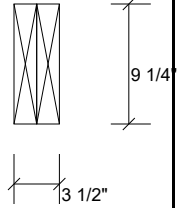
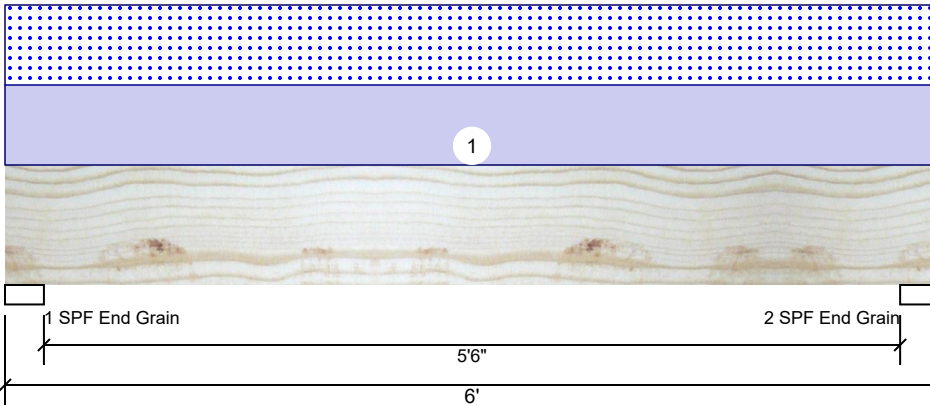


HDR1 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

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 2012
Load Sharing:	No
Deck:	Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	1642	1620	0	0
2	0	1642	1620	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	36%	1642 / 1620	3262	L	D+S
2 - SPF End Grain	3.000"	36%	1642 / 1620	3262	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4300 ft-lb	3'	14423 ft-lb	0.298 (30%)	D+S	L
Unbraced	4300 ft-lb	3'	10944 ft-lb	0.393 (39%)	D+S	L
Shear	2220 lb	5' 1/2"	7943 lb	0.279 (28%)	D+S	L
LL Defl inch	0.034 (L/1988)	3'	0.141 (L/480)	0.240 (24%)	S	L
TL Defl inch	0.068 (L/988)	3'	0.188 (L/360)	0.360 (36%)	D+S	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top braced at bearings.
- Bottom braced at 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	540 PLF	0 PLF	540 PLF	0 PLF	0 PLF	A1
	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

- 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 2/26/2023

Manufacturer Info

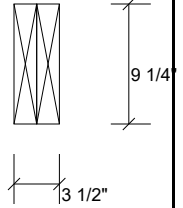
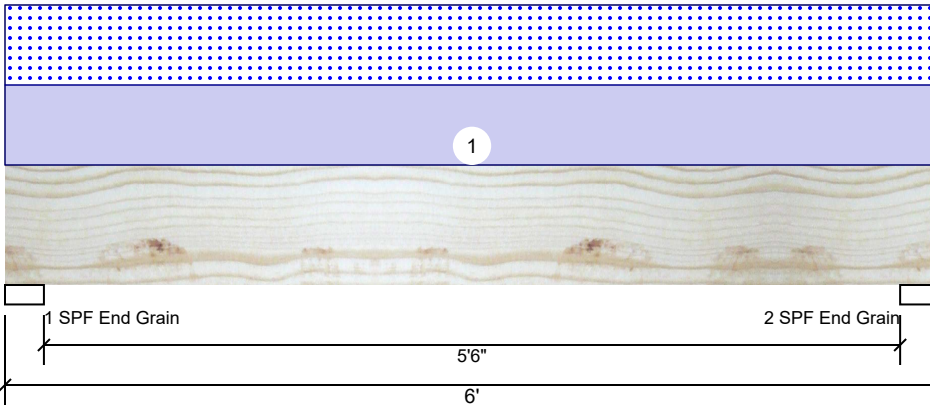
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HDR2 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

