.

8 Lateral siende	erness ratio based on single	piy wiath.								
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Near Face	100 PLF	300 PLF	0 PLF	0 PLF	0 PLF	F1A
2	Uniform			Тор	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Wall Load
3	Tapered Start	0-0-0		Тор	0 PLF	0 PLF	0 PLF	0 PLF	0 PLF	A1GE
	End	10-8-0			130 PLF	0 PLF	0 PLF	0 PLF	0 PLF	
4	Uniform			Тор	40 PLF	0 PLF	40 PLF	0 PLF	0 PLF	2'-0" Roof Load
	Self Weight				11 PLF					

## Notes

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- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled
  Refer to manufacturer's product information requirements, multi-ply fastening details, beam strength values, and code approvals
  Damaged Beams must not be used
- Design assumes top edge is laterally restrained
  Provide lateral support at bearing points to avoid
  lateral displacement and rotation
- 6. For flat roofs provide proper drainage to prevent ponding

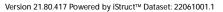
Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us

Manufacturer Info

Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS



This design is valid until 11/3/2024







Client: Weaver Development Project:

Address:

The Nicholson The Nicholson Date: 10/24/2022

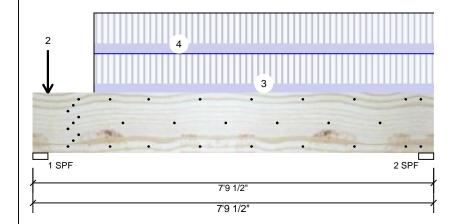
Input by: Christine Shivy Job Name: Nicholson

Project #:

**Kerto-S LVL** 1.750" X 14.000" BM<sub>2</sub>

2-Ply - PASSED

Level: Level



Application:

Design Method:

**Building Code:** 

Load Sharing:

Deck:

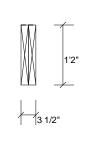
Floor

ASD

No

**IBC/IRC 2015** 

Not Checked



Page 1 of 1

# Member Information

Туре: Girder Plies: 2 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal - II

Temperature: Temp <= 100°F

## Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	3644	1261	0	0	0
2	Vertical	2679	939	0	0	0

## **Bearings**

Bearing	Length	Dir.	Cap. R	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	94%	1261 / 3644	4905	L	D+L
2 - SPF	3.500"	Vert	70%	939 / 2679	3619	L	D+L

### Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6133 ft-lb	3'11 1/2"	26999 ft-lb	0.227 (23%)	D+L	L
Unbraced	6133 ft-lb	3'11 1/2"	13870 ft-lb	0.442 (44%)	D+L	L
Shear	3460 lb	1'5 1/2"	10453 lb	0.331 (33%)	D+L	L
LL Defl inch	0.038 (L/2320)	3'11 1/8"	0.183 (L/480)	0.207 (21%)	L	L
TL Defl inch	0.051 (L/1717)	3'11 1/8"	0.244 (L/360)	0.210 (21%)	D+L	L

## **Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is present.
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.

8 Lateral sieriderness ratio based on single pry width.										
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Point	0-3-8		Near Face	306 lb	917 lb	0 lb	0 lb	0 lb	F3A
2	Point	0-3-8		Far Face	264 lb	790 lb	0 lb	0 lb	0 lb	F2A
3	Part. Uniform	1-2-4 to 7-9-8		Near Face	115 PLF	344 PLF	0 PLF	0 PLF	0 PLF	F3
4	Part. Uniform	1-2-4 to 7-9-8		Far Face	119 PLF	355 PLF	0 PLF	0 PLF	0 PLF	F2
	Self Weight				11 PLF					

### Notes

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  Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
  Provide lateral support at bearing points to avoid
  lateral displacement and rotation
- 6. For flat roofs provide proper drainage to prevent ponding

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The Nicholson

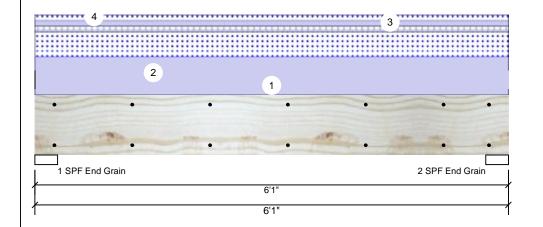
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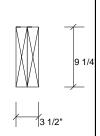
Job Name: Nicholson

