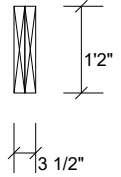
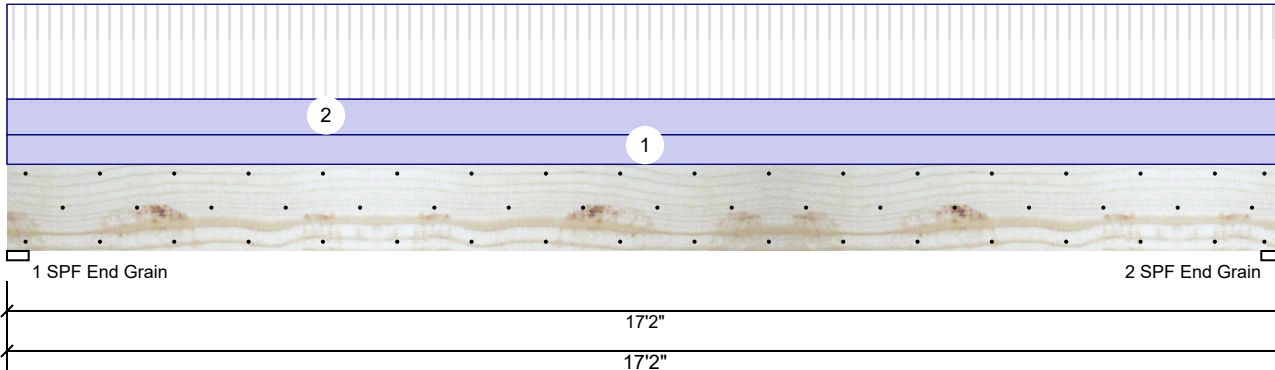


**BM1 Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED**

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 lb (Uplift)**

Brg	Live	Dead	Snow	Wind	Const
1	2060	1510	0	0	0
2	2060	1510	0	0	0

**Bearings**

Bearing	Length	Cap.	React D/L	lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	33%	1510 / 2060	3570	L	D+L	
2 - SPF End Grain	3.500"	33%	1510 / 2060	3570	L	D+L	

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	14513 ft-lb	8'7"	26999 ft-lb	0.538 (54%)	D+L	L
Unbraced	14513 ft-lb	8'7"	14550 ft-lb	0.997 (100%)	D+L	L
Shear	2989 lb	15'9 1/4"	10453 lb	0.286 (29%)	D+L	L
LL Defl inch	0.283 (L/709)	8'7 1/16"	0.418 (L/480)	0.680 (68%)	L	L
TL Defl inch	0.490 (L/409)	8'7 1/16"	0.557 (L/360)	0.880 (88%)	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 must be laterally braced at a maximum of 6'11 1/4" o.c.
- 6 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	75 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Half Wall
2	Tie-In	0-0-0 to 17-2-0	(Span)12-0-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Floor 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

This design is valid until 12/11/2021

**Manufacturer Info**

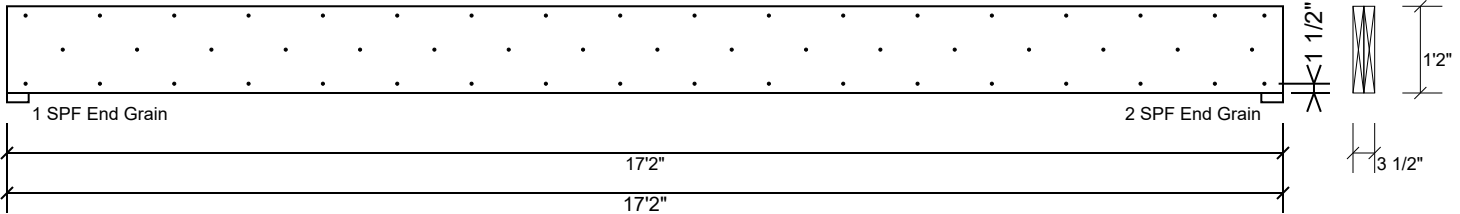
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**BM1 Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED**

Level: Level


**Multi-Ply Analysis**

Fasten all plies using 3 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	245.6 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**