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 2012
Load Sharing:	No
Deck:	Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	1300	1278	0	0
2	0	1300	1278	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	28%	1300 / 1278	2578	L	D+S
2 - SPF End Grain	3.000"	28%	1300 / 1278	2578	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3398 ft-lb	3'	14423 ft-lb	0.236 (24%)	D+S	L
Unbraced	3398 ft-lb	3'	10944 ft-lb	0.310 (31%)	D+S	L
Shear	1754 lb	5' 1/2"	7943 lb	0.221 (22%)	D+S	L
LL Defl inch	0.027 (L/2521)	3'	0.141 (L/480)	0.190 (19%)	S	L
TL Defl inch	0.054 (L/1250)	3'	0.188 (L/360)	0.290 (29%)	D+S	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top braced at bearings.
- Bottom braced at 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	426 PLF	0 PLF	426 PLF	0 PLF	0 PLF	A1
	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

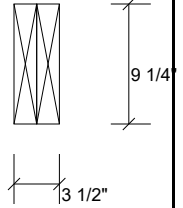
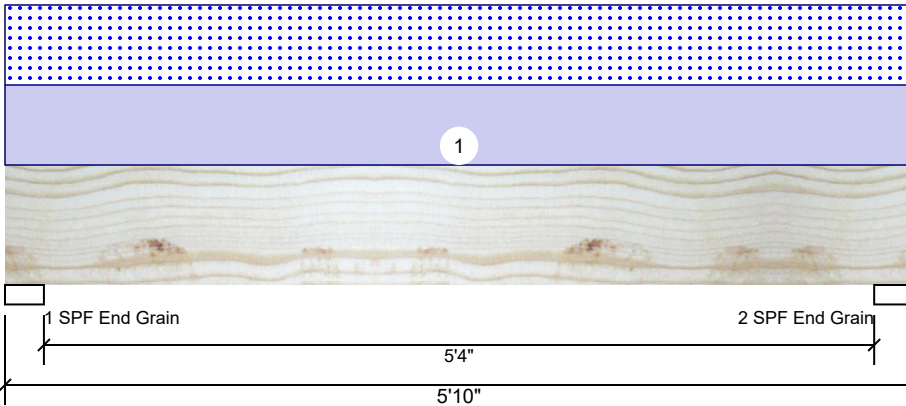
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HDR3 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

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 2012
Load Sharing:	No
Deck:	Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	1234	1213	0	0
2	0	1234	1213	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.000"	27%	1234 / 1213	2448	L	D+S
2 - SPF End Grain	3.000"	27%	1234 / 1213	2448	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3125 ft-lb	2'11"	14423 ft-lb	0.217 (22%)	D+S	L
Unbraced	3125 ft-lb	2'11"	11110 ft-lb	0.281 (28%)	D+S	L
Shear	1643 lb	11 1/2"	7943 lb	0.207 (21%)	D+S	L
LL Defl inch	0.024 (L/2786)	2'11"	0.136 (L/480)	0.170 (17%)	S	L
TL Defl inch	0.047 (L/1381)	2'11"	0.182 (L/360)	0.260 (26%)	D+S	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top braced at bearings.
- Bottom braced at 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	416 PLF	0 PLF	416 PLF	0 PLF	0 PLF	A3
	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

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

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

- For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/26/2023

Manufacturer Info

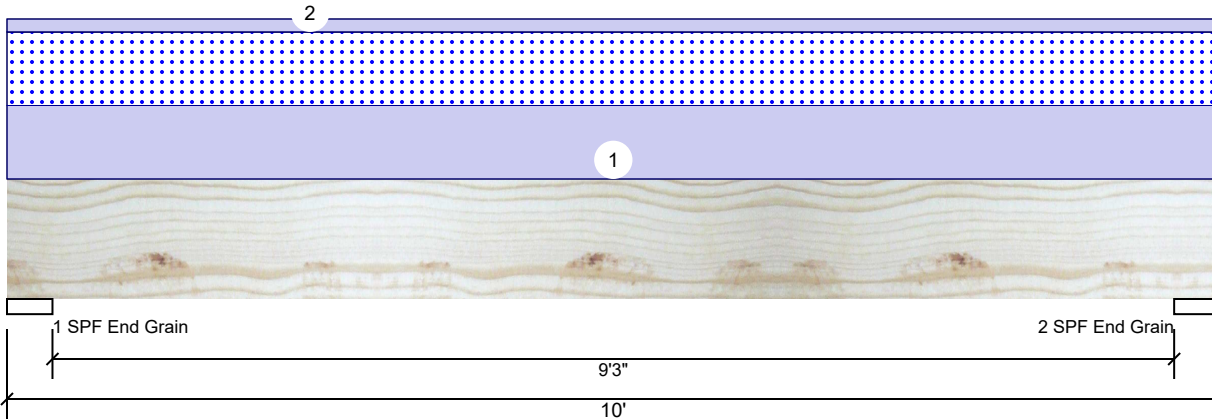
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GDH-9 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	2	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC 2012
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	1711	1415	0	0
2	0	1711	1415	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	4.500"	23%	1711 / 1415	3126	L	D+S
2 - SPF End Grain	4.500"	23%	1711 / 1415	3126	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	6869 ft-lb	5'	22897 ft-lb	0.300 (30%)	D+S	L
Unbraced	6869 ft-lb	5'	9857 ft-lb	0.697 (70%)	D+S	L
Shear	2312 lb	1'3 5/8"	10197 lb	0.227 (23%)	D+S	L
LL Defl inch	0.059 (L/1908)	5'	0.234 (L/480)	0.250 (25%)	S	L
TL Defl inch	0.130 (L/863)	5'	0.312 (L/360)	0.420 (42%)	D+S	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top braced at bearings.
- Bottom braced at 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	283 PLF	0 PLF	283 PLF	0 PLF	0 PLF	D1
2	Uniform			Top	50 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
	Self Weight				9 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