Project #:

1.750" X 9.250" 2-Ply - PASSED Level: Level F. Room Window Hdr. **Kerto-S LVL** 

Address:





Page 1 of 1

Member Information								
Type:	Girder							
Plies:	2							
Moisture Condition:	Dry							
Deflection LL:	480							
Deflection TL:	360							
Importance:	Normal - II							
Temperature:	Temp <= 100°F							

Application: Design Method: ASD **Building Code: IBC/IRC 2015** Load Sharing: No Deck: Not Checked

Reactions UNPATTERNED lb (Uplift)												
Brg	Direction	Live	Dead	Snow	Wind	Const						
1	Vertical	122	1375	928	0	0						
2	Vertical	122	1375	928	0	0						

### Analysis Results Analysis Actual Comb. Case Location Allowed Capacity 3' 1/2" 14423 ft-lb Moment 2995 ft-lb 0.208 (21%) D+S L Unbraced 2995 ft-lb 3' 1/2" 10944 ft-lb 0.274 (27%) D+S L 1504 lb 1' 3/4" 7943 lb 0.189 (19%) D+S Shear ī LL Defl inch 0.019 (L/3521) 3' 1/2" 0.141 (L/480) 0.136 (14%) S TL Defl inch 0.048 (L/1418) 3' 1/2" 0.188 (L/360) 0.254 (25%) D+S

## Bearings

Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. 1 - SPF 3.500" Vert 1375 / 928 2303 L D+S End Grain D+S 2 - SPF 3.500" Vert 22% 1375 / 928 2303 L End Grain

## **Design Notes**

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- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width.

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ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Uniform			Тор	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Load	
2	Uniform			Тор	249 PLF	0 PLF	249 PLF	0 PLF	0 PLF	A1	
3	Uniform			Тор	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	1'-0" Floor Load	
4	Uniform			Тор	56 PLF	0 PLF	56 PLF	0 PLF	0 PLF	M1	
	Self Weight				7 PLF						

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Address:

The Nicholson The Nicholson Date: 10/24/2022

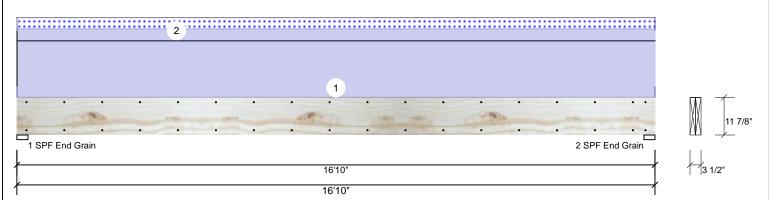
Input by: Christine Shivy Job Name: Nicholson

Project #:

**Kerto-S LVL** 1.750" X 11.875" **GDH** 

2-Ply - PASSED

Level: Level



Member Info	ormation						Reacti	ion	s UNPA	ATTERN	NED II	o (Uplift)			
Type:	Girder		Applicat	ion:	Floor		Brg [	Dire	ction	Live		Dead	Snow	Wind	Cons
Plies:	2		Design I	Method:	ASD		1 1	Verti	cal	C	)	2098	337	0	
Moisture Condi	tion: Dry		Building	Code:	IBC/IRC 2015		2 \	Verti	cal	C	)	2098	337	0	
Deflection LL:	480		Load Sh	aring:	No		-								
Deflection TL:	360		Deck:		Not Checked										
Importance:	Normal - II														
Temperature:	Temp <= 10	0°F					Bearin	<u> </u>	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb
Analysis Res	ults						1 - SF End Grain		3.500"	Vert	24%	2098 / 337	2434	L	D+S
	Actual	Location	Allowed	Capacity	Comb.	Case	2 - SF	PF	3.500"	Vert	24%	2098 / 337	2434	L	D+S
Moment	8354 ft-lb	8'5"	17919 ft-lb	0.466 (479	%) D	Uniform	End Grain	ı							
Unbraced	9694 ft-lb	8'5"	9704 ft-lb	0.999 (100%)	D+S	L									
Shear	1788 lb	1'3 3/8"	7980 lb	0.224 (229	%) D	Uniform	1								

1

# TL Defl inch **Design Notes**

LL Defl inch 0.070 (L/2809)

0.506 (L/388)

1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.

