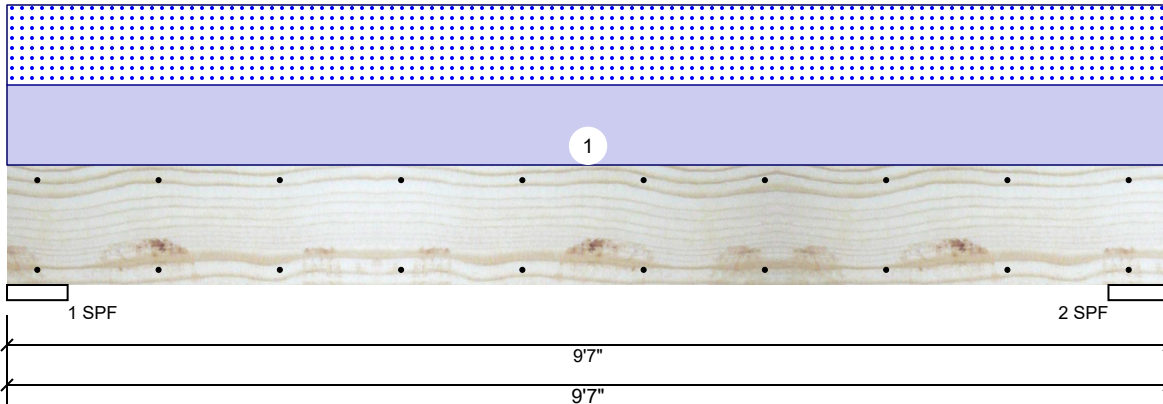


# BM1 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

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/IRC 2015
Load Sharing:	No
Deck:	Not Checked

## Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	2761	2717	0	0
2	0	2761	2717	0	0

## Bearings

Bearing	Length	Cap. React D/L lb	Total Ld. Case	Ld. Comb.
1 - SPF	6.000"	61% 2761 / 2717	5478 L	D+S
2 - SPF	6.000"	61% 2761 / 2717	5478 L	D+S

## Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	10837 ft-lb	4'9 1/2"	22897 ft-lb	0.473 (47%)	D+S	L
Unbraced	10837 ft-lb	4'9 1/2"	10848 ft-lb	0.999 (100%)	D+S	L
Shear	3847 lb	1'5 1/8"	10197 lb	0.377 (38%)	D+S	L
LL Defl inch	0.090 (L/1161)	4'9 1/2"	0.218 (L/480)	0.410 (41%)	S	L
TL Defl inch	0.181 (L/576)	4'9 1/2"	0.290 (L/360)	0.630 (63%)	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 must be laterally braced at a maximum of 8'3 3/8" 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	567 PLF	0 PLF	567 PLF	0 PLF	0 PLF	A1A
	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 11/13/2022

## Manufacturer Info

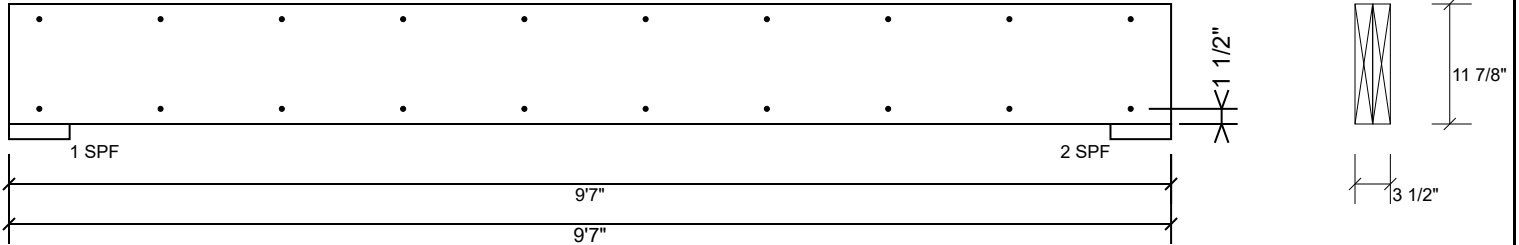
Metsä Wood  
 301 Merritt 7 Building, 2nd Floor  
 Norwalk, CT 06851  
 (800) 622-5850  
[www.metsawood.com/us](http://www.metsawood.com/us)  
 ICC-ES: ESR-3633

