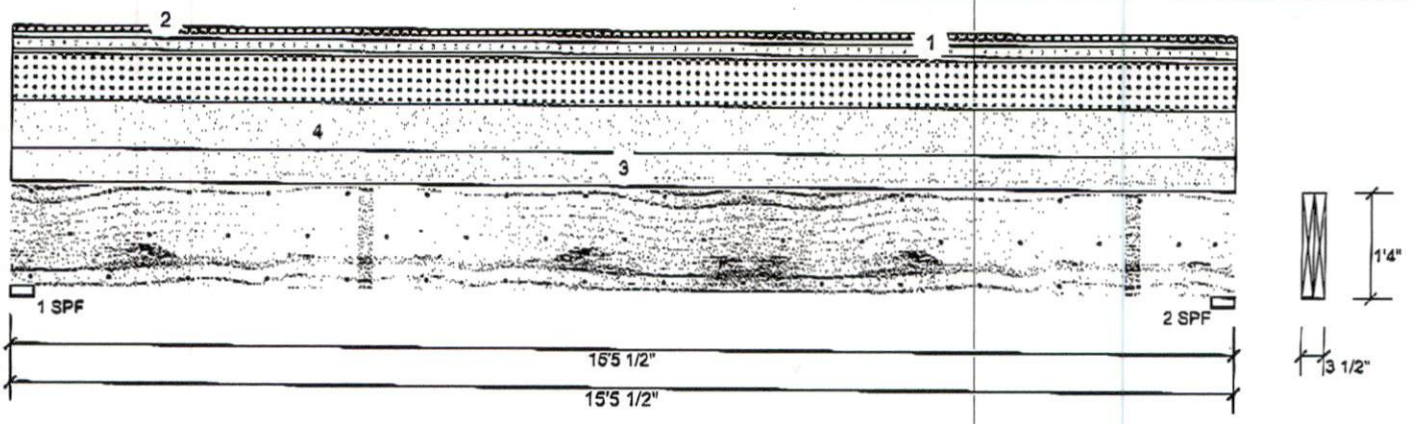
isDesign™

Client: Ben Stout Real Estate
Project:
Address:

Date: 4/7/2020
Designer: David Landry
Job Name: Appleton / BBH-2034
Project #: J0320-1198

BM1 Kerto-S LVL 1.750" X 16.000" 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	309	2562	1422	0	0
2	309	2562	1422	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	77%	2562 / 1422	3984	L	D+S
2 - SPF	3.500"	77%	2562 / 1422	3984	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	14537 ft-lb	7'8 3/4"	39750 ft-lb	0.366 (37%)	D+S	L
Unbraced	14537 ft-lb	7'8 3/4"	14550 ft-lb	0.999 (100%)	D+S	L
Shear	3621 lb	1'6 5/8"	13739 lb	0.264 (26%)	D+S	L
LL Defl inch	0.099 (L/1823)	7'8 13/16"	0.376 (L/480)	0.260 (26%)	S	L
TL Defl inch	0.277 (L/651)	7'8 13/16"	0.501 (L/360)	0.550 (55%)	D+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 8'1 7/8" 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	Tie-In	0-0-0 to 15-5-8	(Span)2-0-0	Top	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	Floor Load
2	Tie-In	0-0-0 to 15-5-8	(Span)2-0-0	Top	20 PSF	0 PSF	20 PSF	0 PSF	0 PSF	Roof Load
3	Uniform			Top	120 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
4	Uniform			Far Face	164 PLF	0 PLF	164 PLF	0 PLF	0 PLF	A3, A4
	Self Weight				12 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
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3833

Comtech, Inc.
1001 S. Reilly Road, Suite #689
Fayetteville, NC
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28314
910-864-TRUS