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

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 2/26/2023

Manufacturer Info

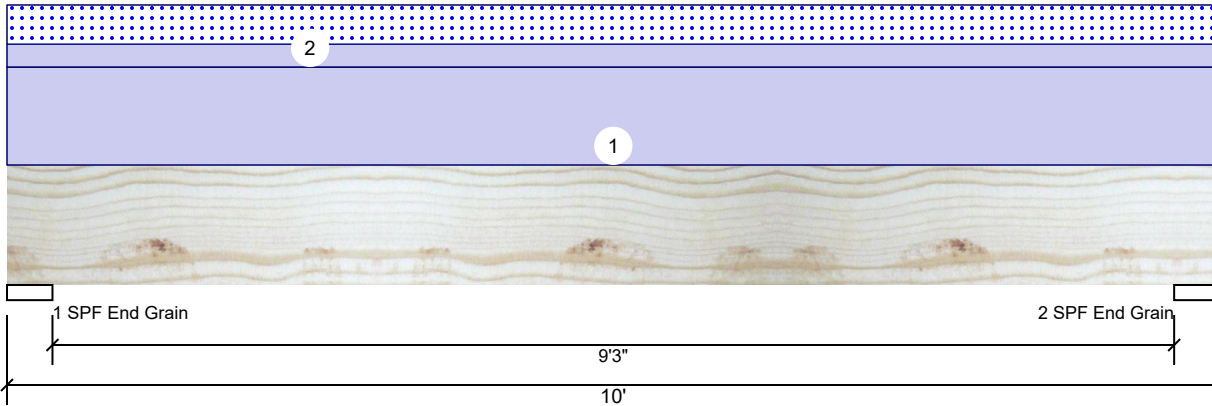
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GDH Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

Type: Girder	Application: Floor
Plies: 2	Design Method: ASD
Moisture Condition: Dry	Building Code: IBC 2012
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	971	300	0	0
2	0	971	300	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	4.500"	9%	971 / 300	1271	L	D+S
2 - SPF End Grain	4.500"	9%	971 / 300	1271	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2793 ft-lb	5'	22897 ft-lb	0.122 (12%)	D+S	L
Unbraced	2793 ft-lb	5'	9857 ft-lb	0.283 (28%)	D+S	L
Shear	940 lb	1'3 5/8"	10197 lb	0.092 (9%)	D+S	L
LL Defl inch	0.013 (L/8998)	5'	0.234 (L/480)	0.050 (5%)	S	L
TL Defl inch	0.053 (L/2124)	5'	0.312 (L/360)	0.170 (17%)	D+S	L

Design Notes

- Girders are designed to be supported on the bottom edge only.
- Multiple plies must be fastened together as per manufacturer's details.
- Top loads must be supported equally by all plies.
- Top braced at bearings.
- Bottom braced at 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	150 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL
2	Uniform			Top	35 PLF	0 PLF	60 PLF	0 PLF	0 PLF	ROOF+FLOOR
	Self Weight				9 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

