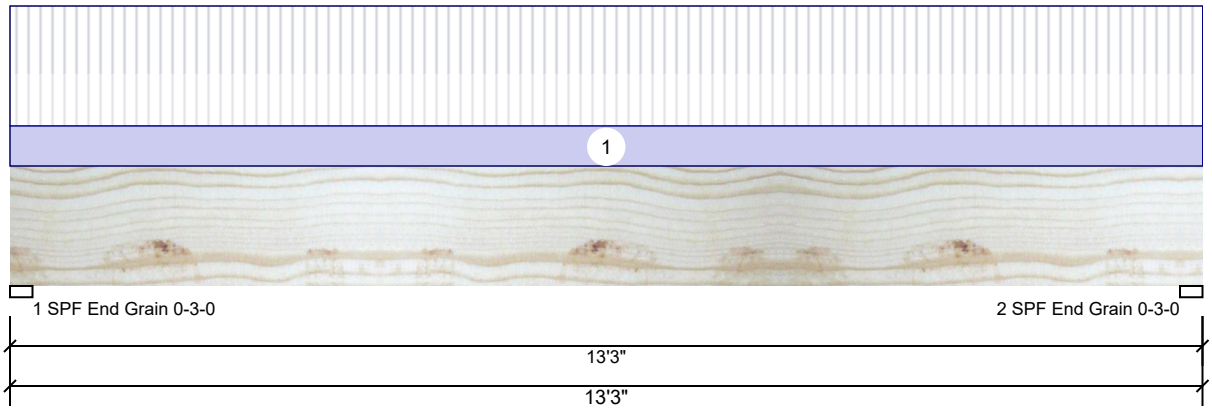
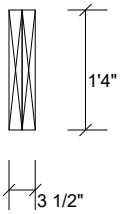
Client:	Tapia Design and Build	Date:	12/16/2024
Project:		Input by:	Johnnie Baggett
Address:	658 James Norris Road, Angier NC	Job Name:	658 James Norris Road
		Project #:	B1124-6245

FB1 Kerto-S LVL 1.750" X 16.000" 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 - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	2776	1010	0	0	0
2	Vertical	2776	1010	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	43%	1010 / 2776	3786	L	D+L
2 - SPF End Grain	3.000"	Vert	43%	1010 / 2776	3786	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	11879 ft-lb	6'7 1/2"	34565 ft-lb	0.344 (34%)	D+L	L
Unbraced	11879 ft-lb	6'7 1/2"	11901 ft-lb	0.998 (100%)	D+L	L
Shear	2898 lb	1'7"	11947 lb	0.243 (24%)	D+L	L
LL Defl inch	0.127 (L/1218)	6'7 1/2"	0.322 (L/480)	0.394 (39%)	L	L
TL Defl inch	0.173 (L/893)	6'7 1/2"	0.430 (L/360)	0.403 (40%)	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 Girders are designed to be supported on the bottom edge only.
3 Multiple plies must be fastened together as per manufacturer's details.
4 Top loads must be supported equally by all plies.
5 Top must be laterally braced at a maximum of 10'2 7/16" o.c.
6 Bottom must be laterally braced at end 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	140 PLF	419 PLF	0 PLF	0 PLF	0 PLF	F01
	Self Weight				12 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 6/28/2026

Manufacturer Info

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

Client:	Tapia Design and Build	Date:	12/16/2024
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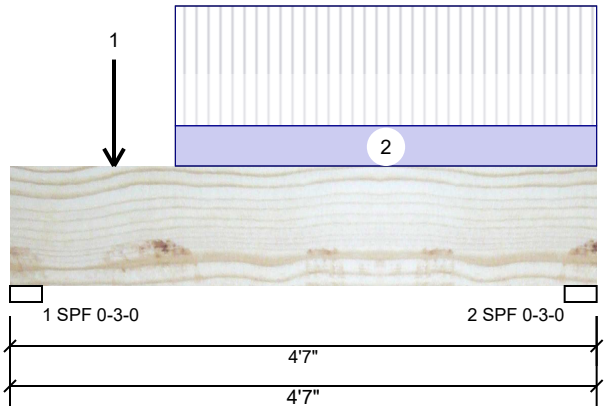
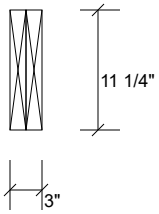
Address:	658 James Norris Road, Angier NC	Job Name:	658 James Norris Road
		Project #:	B1124-6245

