GDH   Kerto-S LVL   1.750" X 16.000"   3-Ply - PASSED

Level: Level

1 SPF   2 SPF

18'10"
18'10"

1'4"
5 1/4"

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 lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	1127	951	0	0
2	Vertical	0	1127	951	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	27%	1127 / 951	2078	L	D+S
2 - SPF	3.500"	Vert	27%	1127 / 951	2078	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	9334 ft-lb	9'5"	62010 ft-lb	0.151 (15%)	D+S	L
Unbraced	9334 ft-lb	9'5"	10990 ft-lb	0.849 (85%)	D+S	L
Shear	1744 lb	17'2 1/2"	20608 lb	0.085 (8%)	D+S	L
LL Defl inch	0.078 (L/2813)	9'5 1/16"	0.460 (L/480)	0.171 (17%)	S	L
TL Defl inch	0.171 (L/1288)	9'5 1/16"	0.613 (L/360)	0.280 (28%)	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.
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 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	101 PLF	0 PLF	101 PLF	0 PLF	0 PLF	A4A
	Self Weight				19 PLF					

isDesign

Client:	Weaver Development	Date:	9/22/2023
Project:		Input by:	Curtis Quick
Address:		Job Name:	The Lauren III Beams
		Project #:	

GDH-1 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level

1 SPF   2 SPF

14'

14'

11 7/8"

3 1/2"
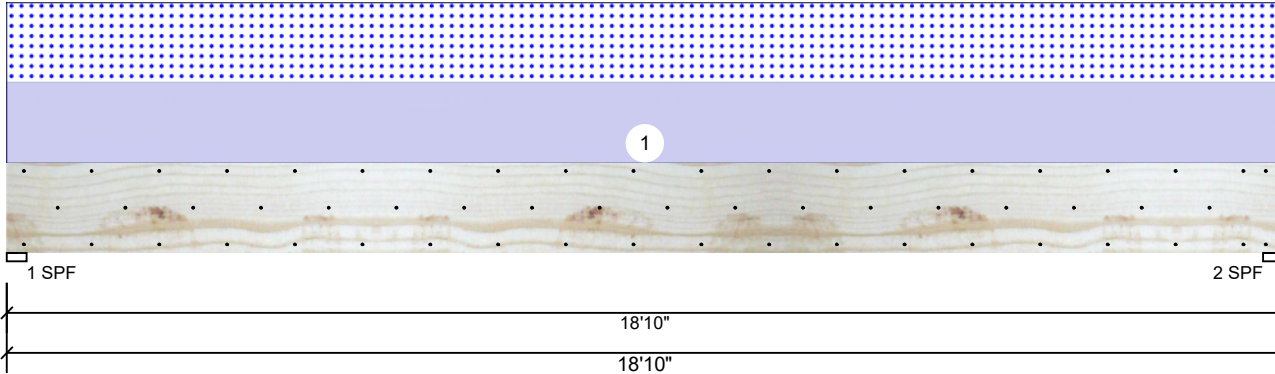
Member Information

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 2012
Load Sharing:	No
Deck:	Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	1696	1631	0	0
2	Vertical	0	1696	1631	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	64%	1696 / 1631	3327	L	D+S
2 - SPF	3.500"	Vert	64%	1696 / 1631	3327	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	10893 ft-lb	7'	22897 ft-lb	0.476 (48%)	D+S	L
Unbraced	10893 ft-lb	7'	10904 ft-lb	0.999 (100%)	D+S	L
Shear	2727 lb	12'8 5/8"	10197 lb	0.267 (27%)	D+S	L
LL Defl inch	0.195 (L/832)	7' 1/16"	0.339 (L/480)	0.577 (58%)	S	L
TL Defl inch	0.398 (L/408)	7' 1/16"	0.451 (L/360)	0.882 (88%)	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.
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 8'2 11/16" o.c.
7. Bottom must be laterally braced at end bearings.
8. Lateral slenderness ratio based on single ply width.