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

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 2/26/2023

Manufacturer Info

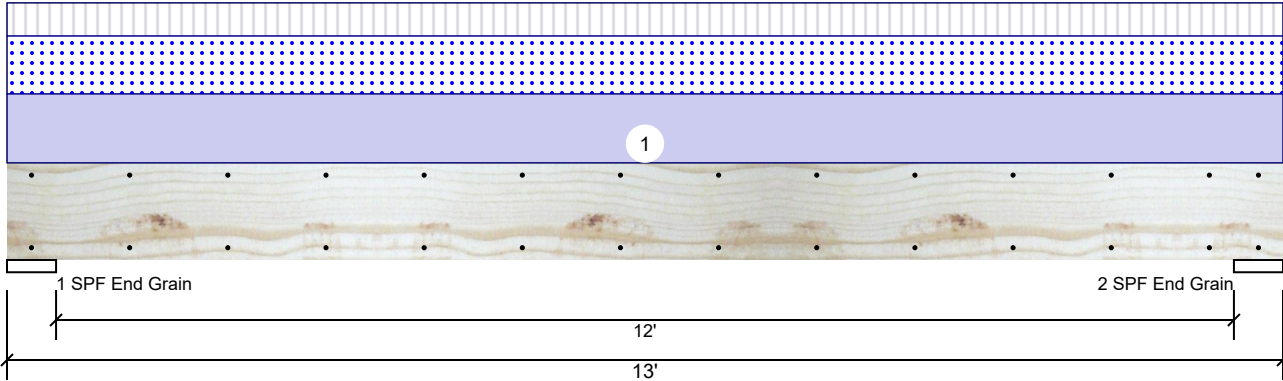
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BM1 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

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 2012
Load Sharing:	No
Deck:	Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	1073	2296	1879	0	0
2	1073	2296	1879	0	0

Bearings

Bearing	Length	Cap.	React D/L	Ib	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	6.000"	25%	2296 / 2213	4509	L	D+0.75(L+S)	
2 - SPF End Grain	6.000"	25%	2296 / 2213	4509	L	D+0.75(L+S)	

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	12749 ft-lb	6'6"	22897 ft-lb	0.557 (56%)	D+0.75(L+S)	L
Unbraced	12749 ft-lb	6'6"	12750 ft-lb	1.000 (100%)	D+0.75(L+S)	L
Shear	3519 lb	1'5 1/8"	10197 lb	0.345 (35%)	D+0.75(L+S)	L
LL Defl inch	0.187 (L/779)	6'6"	0.303 (L/480)	0.620 (62%)	0.75(L+S)	L
TL Defl inch	0.381 (L/382)	6'6"	0.404 (L/360)	0.940 (94%)	D+0.75(L+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 6'8 1/4" 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	344 PLF	165 PLF	289 PLF	0 PLF	0 PLF	ROOF
	Self Weight				9 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 2/26/2023

Manufacturer Info

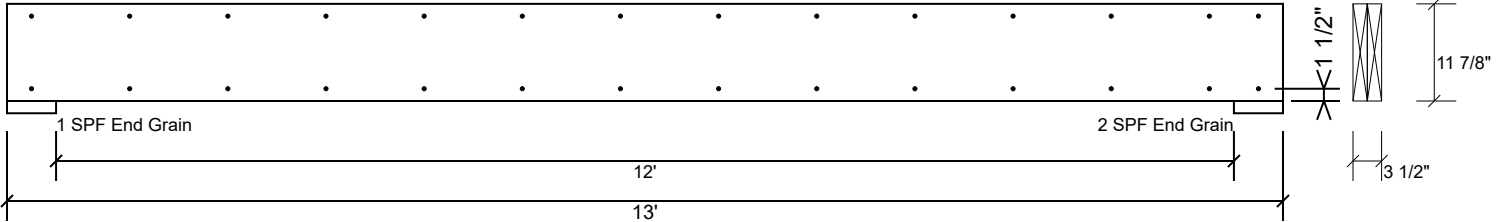
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BM1 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

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

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	163.7 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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 2/26/2023