BBO SP #2 2.000" X 12.000" 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 - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	720	240	0	0	0
2	Vertical	363	122	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.000"	Vert	25%	240 / 720	960	L	D+L
2 - SPF	3.000"	Vert	13%	122 / 363	485	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	633 ft-lb	1'7 5/16"	3955 ft-lb	0.160 (16%)	D+L	L
Unbraced	633 ft-lb	1'7 5/16"	3806 ft-lb	0.166 (17%)	D+L	L
Shear	597 lb	1'2 1/4"	3938 lb	0.152 (15%)	D+L	L
LL Defl inch	0.003 (L/16539)	2'1 15/16"	0.105 (L/480)	0.029 (3%)	L	L
TL Defl inch	0.004 (L/12393)	2'1 15/16"	0.140 (L/360)	0.029 (3%)	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 Girders are designed to be supported on the bottom edge only.
3 Multiple plies must be fastened together as per manufacturer's details.
4 Top loads must be supported equally by all plies.
5 Top must be laterally braced at end bearings.
6 Bottom must be laterally braced at end 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	0-9-12		Top	227 lb	681 lb	0 lb	0 lb	0 lb	F08-GR
2	Part. Uniform	1-3-8 to 4-7-0		Top	41 PLF	122 PLF	0 PLF	0 PLF	0 PLF	F09

Manufacturer Info

This design is valid until 6/28/2026

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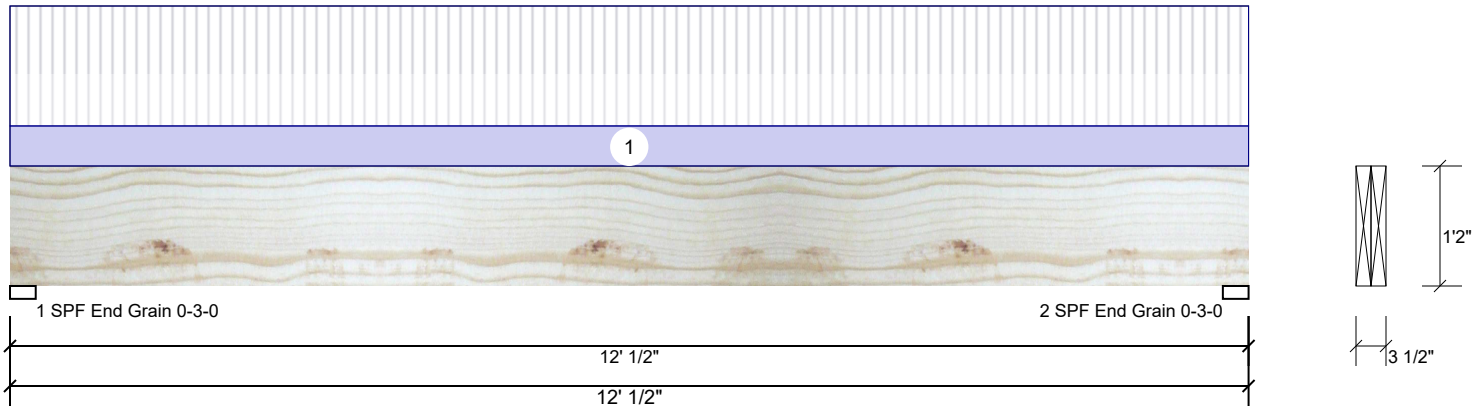
B1 Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED

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 - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	5268	1824	0	0	0
2	Vertical	5268	1824	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	Vert	80%	1824 / 5268	7092	L	D+L
2 - SPF End Grain	3.000"	Vert	80%	1824 / 5268	7092	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	20040 ft-lb	6' 1/4"	26999 ft-lb	0.742 (74%)	D+L	L
Unbraced	20040 ft-lb	6' 1/4"	20087 ft-lb	0.998 (100%)	D+L	L
Shear	5436 lb	10'7 1/2"	10453 lb	0.520 (52%)	D+L	L
LL Defl inch	0.263 (L/533)	6' 1/4"	0.292 (L/480)	0.901 (90%)	L	L
TL Defl inch	0.354 (L/396)	6' 1/4"	0.389 (L/360)	0.910 (91%)	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. Girders are designed to be supported on the bottom edge only.
3. Multiple plies must be fastened together as per manufacturer's details.
4. Top loads must be supported equally by all plies.
5. Top must be laterally braced at a maximum of 4'8 5/16" o.c.
6. Bottom must be laterally braced at end 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	292 PLF	875 PLF	0 PLF	0 PLF	0 PLF	F04
	Self Weight				11 PLF					

Notes

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