8'5 1/16" 0.409 (L/480) 0.171 (17%) S

8'5 1/16" 0.546 (L/360) 0.927 (93%) D+S

- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at a maximum of 9'6 3/4" o.c.
- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width

O Lateral Sieric	lerriess ratio based oir sirigle	piy widiii.								
ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Тор	200 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Loads (Siding/ Plywood, etc.)
2	Uniform			Тор	40 PLF	0 PLF	40 PLF	0 PLF	0 PLF	2'0" Roof Load
	Self Weight				9 PLF					

### Notes

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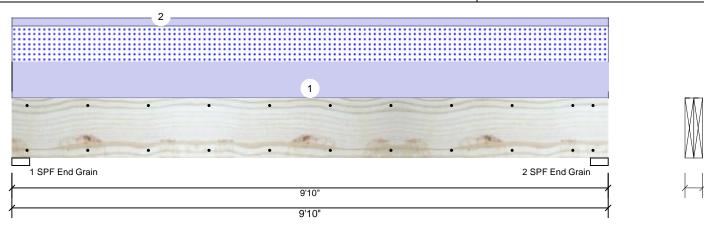
Date: 10/24/2022 Input by: Christine Shivy Job Name: Nicholson The Nicholson

Project #:

1.750" X 11.875" GDH-3 **Kerto-S LVL** 2-Ply - PASSED

Address:

Level: Level



### Member Information Reactions UNPATTERNED Ib (Uplift) Type: Girder Application: Floor Brg Direction Live Dead Snow Plies: 2 Design Method: ASD Vertical 0 1624 1283 1 Moisture Condition: Dry **Building Code: IBC/IRC 2015** 0 1283 2 Vertical 1624 Deflection LL: 480 Load Sharing: No Deflection TL: 360 Deck: Not Checked Importance: Normal - II Temperature: Temp <= 100°F Bearings Bearing Length Dir. Cap. React D/L lb Total Ld. Case 1 - SPF 3.500" Vert 1624 / 1283 2907 L End Grain Analysis Results 1624 / 1283 2 - SPF 3.500" Vert 2907 L

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6496 ft-lb	4'11"	22897 ft-lb	0.284 (28%)	D+S	L
Unbraced	6496 ft-lb	4'11"	9857 ft-lb	0.659 (66%)	D+S	L
Shear	2159 lb	1'3 3/8"	10197 lb	0.212 (21%)	D+S	L
LL Defl incl	n 0.054 (L/2068)	4'11"	0.234 (L/480)	0.232 (23%)	S	L
TL Defl inc	n 0.123 (L/913)	4'11"	0.312 (L/360)	0.394 (39%)	D+S	L

## **Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
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- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Тор	261 PLF	0 PLF	261 PLF	0 PLF	0 PLF	G1
2	Uniform			Тор	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Loads
	Self Weight				9 PLF					

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End Grain

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Page 1 of 1

11 7/8'

Const

Ld. Comb. D+S

D+S

0

0

Wind

0

0

This design is valid until 11/3/2024



M. Bdrm. Window Hdr.

Client: Project:

Address:

Weaver Development The Nicholson The Nicholson

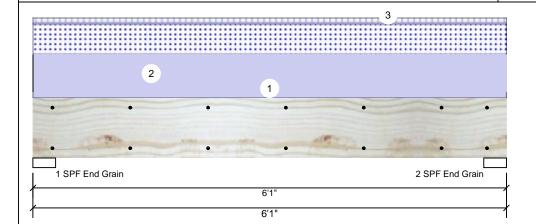
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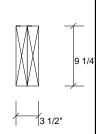
Project #:

**Kerto-S LVL** 1.750" X 9.250" 2-Ply - PASSED

Level: Level

Reactions UNPATTERNED Ib (Uplift)





Page 1 of 1

### Member Information Type: Girder Plies: 2 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal - II Temperature: Temp <= 100°F