Manufacturer Info

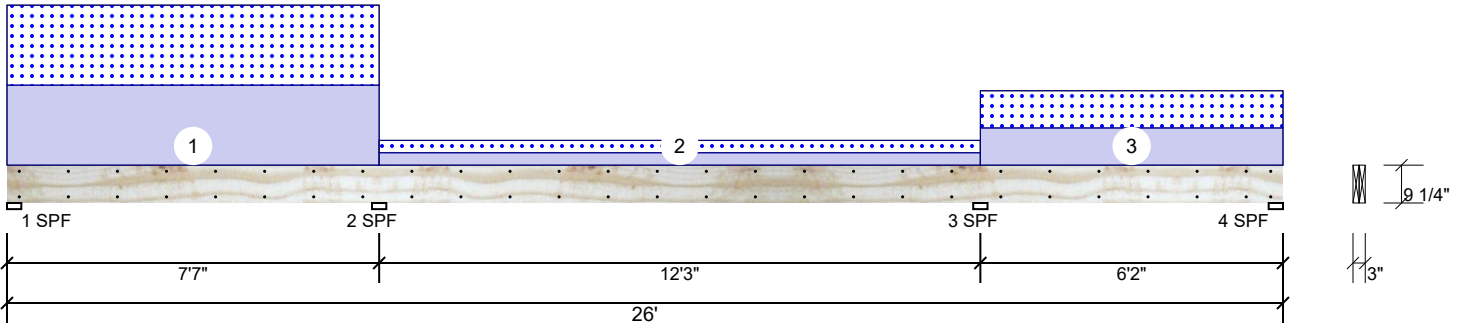
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PBM1 S-P-F #2 2.000" X 10.000" 2-Ply - PASSED

Level: Level



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		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED Ib (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	435	435	0	0
2	0	694	694	0	0
3	0	301	301	0	0
4	0	164	164	0	0

Bearings

Bearing	Length	Cap. React D/L Ib	Total Ld. Case	Ld. Comb.
1 - SPF	3.500"	20% 435 / 446	881 L_L	D+S
2 - SPF	3.500"	31% 694 / 701	1395 LL_	D+S
3 - SPF	3.500"	14% 301 / 331	632 _LL	D+S
4 - SPF	3.500"	8% 164 / 180	344 L_L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-1034 ft-lb	7'7"	3946 ft-lb	0.262 (26%)	D+S	LL_
Unbraced	-1034 ft-lb	7'7"	2516 ft-lb	0.411 (41%)	D+S	LL_
Pos Moment	1309 ft-lb	3'5"	3946 ft-lb	0.332 (33%)	D+S	L_L
Unbraced	1309 ft-lb	3'5"	3357 ft-lb	0.390 (39%)	D+S	L_L
Shear	890 lb	6'9 3/4"	2872 lb	0.310 (31%)	D+S	LL_
LL Defl inch	0.022 (L/4044)	3'8 9/16"	0.184 (L/480)	0.120 (12%)	S	L_L
TL Defl inch	0.042 (L/2109)	3'8 1/4"	0.245 (L/360)	0.170 (17%)	D+S	L_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	Part. Uniform	0-0-0 to 7-7-0		Top	129 PLF	0 PLF	129 PLF	0 PLF	0 PLF	A3
2	Part. Uniform	7-7-0 to 19-10-0		Top	20 PLF	0 PLF	20 PLF	0 PLF	0 PLF	A1
3	Part. Uniform	19-10-0 to 26-0-0		Top	60 PLF	0 PLF	60 PLF	0 PLF	0 PLF	B2

Manufacturer Info

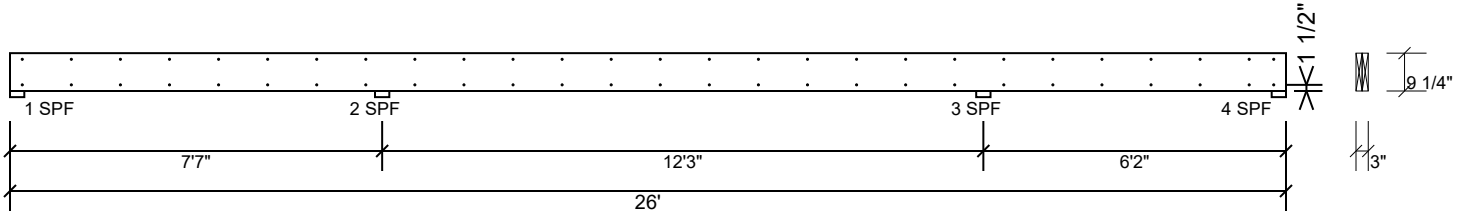
Comtech, Inc.
 1001 S. Reilly Road, Suite #639
 Fayetteville, NC
 USA
 28314
 910-864-TRUS



