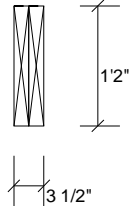
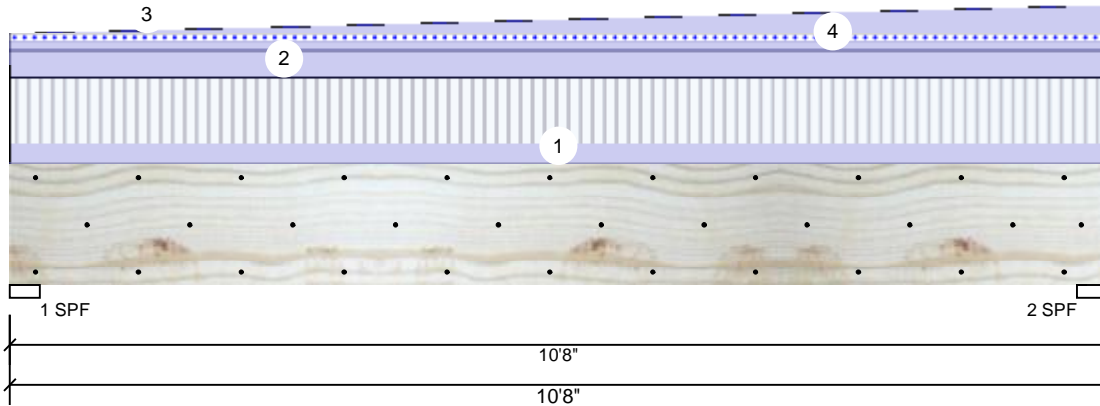


BM1 Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED Ib (Uplift)

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

Bearings

Bearing	Length	Cap. React	D/L Ib	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	63%	1698 / 1600	3298	L	D+L
2 - SPF	3.500"	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"	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.

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			Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Wall Load
3	Tapered Start	0-0-0		Top	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			Top	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.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

Metsä Wood
 301 Merritt 7 Building, 2nd Floor
 Norwalk, CT 06851
 (800) 622-5851
www.metsawood.com/us
 ICC-ES: ESR-3633

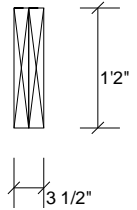
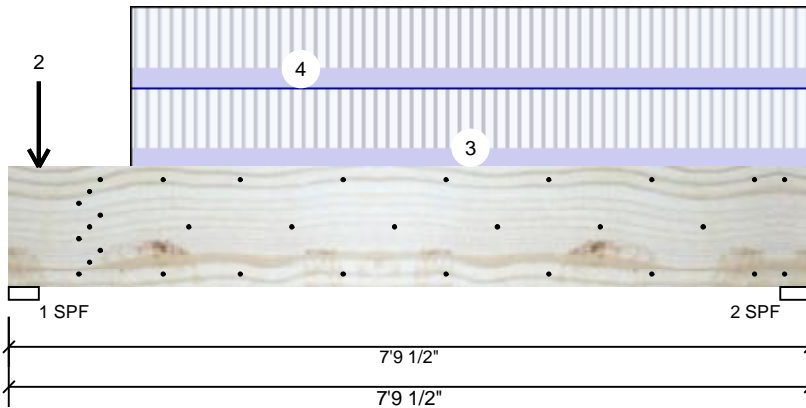
Comtech, Inc.
 1001 S. Reilly Road, Suite #639
 Fayetteville, NC
 USA
 28314
 910-864-TRUS



This design is valid until 1/8/2023

BM2 Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED Ib (Uplift)

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

Bearings

Bearing	Length	Cap.	React D/L	Ib	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	94%	1260 / 3642	4902	L	D+L	
2 - SPF	3.500"	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"	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 present.
- 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

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.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

Manufacturer Info

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

Comtech, Inc.
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 Fayetteville, NC
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 910-864-TRUS



This design is valid until 1/8/2023

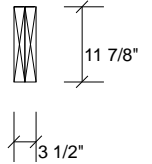
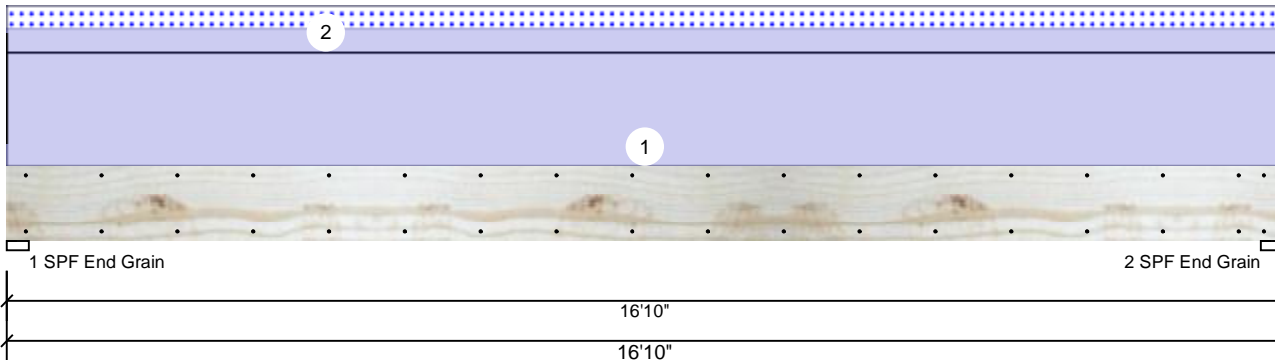