Application: Floor Design Method: ASD **Building Code: IBC/IRC 2015** Load Sharing: No Deck: Not Checked

-1100	otions orti	, (; ; E; (; <b>t</b> E)	,			
Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	122	1205	757	0	0
2	Vertical	122	1205	757	0	0
l						

### Analysis Results Analysis Actual Comb. Case Location Allowed Capacity Moment 3' 1/2" 14423 ft-lb 2552 ft-lb 0.177 (18%) D+S L Unbraced 2552 ft-lb 3' 1/2" 10944 ft-lb 0.233 (23%) D+S L 1282 lb 1' 3/4" 7943 lb 0.161 (16%) D+S Shear ī LL Defl inch 0.016 (L/4312) 3' 1/2" 0.141 (L/480) 0.111 (11%) S TL Defl inch 0.041 (L/1664) 3' 1/2" 0.188 (L/360) 0.216 (22%) D+S L

### Bearings Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. 1 - SPF 3.500" Vert 1205 / 757 1962 I D+S End Grain 1205 / 757 D+S 2 - SPF 3.500" Vert 19% 1962 L End Grain

## **Design Notes**

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- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Тор	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Wall Load
2	Uniform			Тор	249 PLF	0 PLF	249 PLF	0 PLF	0 PLF	A1
3	Uniform			Тор	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	1'0" Floor Load
	Self Weight				7 PLF					

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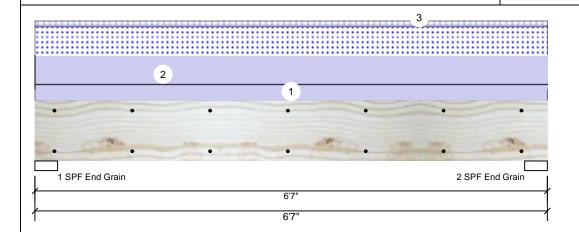
The Nicholson The Nicholson Date: 10/24/2022

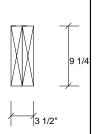
Input by: Christine Shivy Job Name: Nicholson

Project #:

### **Kerto-S LVL** 1.750" X 9.250" Sliding Door 2-Ply - PASSED

Level: Level





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### Member Information Type: Girder Plies: 2 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal - II Temperature: Temp <= 100°F

Application: Floor Design Method: ASD **Building Code: IBC/IRC 2015** Load Sharing: No Deck: Not Checked

Reactions UNPATTERNED Ib (Uplift) Brg Direction Snow Wind Const Live Dead Vertical 132 1386 820 0 0 1 132 1386 820 0 2 Vertical 0

# Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3143 ft-lb	3'3 1/2"	14423 ft-lb	0.218 (22%)	D+S	L
Unbraced	3143 ft-lb	3'3 1/2"	10451 ft-lb	0.301 (30%)	D+S	L
Shear	1500 lb	1' 3/4"	7943 lb	0.189 (19%)	D+S	L
LL Defl inch	0.021 (L/3461)	3'3 1/2"	0.153 (L/480)	0.139 (14%)	S	L
TL Defl inch	0.057 (L/1286)	3'3 1/2"	0.204 (L/360)	0.280 (28%)	D+S	L

# Bearings

Bearing Length Dir. Cap. React D/L lb Total Ld. Case Ld. Comb. D+S 1 - SPF 3.500" Vert 1386 / 820 2206 L End Grain 21% 1386 / 820 2206 L D+S 2 - SPF 3.500" Vert End Grain

## **Design Notes**

- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at end bearings.
- 7 Bottom must be laterally braced at end bearings.
- 8 Lateral slenderness ratio based on single ply width.

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ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments	
1	Uniform			Тор	150 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Wall Load	
2	Uniform			Тор	249 PLF	0 PLF	249 PLF	0 PLF	0 PLF	A1	
3	Uniform			Тор	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	1'-0" Floor Load	
	Self Weight				7 PLF						

## Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- LVL beams must not be cut or drilled
  Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
- Damaged Beams must not be used
- Design assumes top edge is laterally restrained
  Provide lateral support at bearing points to avoid
  lateral displacement and rotation
- 6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 11/3/2024

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Manufacturer Info

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