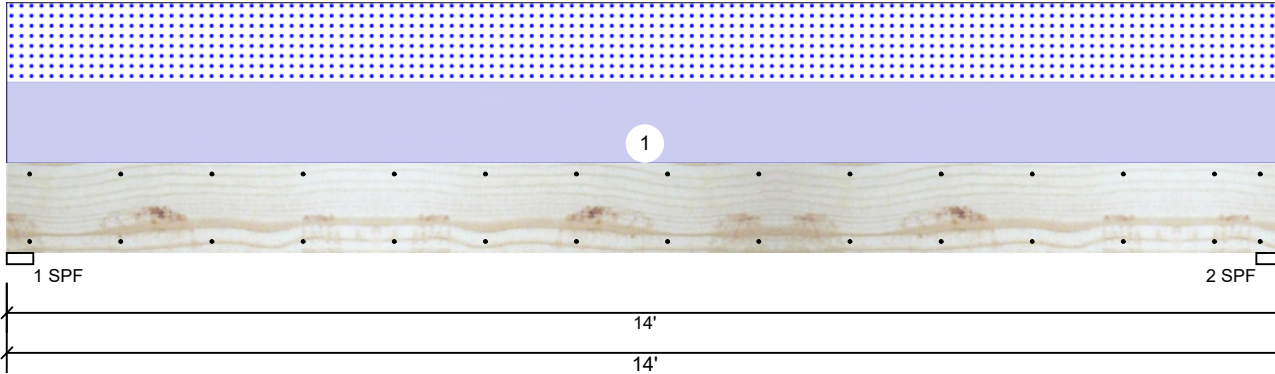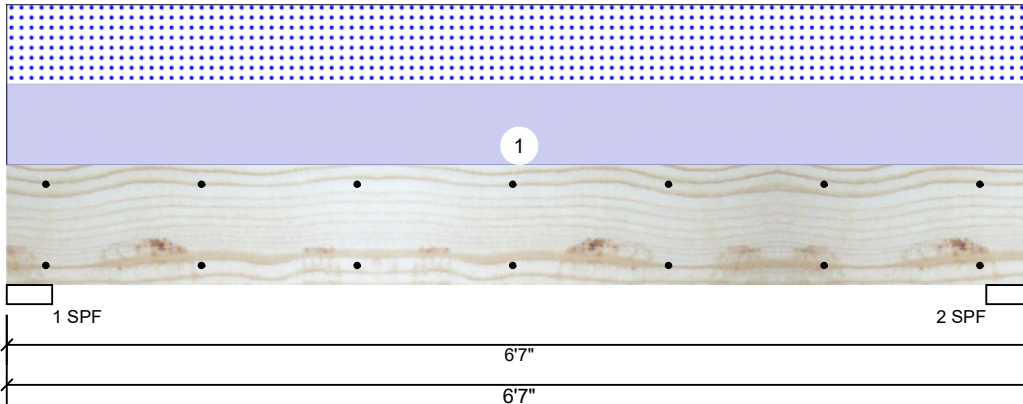| ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
1	Uniform			Top	233 PLF	0 PLF	233 PLF	0 PLF	0 PLF	G1
	Self Weight				9 PLF					

Manufacturer Info

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

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

This design is valid until 11/3/2024

comtech

BM1   Kerto-S LVL   1.750" X 9.250"   2-Ply - PASSED   Level: Level

1 SPF   2 SPF
6'7"
6'7"

9 1/4"
3 1/2"

Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
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	0	1564	1541	0	0
2	Vertical	0	1564	1541	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	Vert	60%	1564 / 1541	3105	L	D+S
2 - SPF	3.500"	Vert	60%	1564 / 1541	3105	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4423 ft-lb	3'3 1/2"	14423 ft-lb	0.307 (31%)	D+S	L
Unbraced	4423 ft-lb	3'3 1/2"	10451 ft-lb	0.423 (42%)	D+S	L
Shear	2108 lb	1' 3/4"	7943 lb	0.265 (27%)	D+S	L
LL Defl inch	0.040 (L/1842)	3'3 1/2"	0.153 (L/480)	0.261 (26%)	S	L
TL Defl inch	0.080 (L/914)	3'3 1/2"	0.204 (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.

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.

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	468 PLF	0 PLF	468 PLF	0 PLF	0 PLF	A1
	Self Weight				7 PLF					

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