Client: Weaver Development
 Project: The Nicholson
 Address: The Nicholson

Date: 5/18/2020
 Input by: Christine Shivy
 Job Name: Nicholson
 Project #:

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

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	2098	337	0	0
2	0	2098	337	0	0

Bearings

Bearing	Length	Cap.	React D/L	Ib	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	23%	2098 / 337	2434	L	D+S	
2 - SPF End Grain	3.500"	23%	2098 / 337	2434	L	D+S	

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	8354 ft-lb	8'5"	17919 ft-lb	0.466 (47%)	D	Uniform
Unbraced	9694 ft-lb	8'5"	9704 ft-lb	0.999 (100%)	D+S	L
Shear	1794 lb	1'2 5/8"	7980 lb	0.225 (22%)	D	Uniform
LL Defl inch	0.070 (L/2809)	8'5 1/16"	0.409 (L/480)	0.170 (17%)	S	L
TL Defl inch	0.506 (L/388)	8'5 1/16"	0.546 (L/360)	0.930 (93%)	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 must be laterally braced at a maximum of 9'6 3/4" o.c.
- 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			Top	200	PLF	0	PLF	0	PLF	0	PLF	0	PLF	Exterior Loads (Siding/Plywood, etc.)
2	Uniform Self Weight			Top	40	PLF	0	PLF	40	PLF	0	PLF	0	PLF	2'0" Roof Load

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.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. 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

Manufacturer Info

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

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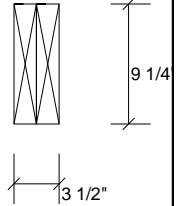
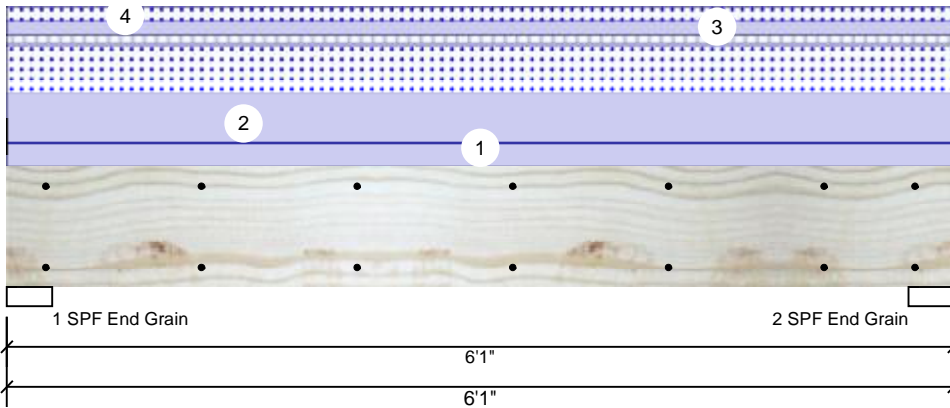




Client: Weaver Development
 Project: The Nicholson
 Address: The Nicholson

Date: 5/18/2020
 Input by: Christine Shivy
 Job Name: Nicholson
 Project #:

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



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	480	Load Sharing:	No
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	122	1427	979	0	0
2	122	1427	979	0	0

Bearings

Bearing	Length	Cap.	React D/L	Ib	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	23%	1427 / 979	2407	L	D+S	
2 - SPF End Grain	3.500"	23%	1427 / 979	2407	L	D+S	

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3129 ft-lb	3' 1/2"	14423 ft-lb	0.217 (22%)	D+S	L
Unbraced	3129 ft-lb	3' 1/2"	10944 ft-lb	0.286 (29%)	D+S	L
Shear	1615 lb	1'	7943 lb	0.203 (20%)	D+S	L
LL Defl inch	0.020 (L/3335)	3' 1/2"	0.141 (L/480)	0.140 (14%)	S	L
TL Defl inch	0.050 (L/1357)	3' 1/2"	0.188 (L/360)	0.270 (27%)	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			Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall Load
2	Uniform			Top	249 PLF	0 PLF	249 PLF	0 PLF	0 PLF	A1
3	Uniform			Top	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	1'-0" Floor Load
4	Uniform			Top	73 PLF	0 PLF	73 PLF	0 PLF	0 PLF	M1
	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.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. 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