This design is valid until 2/26/2023

PBM1 S-P-F #2 2.000" X 10.000" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

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

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	157.4 PLF
Yield Limit per Fastener	78.7 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

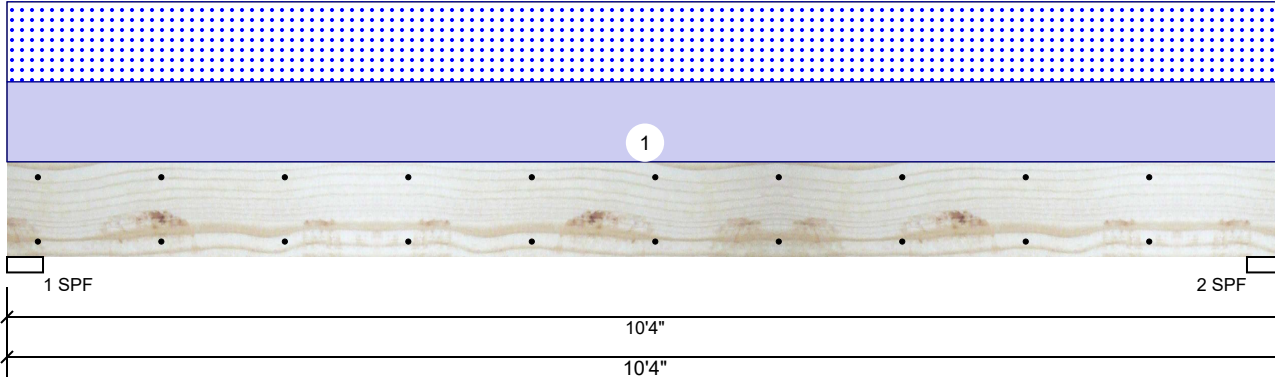
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This design is valid until 2/26/2023

PBM2 S-P-F #2 2.000" X 10.000" 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 2012
Load Sharing:	No
Deck:	Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	145	145	0	0
2	0	145	145	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	6%	145 / 145	289	L	D+S
2 - SPF	3.500"	6%	145 / 145	289	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	683 ft-lb	5'2"	3946 ft-lb	0.173 (17%)	D+S	L
Unbraced	683 ft-lb	5'2"	2930 ft-lb	0.233 (23%)	D+S	L
Shear	233 lb	1'	2872 lb	0.081 (8%)	D+S	L
LL Defl inch	0.022 (L/5479)	5'2"	0.247 (L/480)	0.090 (9%)	S	L
TL Defl inch	0.043 (L/2740)	5'2"	0.329 (L/360)	0.130 (13%)	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	28 PLF	0 PLF	28 PLF	0 PLF	0 PLF	JB-3

Manufacturer Info

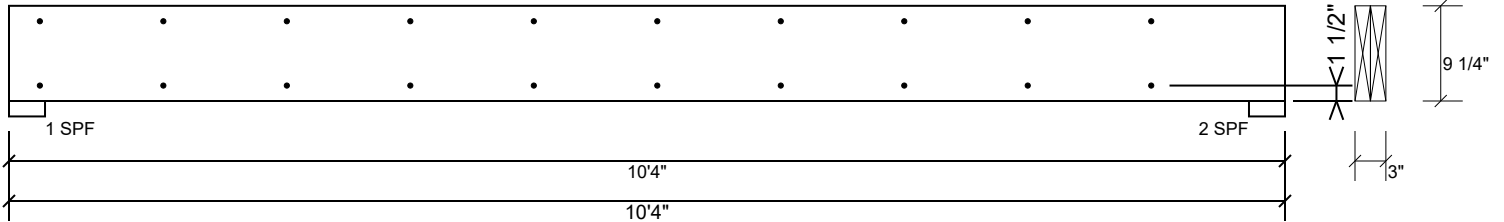
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This design is valid until 2/26/2023

