

Client: Weaver Development Project: The Nicholson

Address:

Date: 3/19/2021 Input by: Christine Shivy Job Name: Nicholson The Nicholson

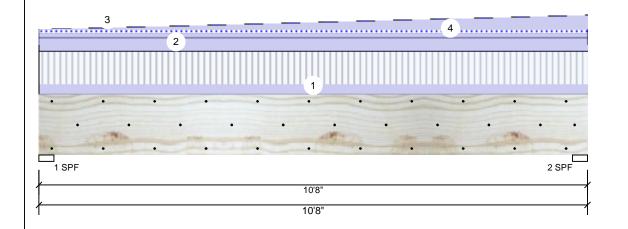
Project #:

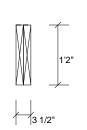
Kerto-S LVL 1.750" X 14.000" BM<sub>1</sub>

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							
Temperature:	Temp <= 100°F							

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

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

# **Bearings** Bearing Length

1 - SPF 3.500"

2 - SPF 3.500"

Cap. React D/L lb Total Ld. Case Ld. Comb. D+L 1698 / 1600 3298 L 68% 1938 / 1600 3538 L D+I

### 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"	10587 ft-lb	0.789 (79%)	D+L	L
Shear	3032 lb	9'3 1/4"	10453 lb	0.290 (29%)	D+L	L
LL Defl inch	0.055 (L/2228)	5'4"	0.255 (L/480)	0.220 (22%)	L	L
TL Defl inch	0.117 (L/1043)	5'4 3/8"	0.340 (L/360)	0.350 (35%)	D+L	L

## **Design Notes**

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

/ Lateral si	enderness ratio based on s	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			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

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

Metsä Wood 301 Merritt 7 Building, 2nd Floor Norwalk, CT 06851 (800) 622-5850 www.metsawood.com/us ICC-ES: ESR-3633

Manufacturer Info

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





Client: Weaver Development Project: The Nicholson Address: The Nicholson

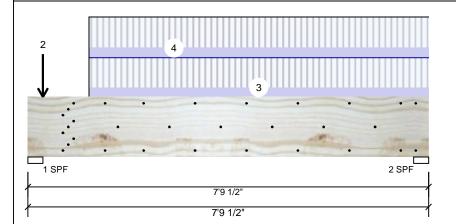
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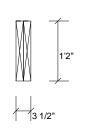
Project #:

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

Level: Level

Reactions UNPATTERNED Ib (Uplift)





Page 1 of 1

### Member Information Туре: Girder Plies: 2 Moisture Condition: Dry Deflection LL: 480 Deflection TL: 360 Importance: Normal

Temp <= 100°F

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

Brg Snow Wind Const Live Dead 3642 1260 0 0 0 1 939 0 0 0 2 2679

# **Bearings** Bearing Length

1 - SPF 3.500"

2 - SPF 3.500"

Cap. React D/L lb Total Ld. Case Ld. Comb. D+L 1260 / 3642 4902 L 70% 939 / 2679 3619 L D+I

### Analysis Results

Temperature:

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"	13841 ft-lb	0.443 (44%)	D+L	L
Shear	3507 lb	1'4 3/4"	10453 lb	0.335 (34%)	D+L	L
LL Defl inch	0.038 (L/2320)	3'11 1/8"	0.183 (L/480)	0.210 (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 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Concentrated load fastener specification is in addition to hanger fasteners if a hanger is
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 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	Point	0-3-8		Near Face	305 lb	915 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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- 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

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Client: Weaver Development Project:

The Nicholson The Nicholson Date: 3/19/2021 Input by: Christine Shivy

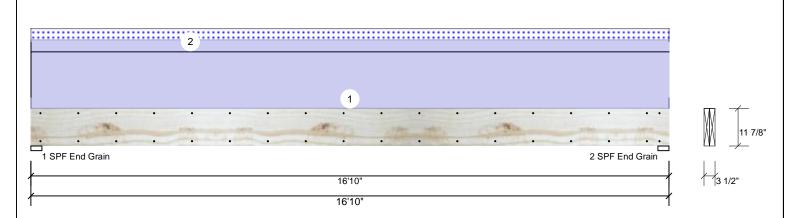
Job Name: Nicholson

Project #:

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

Address:

Level: Level



/lember Inforr	nation						Reaction	is UNPAT	TERNE	D lb (Uplift)			
Type:	Girder		Applicati	on: F	loor		Brg	Live	Dea	d Snow	,	Wind	Const
Plies:	2		Design I	Method: A	SD		1	0	209	8 337		0	0
Moisture Condition	: Dry		Building	Code: IE	3C/IRC 2015		2	0	209	8 337		0	0
Deflection LL:	480		Load Sh	aring: N	0								
Deflection TL:	360		Deck:	N	ot Checked								
Importance:	Normal												
Temperature:	Temp <= 100	°F											
							Bearings	S					
							Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
							1 - SPF End	3.500"	23%	2098 / 337	2434	L	D+S
Analysis Result	s						Grain						
Analysis Ac	tual	Location	Allowed	Capacity	Comb.	Case	2-SPF	3.500"	23%	2098 / 337	2434	L	D+S
Moment 835	54 ft-lb	8'5"	17919 ft-lb	0.466 (47%	) D	Uniform	End Grain						
Unbraced 969	94 ft-lb	8'5"	9704 ft-lb	0.999 (100%)	D+S	L							
Shear 179	94 lb	1'2 5/8"	7980 lb	0.225 (22%	) D	Uniform							

1

# TL Defl inch **Design Notes**

1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".

8'5 1/16" 0.409 (L/480) 0.170 (17%) S

8'5 1/16" 0.546 (L/360) 0.930 (93%) D+S

- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be laterally braced at a maximum of 9'6 3/4" o.c.
- 6 Bottom braced at bearings.

LL Defl inch 0.070 (L/2809)

0.506 (L/388)

/ Lateral siende	erness ratio based on single	piy wiatn.								
ID	D Load Type Location		Trib Width	b Width Side Dead 0.9		Live 1	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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- Dry service conditions, unless noted otherwise
   LVL not to be treated with fire retardant or corrosive
- Handling & Installation
- Indicating & Installation

  I. VIL 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

  Design assumes to be used

  Design assumes top edge is laterally restrained

  Design assumes to be used to be used

  Design assumes to pedge is laterally restrained of the product of the product

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 1/8/2023

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Page 1 of 1





**Kerto-S LVL** 

GDH-3

Client: Weaver Development Project: The Nicholson

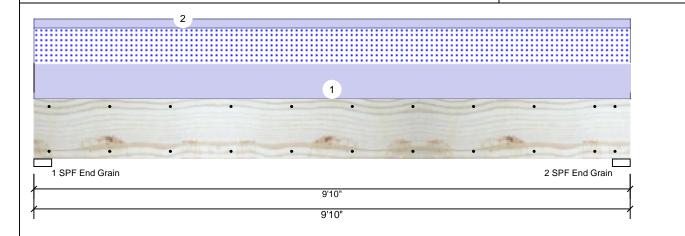
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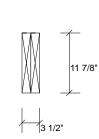
Date: 3/19/2021 Input by: Job Name: Nicholson The Nicholson

Project #: 1.750" X 11.875" 2-Ply - PASSED

Christine Shivy

Level: Level





Page 1 of 1

Member Inform	nation
Type:	Girder
Plies:	2
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal
Temperature:	Temp <= 100°

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

Reactions UNPATTERNED Ib (Uplift) Brg Live Wind Const Dead Snow 0 1476 1136 0 0 1 1476 0 0 0 2 1136

## Analysis Results Analysis Location Allowed Capacity

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5836 ft-lb	4'11"	22897 ft-lb	0.255 (25%)	D+S	L
Unbraced	5836 ft-lb	4'11"	9857 ft-lb	0.592 (59%)	D+S	L
Shear	1964 lb	1'2 5/8"	10197 lb	0.193 (19%)	D+S	L
LL Defl inch	0.048 (L/2337)	4'11"	0.234 (L/480)	0.210 (21%)	S	L
TL Defl inch	0.111 (L/1016)	4'11"	0.312 (L/360)	0.350 (35%)	D+S	L
	,		, ,	, ,		

### **Bearings** Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1476 / 1136 2612 L D+S 1 - SPF 3.500" End Grain 2 - SPF 3.500" 1476 / 1136 2612 L D+S End Grain

## **Design Notes**

- 1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.
- 7 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	231 PLF	0 PLF	231 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					

### 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

This design is valid until 1/8/2023

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Client: Weaver Development Project: The Nicholson Address:

The Nicholson

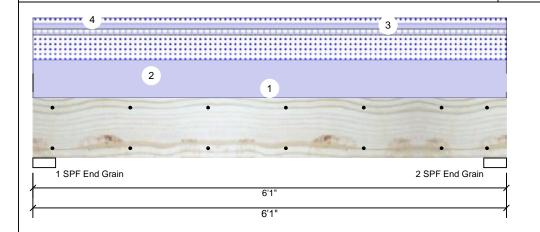
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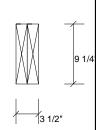
Project #:

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

Christine Shivy Job Name: Nicholson

Reactions UNPATTERNED Ib (Uplift)





Page 1 of 1

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

Mambar Information

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

_						
Brg	Live	Dead	Snow	Wind	Const	
1	122	1375	928	0	0	
2	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 1546 lb 1' 7943 lb 0.195 (19%) D+S Shear ī LL Defl inch 0.019 (L/3521) 3' 1/2" 0.141 (L/480) 0.140 (14%) S

### **Bearings** Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1 - SPF 3.500" 1375 / 928 2303 L D+S End Grain 2 - SPF 3.500" 1375 / 928 2303 L D+S End

# **Design Notes**

1 Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".

