

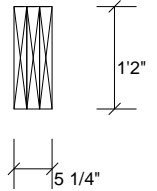
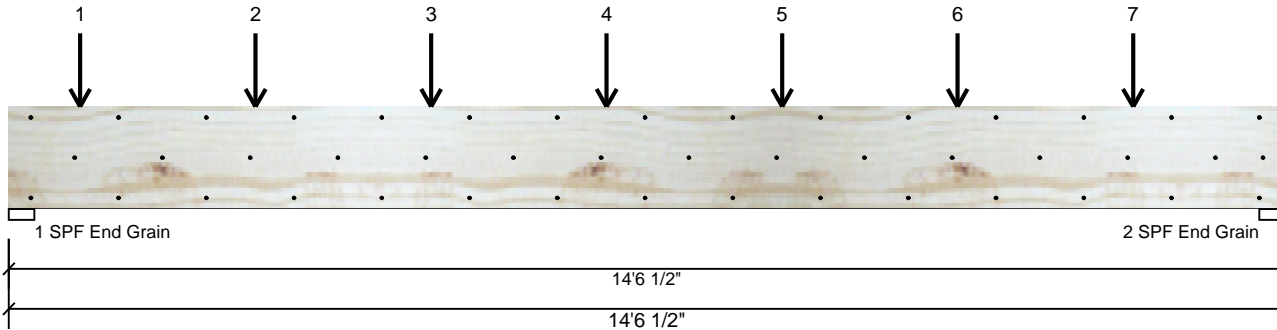


Client: WESTAN HOMES
 Project:
 Address: James Elev. A / 3rd Car

Date: 2/7/2022
 Input by: Lenny Norris
 Job Name: JAMES
 Project #:

BM1 Kerto-S LVL 1.750" X 14.000" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
Deflection LL:	480	Load Sharing:	Yes
Deflection TL:	360	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	3528	3410	0	0
2	Vertical	0	3165	3046	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	45%	3528 / 3410	6938	L	D+S
2 - SPF End Grain	3.500"	Vert	40%	3165 / 3046	6212	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	24580 ft-lb	6'9 3/4"	48437 ft-lb	0.507 (51%)	D+S	L
Unbraced	24580 ft-lb	6'9 3/4"	24672 ft-lb	0.996 (100%)	D+S	L
Shear	6207 lb	13'1"	18032 lb	0.344 (34%)	D+S	L
LL Defl inch	0.195 (L/866)	7'2 11/16"	0.352 (L/480)	0.554 (55%)	S	L
TL Defl inch	0.397 (L/426)	7'2 11/16"	0.469 (L/360)	0.845 (85%)	D+S	L

Design Notes

- 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.
- Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- Refer to last page of calculations for fasteners required for specified loads.
- Girders are designed to be supported on the bottom edge only.
- Top loads must be supported equally by all plies.
- Top must be laterally braced at a maximum of 6'2 1/4" o.c.
- Bottom must be laterally braced at end bearings.
- 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	0-9-12		Top	918 lb	0 lb	918 lb	0 lb	0 lb	A6
	Bearing Length	0-3-8								
2	Point	2-9-12		Top	695 lb	0 lb	695 lb	0 lb	0 lb	A5
	Bearing Length	0-3-8								

Continued on page 2...

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

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

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

Manufacturer Info

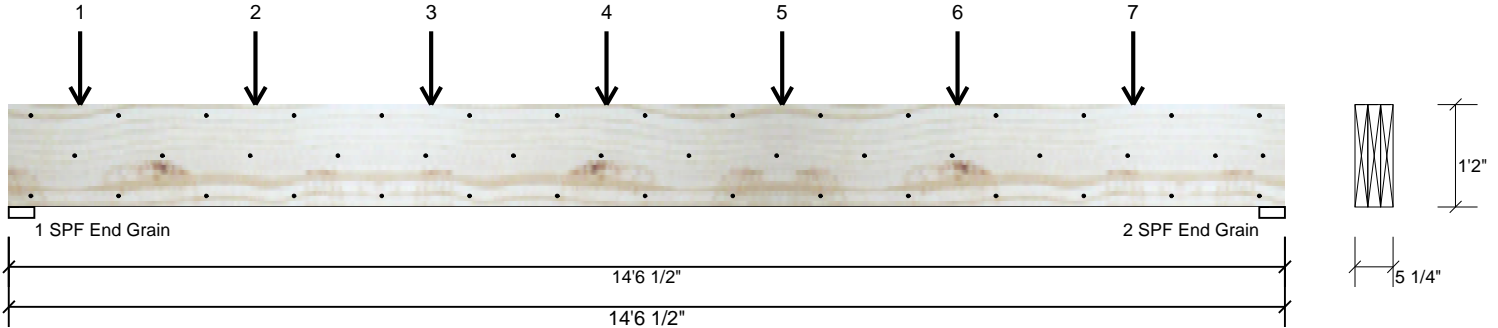
Metsä Wood
 301 Merritt 7 Building, 2nd Floor
 Norwalk, CT 06851
 (800) 622-5850
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Comtech, Inc.
 1001 S. Reilly Road, Suite #639
 Fayetteville, NC
 USA
 28314
 910-864-TRUS