PBM2 S-P-F #2 2.000" X 10.000" 2-Ply - PASSED


Level: Level



Multi-Ply Analysis

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

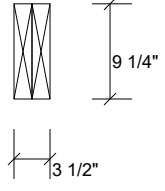
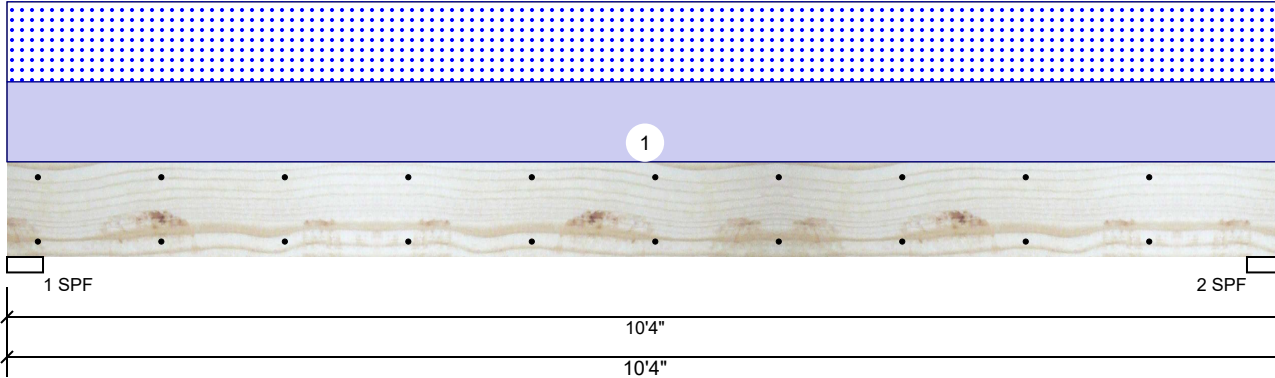
Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	157.4 PLF
Yield Limit per Fastener	78.7 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

<p>Manufacturer Info</p>	<p>Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS</p>
	

This design is valid until 2/26/2023

PBM3 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 2012
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	1045	1008	0	0
2	0	1045	1008	0	0

Bearings

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	39%	1045 / 1008	2052	L	D+S
2 - SPF	3.500"	39%	1045 / 1008	2052	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	4842 ft-lb	5'2"	14423 ft-lb	0.336 (34%)	D+S	L
Unbraced	4842 ft-lb	5'2"	7494 ft-lb	0.646 (65%)	D+S	L
Shear	1655 lb	9'4"	7943 lb	0.208 (21%)	D+S	L
LL Defl inch	0.099 (L/1199)	5'2"	0.247 (L/480)	0.400 (40%)	S	L
TL Defl inch	0.201 (L/589)	5'2"	0.329 (L/360)	0.610 (61%)	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	195 PLF	0 PLF	195 PLF	0 PLF	0 PLF	E1
	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 2/26/2023

Manufacturer Info

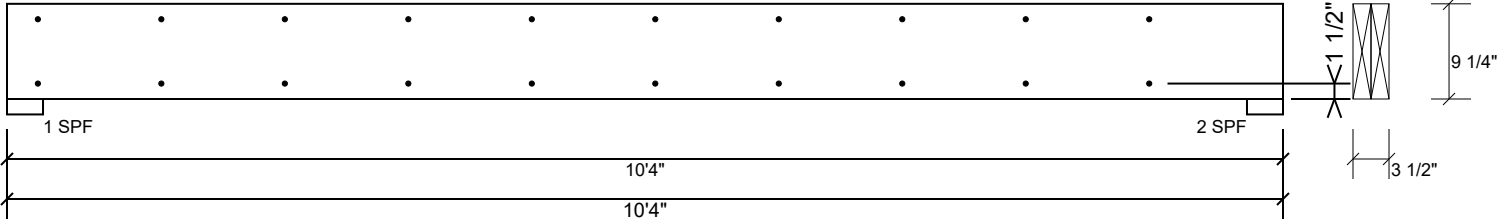
Metsä Wood
 301 Merritt 7 Building, 2nd Floor
 Norwalk, CT 06851
 (800) 622-5850
www.metsawood.com/us
 ICC-ES: ESR-3633

Comtech, Inc.
 1001 S. Reilly Road, Suite #639
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PBM3 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

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

Capacity	0.0 %
Load	0.0 PLF
Yield Limit per Foot	163.7 PLF
Yield Limit per Fastener	81.9 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	
Duration Factor	1.00

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

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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 2/26/2023

Manufacturer Info

Metsä Wood
 301 Merritt 7 Building, 2nd Floor
 Norwalk, CT 06851
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