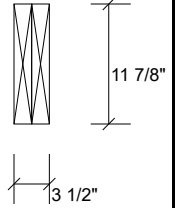
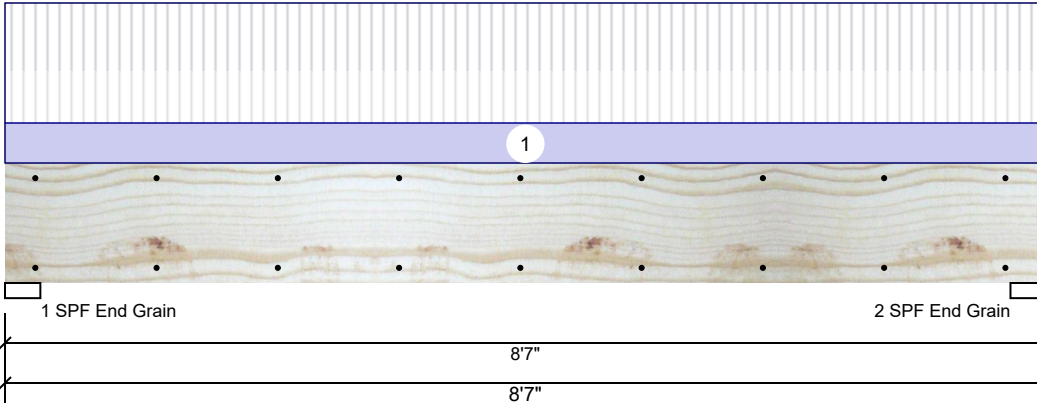


**BM1 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED**

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 - II	Ceiling: Gypsum 1/2"
Temperature: Temp <= 100°F	

**Reactions UNPATTERNED lb (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	4300	1473	0	0	0
2	Vertical	4300	1473	0	0	0

**Bearings**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	56%	1473 / 4300	5773	L	D+L
2 - SPF End Grain	3.500"	Vert	56%	1473 / 4300	5773	L	D+L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	11101 ft-lb	4'3 1/2"	19911 ft-lb	0.558 (56%)	D+L	L
Unbraced	11101 ft-lb	4'3 1/2"	11114 ft-lb	0.999 (100%)	D+L	L
Shear	4059 lb	1'3 3/8"	8867 lb	0.458 (46%)	D+L	L
LL Defl inch	0.124 (L/789)	4'3 9/16"	0.203 (L/480)	0.608 (61%)	L	L
TL Defl inch	0.166 (L/588)	4'3 9/16"	0.271 (L/360)	0.612 (61%)	D+L	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 7'10 7/16" o.c.
- 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	334 PLF	1002 PLF	0 PLF	0 PLF	0 PLF	F1
	Self Weight				9 PLF					

**Notes**

Calculated Structural 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**

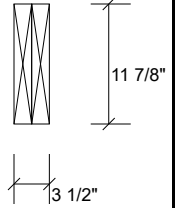
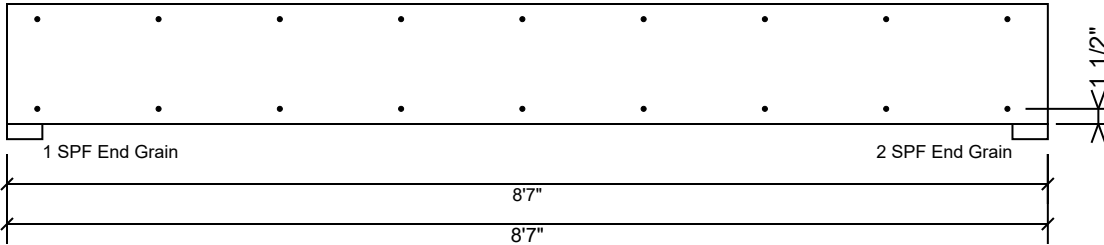
Metsä Wood  
 301 Merritt 7 Building, 2nd Floor  
 Norwalk, CT 06851  
 (800) 622-5850  
[www.metsawood.com/us](http://www.metsawood.com/us)

Comtech  
 Reilly Road Industrial Park P.O. Box 40408, NC  
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 28309  
 910-864-8787