- 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

- For flat roofs provide proper drainage to prevent ponding

This design is valid until 12/11/2021

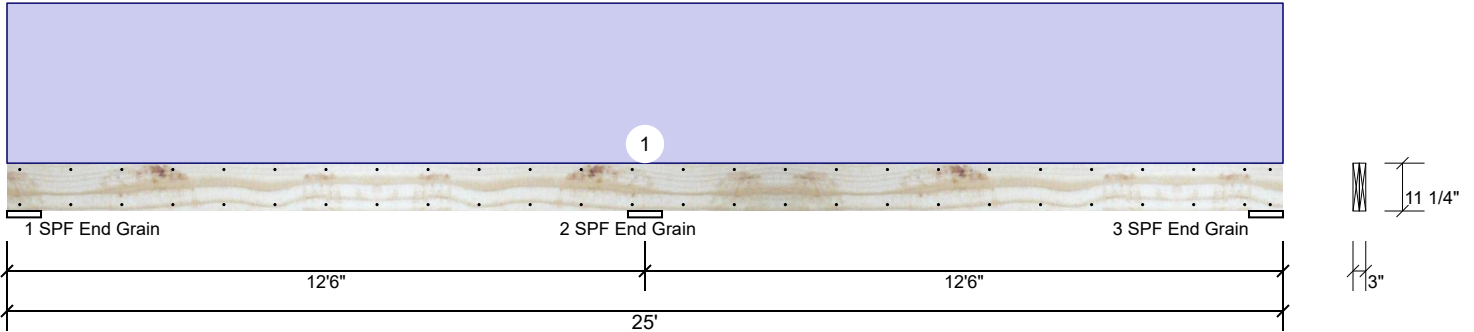
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**BM2 S-P-F #2 2.000" X 12.000" 2-Ply - PASSED**

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/IRC 2015
Load Sharing:	No
Deck:	Not Checked

**Reactions UNPATTERNED lb (Uplift)**

Brg	Live	Dead	Snow	Wind	Const
1	0	912	0	0	0
2	0	2677	0	0	0
3	0	912	0	0	0

**Bearings**

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	8.000"	9%	912 / 0	912	Uniform	D
2 - SPF End Grain	8.000"	26%	2677 / 0	2677	Uniform	D
3 - SPF End Grain	8.000"	9%	912 / 0	912	Uniform	D

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-3184 ft-lb	12'6"	4153 ft-lb	0.767 (77%)	D	Uniform
Pos Moment	1791 ft-lb	5' 3/4"	4153 ft-lb	0.431 (43%)	D	Uniform
Unbraced	1791 ft-lb	5' 3/4"	3460 ft-lb	0.518 (52%)	D	Uniform
Shear	1170 lb	11'6 3/4"	2734 lb	0.428 (43%)	D	Uniform
LL Defl inch	0.000 (L/999)	0	999.000 (L/0)	0.000 (0%)		
TL Defl inch	0.068 (L/2109)	5'7 7/16"	0.397 (L/360)	0.170 (17%)	D	Uniform

**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 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	180 PLF	0 PLF	0 PLF	0 PLF	0 PLF	B1GE

**Manufacturer Info**

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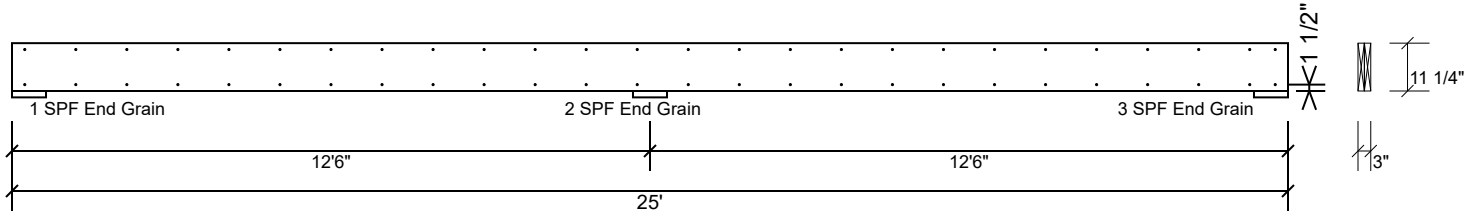