COMTECH

Version 18.80.245 Powered by iStruct™

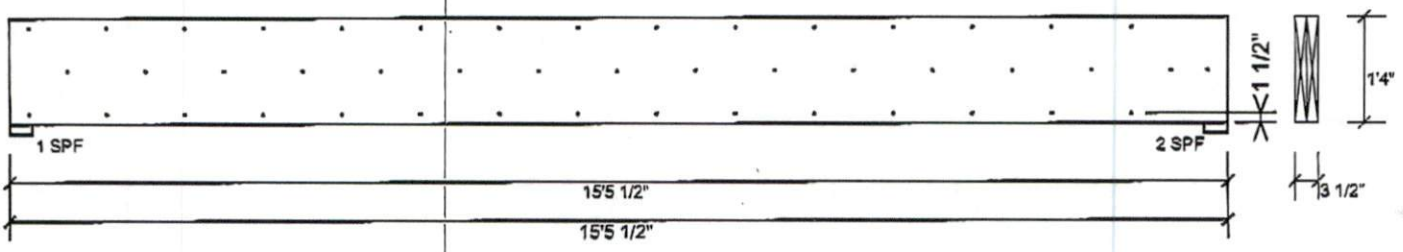
isDesign™

Client: Ben Stout Real Estate
Project:
Address:

Date: 4/7/2020
Designer: David Landry
Job Name: Appleton / BBH-2034
Project #: J0320-1198

BM1 Kerto-S LVL 1.750" X 16.000" 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	66.8 %
Load	164.0 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	D+S
Duration Factor	1.15

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

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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301 Merritt 7 Building, 2nd Floor
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Comtech, Inc.
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USA
28314
910-864-TRUS

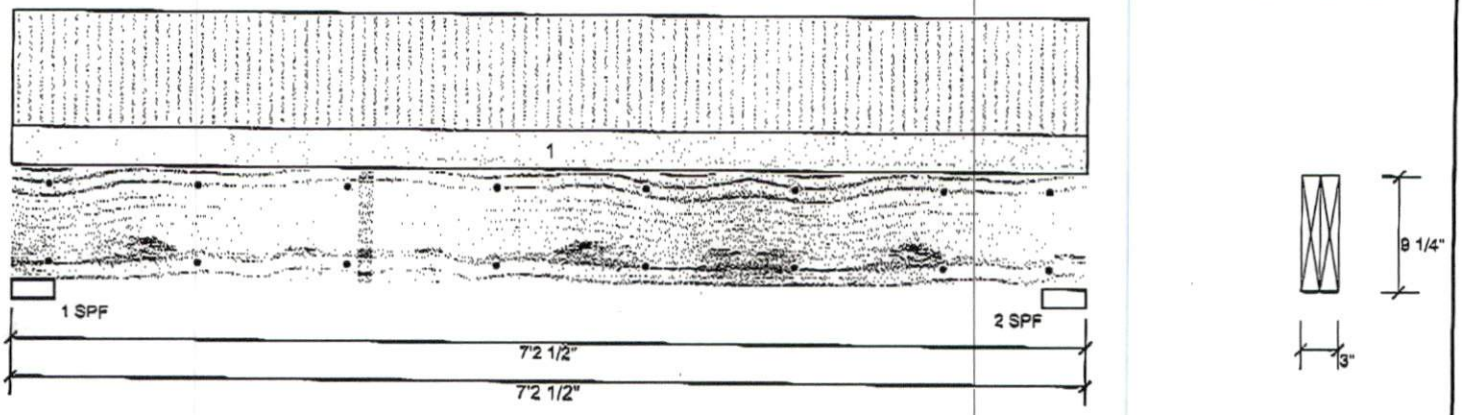
isDesign™

Client: Ben Stout Real Estate
Project:
Address:

Date: 4/7/2020
Designer: David Landry
Job Name: Appleton / BBH-2034
Project #: J0320-1198

BM2 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/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	1337	447	0	0	0
2	1337	447	0	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	40%	447 / 1337	1784	L	D+L
2 - SPF	3.500"	40%	447 / 1337	1784	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2819 ft-lb	3'7 1/4"	3431 ft-lb	0.822 (82%)	D+L	L
Unbraced	2819 ft-lb	3'7 1/4"	3113 ft-lb	0.906 (91%)	D+L	L
Shear	1289 lb	1'	2496 lb	0.516 (52%)	D+L	L
LL Defl inch	0.063 (L/1295)	3'7 5/16"	0.169 (L/480)	0.370 (37%)	L	L
TL Defl inch	0.083 (L/970)	3'7 5/16"	0.225 (L/360)	0.370 (37%)	D+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 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	124 PLF	371 PLF	0 PLF	0 PLF	0 PLF	F5