**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 11/3/2024

**Manufacturer Info**

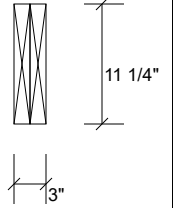
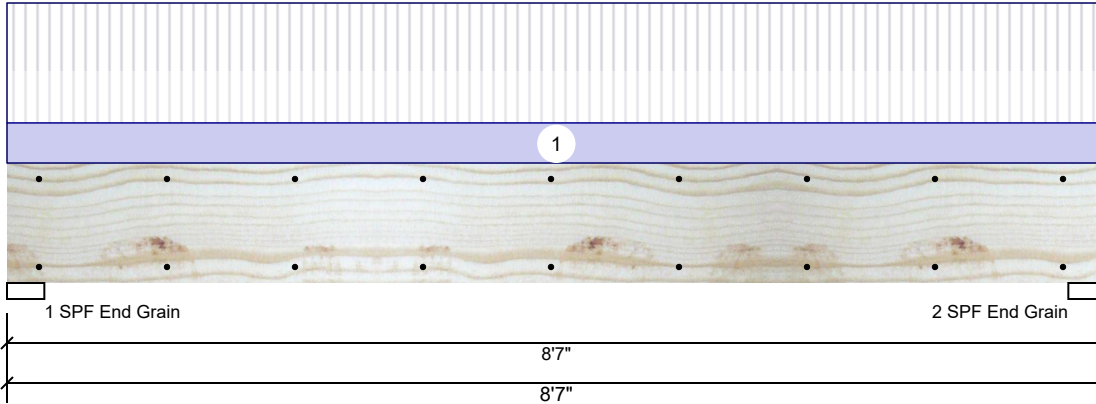
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**BM1x S-P-F #2 2.000" X 12.000" 2-Ply - PASSED**

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	Ceiling: Gypsum 1/2"
Temperature: Temp <= 100°F	

**Reactions UNPATTERNED lb (Uplift)**

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1502	502	0	0	0
2	Vertical	1502	502	0	0	0

**Bearings**

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	45%	502 / 1502	2004	L	D+L
2 - SPF End Grain	3.500"	Vert	45%	502 / 1502	2004	L	D+L

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	3854 ft-lb	4'3 1/2"	4614 ft-lb	0.835 (84%)	D+L	L
Unbraced	3854 ft-lb	4'3 1/2"	3859 ft-lb	0.999 (100%)	D+L	L
Shear	1430 lb	7'4 1/4"	3038 lb	0.471 (47%)	D+L	L
LL Defl inch	0.069 (L/1416)	4'3 9/16"	0.203 (L/480)	0.339 (34%)	L	L
TL Defl inch	0.092 (L/1061)	4'3 9/16"	0.271 (L/360)	0.339 (34%)	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 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 7'9 5/16" o.c.
- 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	117 PLF	350 PLF	0 PLF	0 PLF	0 PLF	F1

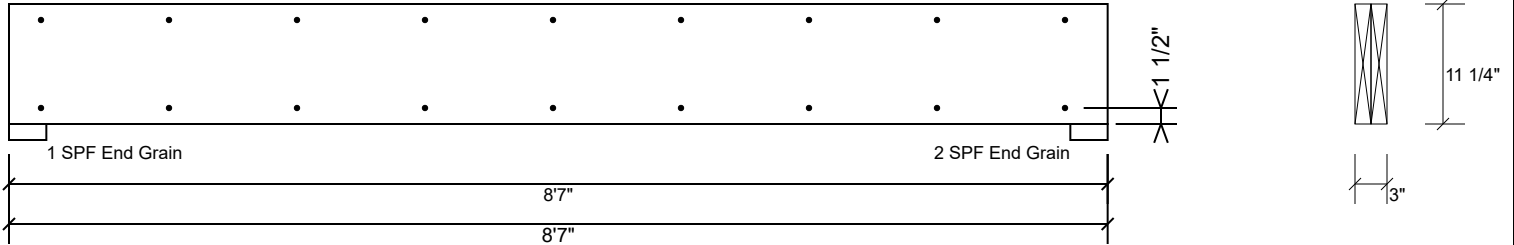
<b>Manufacturer Info</b>	Comtech Reilly Road Industrial Park P.O. Box 40408, NC USA 28309 910-864-8787
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This design is valid until 11/3/2024

**BM1x 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

<b>Manufacturer Info</b>	Comtech Reilly Road Industrial Park P.O. Box 40408, NC USA 28309 910-864-8787
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This design is valid until 11/3/2024