3' 1/2" 0.188 (L/360) 0.250 (25%) D+S

- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Girders are designed to be supported on the bottom edge only.
- 4 Top loads must be supported equally by all plies.
- 5 Top braced at bearings.
- 6 Bottom braced at bearings.

TL Defl inch 0.048 (L/1418)

7 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	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					

L

Grain

## Notes

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- LVL beams must not be cut or drilled
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  Provide lateral support at bearing points to avoid
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Client: Weaver Development Project:

The Nicholson The Nicholson Date: 3/19/2021

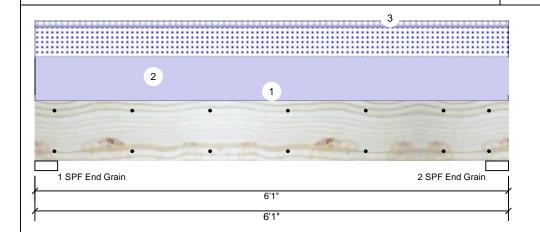
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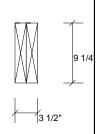
Project #:

M. Bdrm. Window Hdr. **Kerto-S LVL** 1.750" X 9.250" 2-Ply - PASSED

Address:

Level: Level





Page 1 of 1

Member Information							
Type:	Girder						
Plies:	2						
Moisture Condition:	Dry						
Deflection LL:	480						
Deflection TL:	360						
Importance:	Normal						
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 Wind Const Live Dead Snow 122 1205 757 0 0 1 122 1205 0 0 2 757

# **Bearings**

Bearing Length Cap. React D/L lb Total Ld. Case Ld. Comb. 1205 / 757 D+S 1 - SPF 3.500" 1962 L End Grain 2 - SPF 3.500" 1205 / 757 1962 L D+S End Grain

### Analysis Results

A l ! -	A -4I	1	A III	0	0	0
Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2552 ft-lb	3' 1/2"	14423 ft-lb	0.177 (18%)	D+S	L
Unbraced	2552 ft-lb	3' 1/2"	10944 ft-lb	0.233 (23%)	D+S	L
Shear	1317 lb	1'	7943 lb	0.166 (17%)	D+S	L
LL Defl inch	0.016 (L/4312)	3' 1/2"	0.141 (L/480)	0.110 (11%)	S	L
TL Defl inch	0.041 (L/1664)	3' 1/2"	0.188 (L/360)	0.220 (22%)	D+S	L

## **Design Notes**

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

### 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
  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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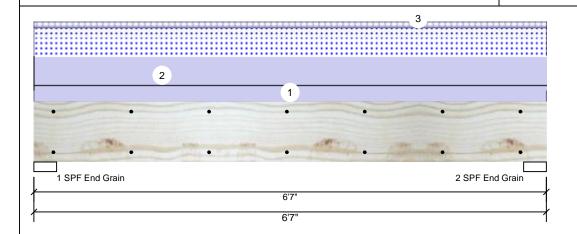


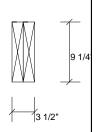
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Date: 3/19/2021 Input by: Christine Shivy Job Name: Nicholson

Project #:

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





Page 1 of 1

Member Information							
Type:	Girder						
Plies:	2						
Moisture Condition:	Dry						
Deflection LL:	480						
Deflection TL:	360						
Importance:	Normal						
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 Wind Const Live Dead Snow 132 1386 820 0 0 1 132 1386 820 0 2 0

### Analysis Results Analysis Actual Location Allowed Comb. Capacity 0.218 (22%) D+S Moment 3143 ft-lb 3'3 1/2" 14423 ft-lb

Unbraced 3143 ft-lb 3'3 1/2" 10451 ft-lb 0.301 (30%) D+S 1536 lb 1' 7943 lb 0.193 (19%) D+S Shear LL Defl inch 0.021 (L/3461) 3'3 1/2" 0.153 (L/480) 0.140 (14%) S TL Defl inch 0.057 (L/1286) 3'3 1/2" 0.204 (L/360) 0.280 (28%) D+S

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

# **Design Notes**

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

Case

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### 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 1/8/2023

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