This design is valid until 12/11/2021

Manufacturer Info

Comtech, Inc.
1001 S. Reilly Road, Suite #538
Fayetteville, NC
USA
28314
910-864-TRUS

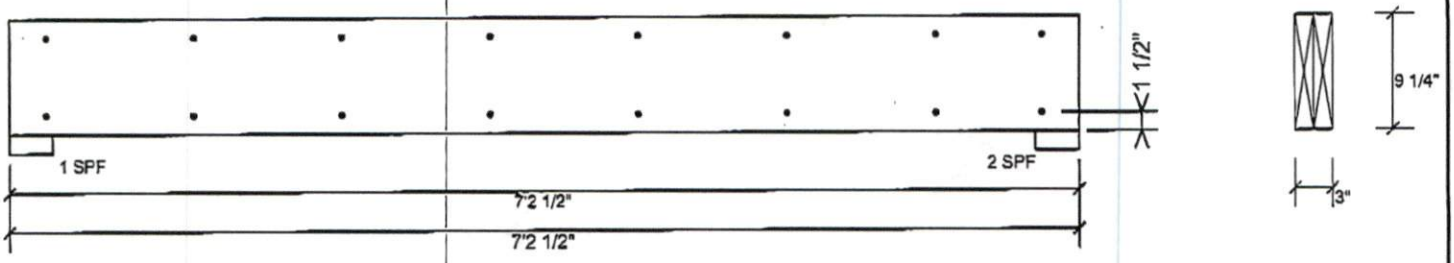
isDesign™

Client: Ben Stout Real Estate
Project:
Address:

Date: 4/7/2020
Designer: David Landry
Job Name: Appleton / BBH-2034
Project #: J0320-1198

BM2 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

Manufacturer Info

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

This design is valid until 12/11/2021

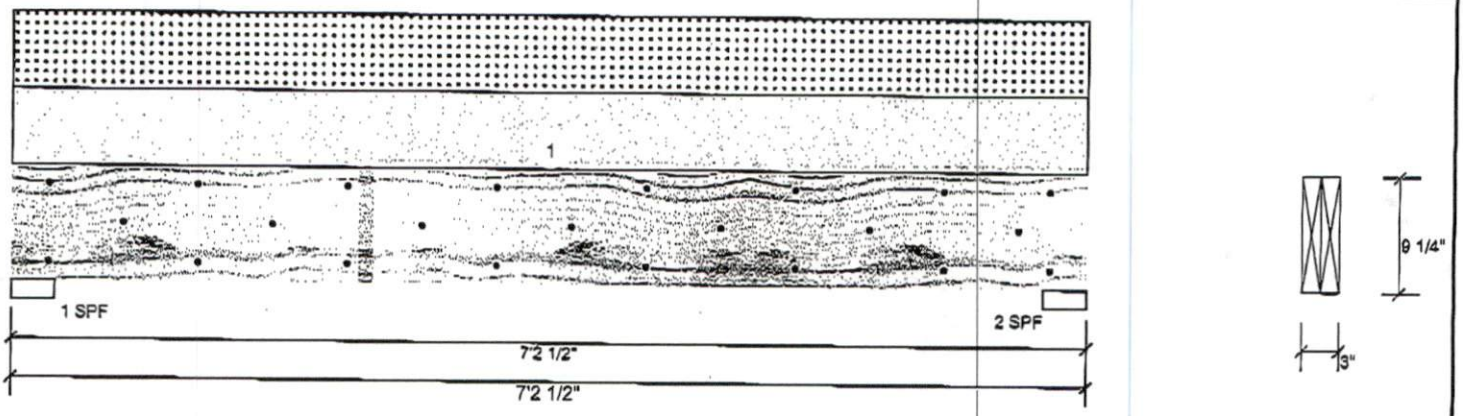
isDesign™

Client: Ben Stout Real Estate
Project:
Address:

Date: 4/7/2020
Designer: David Landry
Job Name: Appleton / BSH-2034
Project #: J0320-1198

BM3 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/IRC 2015
Load Sharing:	No
Deck:	Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	667	667	0	0
2	0	667	667	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	3.500"	30%	667 / 667	1334	L	D+S
2 - SPF	3.500"	30%	667 / 667	1334	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	2107 ft-lb	3'7 1/4"	3946 ft-lb	0.534 (53%)	D+S	L
Unbraced	2107 ft-lb	3'7 1/4"	3446 ft-lb	0.611 (61%)	D+S	L
Shear	1249 lb	1'	2872 lb	0.435 (43%)	D+S	L
LL Defl inch	0.031 (L/2597)	3'7 5/16"	0.169 (L/480)	0.180 (18%)	S	L
TL Defl inch	0.062 (L/1298)	3'7 5/16"	0.225 (L/360)	0.280 (28%)	D+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 braced at bearings.
5 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			Near Face	185 PLF	0 PLF	185 PLF	0 PLF	0 PLF	B3 - B6

This design is valid until 12/11/2021

Manufacturer Info

Comtech, Inc.
1001 S. Reilly Road, Suite 9639
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28314
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COMTECH

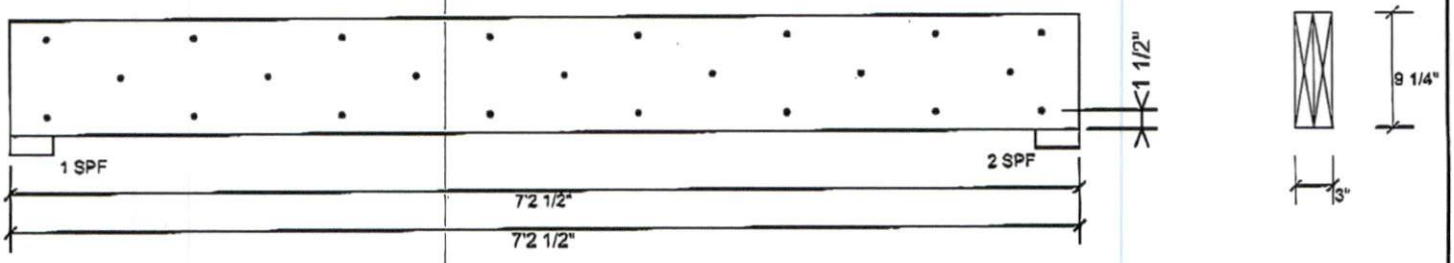
isDesign™

Client: Ben Stout Real Estate
Project:
Address:

Date: 4/7/2020
Designer: David Landry
Job Name: Appleton / BBH-2034
Project #: J0320-1198

BM3 S-P-F #2 2.000" X 10.000" 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	78.4 %
Load	185.0 PLF
Yield Limit per Foot	236.1 PLF
Yield Limit per Fastener	78.7 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+S
Duration Factor	1.15