BM1 Kerto-S LVL 1.750" X 14.000" 3-Ply - PASSED

Level: Level



...Continued from page 1

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
3	Point	4-9-12		Top	1035 lb	0 lb	1035 lb	0 lb	0 lb	A4
	Bearing Length	0-3-8								
4	Point	6-9-12		Top	1035 lb	0 lb	1035 lb	0 lb	0 lb	A4
	Bearing Length	0-3-8								
5	Point	8-9-12		Top	1035 lb	0 lb	1035 lb	0 lb	0 lb	A4
	Bearing Length	0-3-8								
6	Point	10-9-12		Top	869 lb	0 lb	869 lb	0 lb	0 lb	A3
	Bearing Length	0-3-8								
7	Point	12-9-12		Top	869 lb	0 lb	869 lb	0 lb	0 lb	A3
	Bearing Length	0-3-8								
	Self Weight				16 PLF					

Notes

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Lumber

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Handling & Installation

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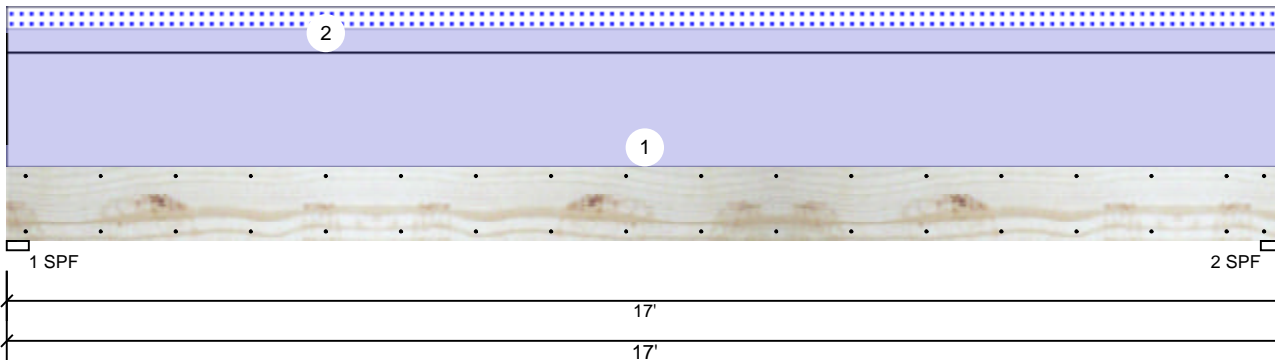
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GDH Kerto-S LVL 1.750" X 11.875" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder
Plies:	3
Moisture Condition:	Dry
Deflection LL:	480
Deflection TL:	360
Importance:	Normal - II
Temperature:	Temp <= 100°F

Application:	Floor
Design Method:	ASD
Building Code:	IBC 2012
Load Sharing:	Yes
Deck:	Not Checked

Reactions UNPATTERNED Ib (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	2158	340	0	0
2	Vertical	0	2158	340	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	32%	2158 / 340	2498	L	D+S
2 - SPF	3.500"	Vert	32%	2158 / 340	2498	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	8683 ft-lb	8'6"	27954 ft-lb	0.311 (31%)	D	Uniform
Unbraced	10051 ft-lb	8'6"	10065 ft-lb	0.999 (100%)	D+S	L
Shear	1846 lb	1'3 3/8"	11970 lb	0.154 (15%)	D	Uniform
LL Defl inch	0.049 (L/4091)	8'6 1/16"	0.414 (L/480)	0.117 (12%)	S	L
TL Defl inch	0.356 (L/557)	8'6 1/16"	0.551 (L/360)	0.646 (65%)	D+S	L

Design Notes

- 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.
- Fasten all plies using 2 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
- Refer to last page of calculations for fasteners required for specified loads.
- Girders are designed to be supported on the bottom edge only.
- Top loads must be supported equally by all plies.
- Top must be laterally braced at a maximum of 14'9 15/16" o.c.
- Bottom must be laterally braced at end bearings.
- 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	Wall
2	Uniform			Top	40 PLF	0 PLF	40 PLF	0 PLF	0 PLF	2'-0" Roof Load
	Self Weight				14 PLF					

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