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



**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 11/13/2022

**Manufacturer Info**

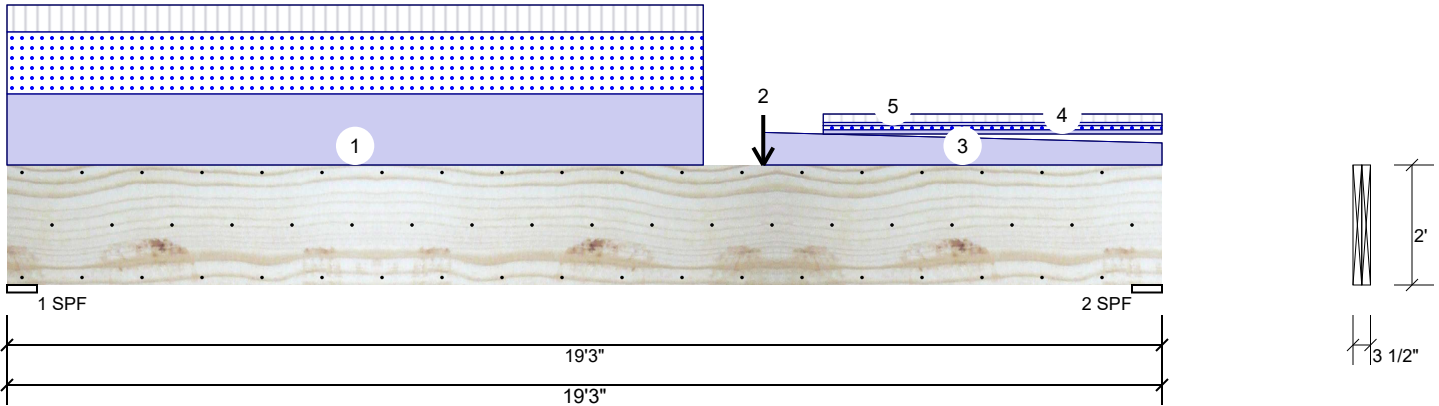
Metsä Wood  
 301 Merritt 7 Building, 2nd Floor  
 Norwalk, CT 06851  
 (800) 622-5850  
 www.metsawood.com/us  
 ICC-ES: ESR-3633

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



**GDH Kerto-S LVL 1.750" X 24.000" 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	1602	4179	3314	0	0
2	1653	4276	2819	0	0

**Bearings**

Bearing	Length	Cap. React	D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	6.000"	88%	4179 / 3687	7866	L	D+0.75(L+S)
2 - SPF	6.000"	85%	4276 / 3354	7630	L	D+0.75(L+S)

**Analysis Results**

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	42644 ft-lb	12' 7 1/4"	84163 ft-lb	0.507 (51%)	D+0.75(L+S)	L
Unbraced	42644 ft-lb	12' 7 1/4"	42861 ft-lb	0.995 (99%)	D+0.75(L+S)	L
Shear	7114 lb	16' 9 7/8"	20608 lb	0.345 (35%)	D+0.75(L+S)	L
LL Defl inch	0.171 (L/1289)	10'	0.460 (L/480)	0.370 (37%)	0.75(L+S)	L
TL Defl inch	0.368 (L/600)	10' 5/16"	0.613 (L/360)	0.600 (60%)	D+0.75(L+S)	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 4' 3/4" 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	Part. Uniform	0-0-0 to 11-7-4		Top	338 PLF	128 PLF	295 PLF	0 PLF	0 PLF	B1/2
2	Point	12-7-4		Top	3112 lb	1544 lb	2597 lb	0 lb	0 lb	B2GRD
3	Tapered Start	12-7-4		Top	155 PLF	0 PLF	0 PLF	0 PLF	0 PLF	gable
	End	19-3-0			105 PLF	0 PLF	0 PLF	0 PLF	0 PLF	
4	Part. Uniform	13-7-4 to 19-3-0		Top	20 PLF	0 PLF	20 PLF	0 PLF	0 PLF	roof
5	Part. Uniform	13-7-4 to 19-3-0		Top	15 PLF	40 PLF	0 PLF	0 PLF	0 PLF	floor
	Self Weight				19 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 11/13/2022

**Manufacturer Info**

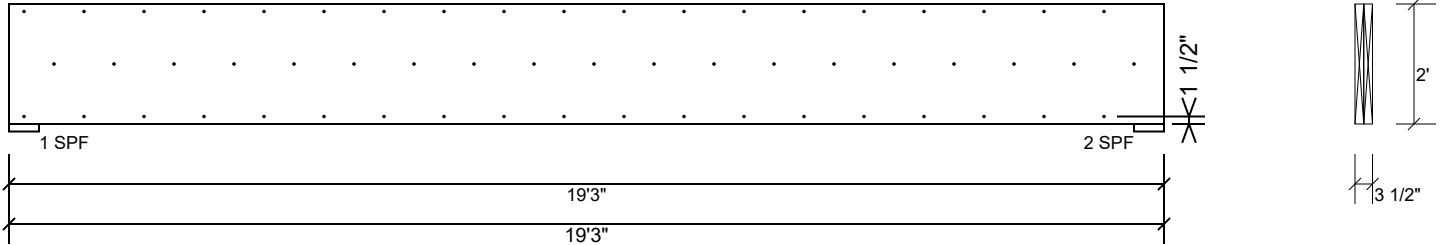
Metsä Wood  
 301 Merritt 7 Building, 2nd Floor  
 Norwalk, CT 06851  
 (800) 622-5850  
 www.metsawood.com/us  
 ICC-ES: ESR-3633

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



**GDH Kerto-S LVL 1.750" X 24.000" 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**

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 11/13/2022

**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)  
 ICC-ES: ESR-3633

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