Manufacturer Info

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USA
28314
910-864-TRUS

This design is valid until 12/11/2021

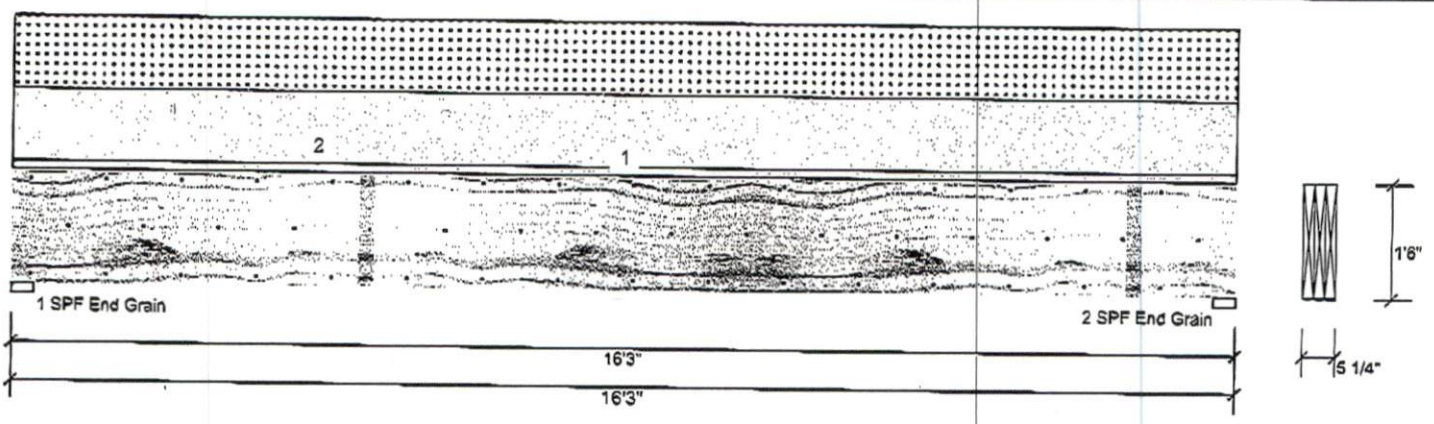
isDesign™

Client: Ben Stout Real Estate
Project:
Address:

Date: 4/7/2020
Designer: David Landry
Job Name: Appleton / BBH-2034
Project #: J0320-1198

GDH Kerto-S LVL 1.750" X 18.000" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder
Plies:	3
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:	Yes
Deck:	Not Checked

Reactions UNPATTERNED lb (Uplift)

Brg	Live	Dead	Snow	Wind	Const
1	0	5192	4534	0	0
2	0	5192	4534	0	0

Bearings

Bearing	Length	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	61%	5192 / 4534	9726	L	D+S
2 - SPF End Grain	3.500"	61%	5192 / 4534	9726	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	37412 ft-lb	8'1 1/2"	77108 ft-lb	0.485 (49%)	D+S	L
Unbraced	37412 ft-lb	8'1 1/2"	37476 ft-lb	0.998 (100%)	D+S	L
Shear	7668 lb	1'8 5/8"	23184 lb	0.331 (33%)	D+S	L
LL Defl inch	0.175 (L/1084)	8'1 9/16"	0.395 (L/480)	0.440 (44%)	S	L
TL Defl inch	0.376 (L/505)	8'1 9/16"	0.527 (L/360)	0.710 (71%)	D+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 5'3" 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	60 PLF	0 PLF	0 PLF	0 PLF	0 PLF	Wall
2	Uniform			Top	558 PLF	0 PLF	558 PLF	0 PLF	0 PLF	A1
	Self Weight				21 PLF					

Notes

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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
Metsä Wood
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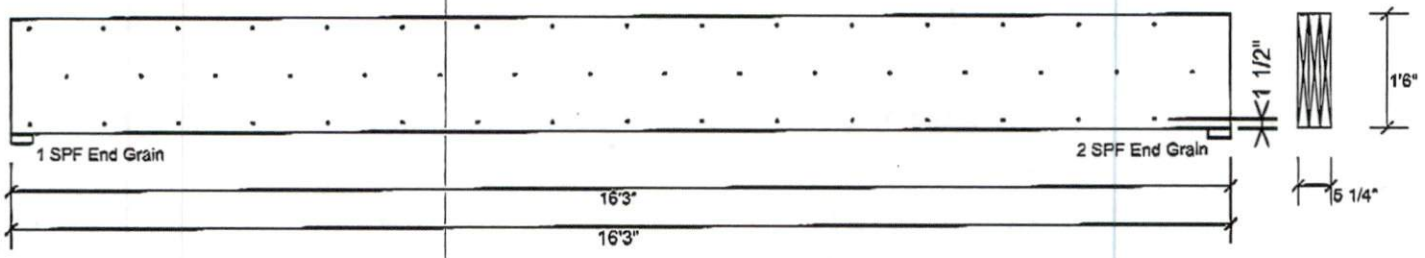
GDH Kerto-S LVL 1.750" X 18.000" 3-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c.. Nail from both sides. 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

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Lumber

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

Handling & Installation

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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

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