Manufacturer Info

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

Comtech, Inc.
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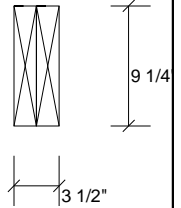
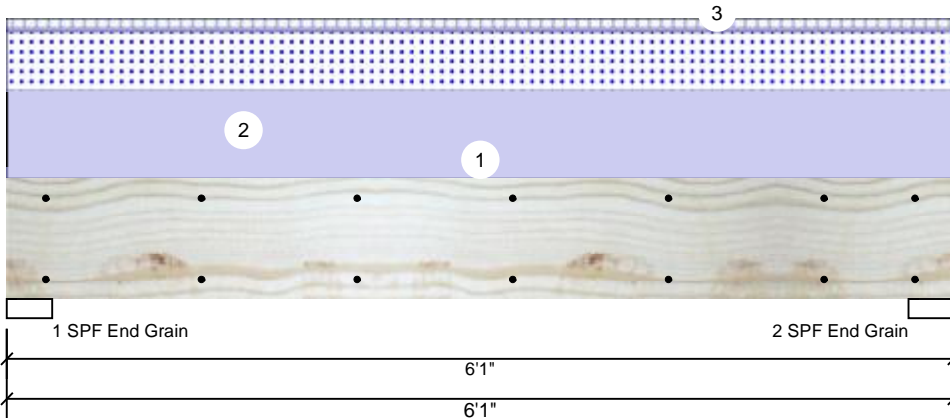


Client: Weaver Development
 Project: The Nicholson
 Address: The Nicholson

Date: 5/18/2020
 Input by: Christine Shivy
 Job Name: Nicholson
 Project #:

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

Level: Level



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	Live	Dead	Snow	Wind	Const
1	122	1205	757	0	0
2	122	1205	757	0	0

Bearings

Bearing	Length	Cap.	React D/L	Ib	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	18%	1205 / 757	1962	L	D+S	
2 - SPF End Grain	3.500"	18%	1205 / 757	1962	L	D+S	

Analysis Results

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			Top	125 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Wall Load
2	Uniform			Top	249 PLF	0 PLF	249 PLF	0 PLF	0 PLF	A1
3	Uniform			Top	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	10" 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.

Lumber
 1. Dry service conditions, unless noted otherwise
 2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation
 1. LVL beams must not be cut or drilled
 2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
 3. Damaged Beams must not be used
 4. Design assumes top edge is laterally restrained
 5. 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

Manufacturer Info
 Metsä Wood
 301 Merritt 7 Building, 2nd Floor
 Norwalk, CT 06851
 (800) 622-5850
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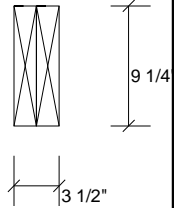
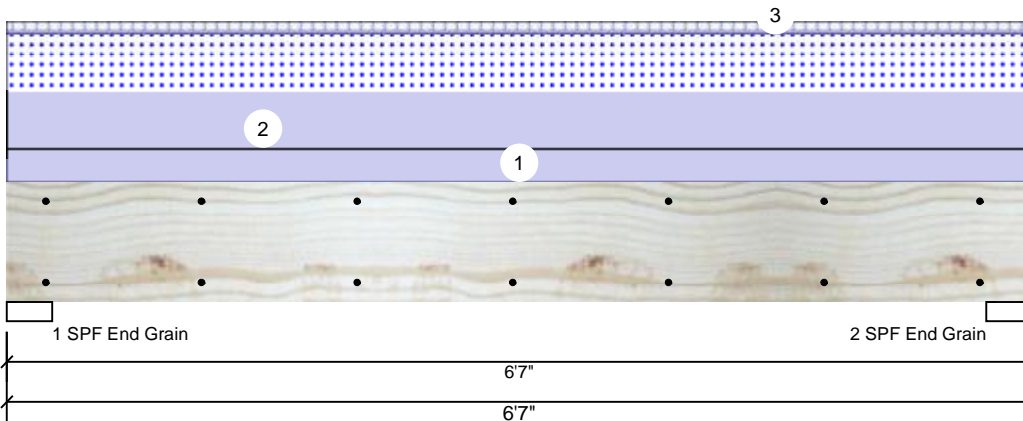


Client: Weaver Development
 Project: The Nicholson
 Address: The Nicholson

Date: 5/18/2020
 Input by: Christine Shivy
 Job Name: Nicholson
 Project #:

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

Level: Level



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	Live	Dead	Snow	Wind	Const
1	132	1386	820	0	0
2	132	1386	820	0	0

Bearings

Bearing	Length	Cap.	React D/L	Ib	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	

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	1536 lb	1'	7943 lb	0.193 (19%)	D+S	L
LL Defl inch	0.021 (L/3461)	3'3 1/2"	0.153 (L/480)	0.140 (14%)	S	L
TL Defl inch	0.057 (L/1286)	3'3 1/2"	0.204 (L/360)	0.280 (28%)	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			Top	150 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Exterior Wall Load
2	Uniform			Top	249 PLF	0 PLF	249 PLF	0 PLF	0 PLF	A1
3	Uniform			Top	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.

Lumber
 1. Dry service conditions, unless noted otherwise
 2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation
 1. LVL beams must not be cut or drilled
 2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
 3. Damaged Beams must not be used
 4. Design assumes top edge is laterally restrained
 5. 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

Manufacturer Info
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 301 Merritt 7 Building, 2nd Floor
 Norwalk, CT 06851
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