This design is valid until 12/11/2021



**BM2 S-P-F #2 2.000" X 12.000" 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

**Manufacturer Info**

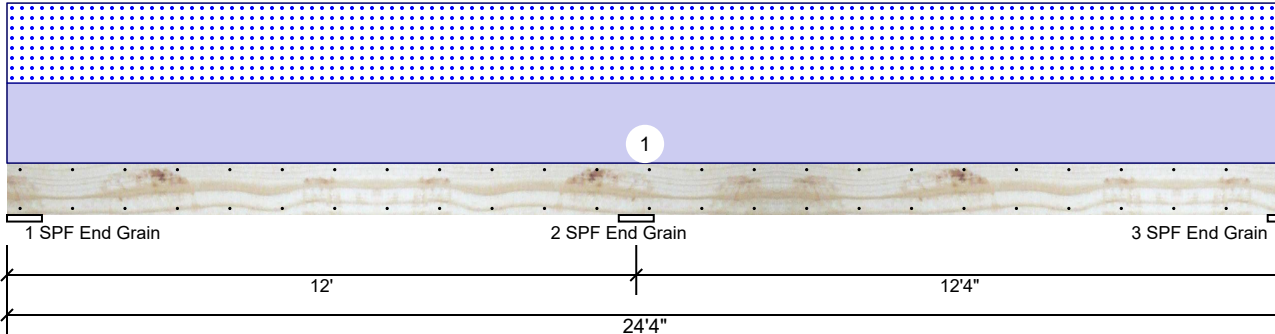
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This design is valid until 12/11/2021



**BM3 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	1877	1832	0	0
2	0	5669	5534	0	0
3	0	1902	1857	0	0

**Bearings**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	8.000"	16%	1857 / 1970	3827	L_	D+S
2 - SPF End Grain	8.000"	46%	5706 / 5571	11277	LL	D+S
3 - SPF End Grain	3.500"	36%	1884 / 1962	3846	_L	D+S

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-13277 ft-lb	12'	22897 ft-lb	0.580 (58%)	D+S	LL
Pos Moment	8776 ft-lb	19'3 7/8"	22897 ft-lb	0.383 (38%)	D+S	_L
Unbraced	8776 ft-lb	19'3 7/8"	9701 ft-lb	0.905 (90%)	D+S	_L
Shear	4981 lb	12'11 7/8"	10197 lb	0.488 (49%)	D+S	LL
LL Defl inch	0.128 (L/1132)	18'6 3/8"	0.303 (L/480)	0.420 (42%)	S	_L
TL Defl inch	0.237 (L/614)	18'7 11/16"	0.403 (L/360)	0.590 (59%)	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 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	379 PLF	0 PLF	379 PLF	0 PLF	0 PLF	B1
	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 12/11/2021

**Manufacturer Info**

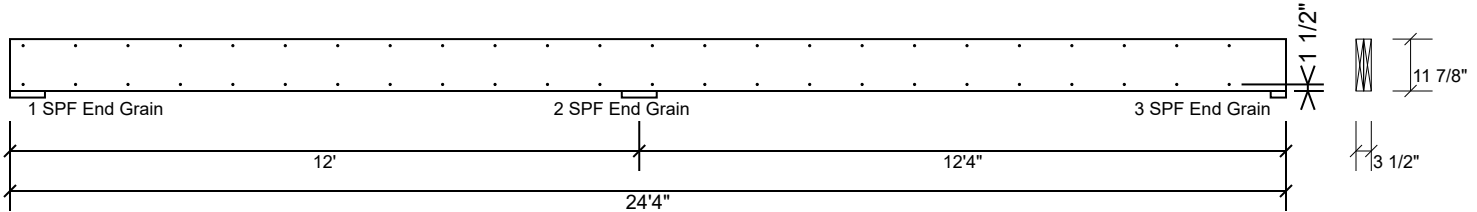
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**BM3 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED**

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
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3. Damaged Beams must not be used
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