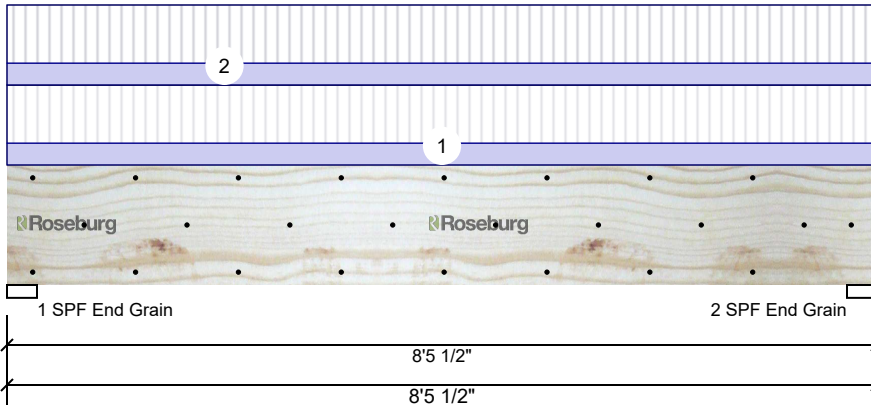


BM1 2.0E Rigidlam LVL 1.750" X 14.000" 2-Ply - PASSED

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:	240	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	2199	879	0	0	0
2	Vertical	2199	879	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	34%	879 / 2199	3079	L	D+L
2 - SPF End Grain	3.500"	Vert	34%	879 / 2199	3079	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	5823 ft-lb	4'2 3/4"	28972 ft-lb	0.201 (20%)	D+L	L
Unbraced	5823 ft-lb	4'2 3/4"	12871 ft-lb	0.452 (45%)	D+L	L
Shear	2866 lb	1'5 1/2"	9473 lb	0.303 (30%)	D+L	L
LL Defl inch	0.030 (L/3206)	4'2 13/16"	0.200 (L/480)	0.150 (15%)	L	L
TL Defl inch	0.042 (L/2291)	4'2 13/16"	0.400 (L/240)	0.105 (10%)	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 3 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 must be laterally braced at end bearings.
- 6 Bottom must be laterally braced at end 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		8-0-0	Far Face	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	FLOOR TRIB
2	Uniform		5-0-0	Near Face	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	FLOOR TRIB
	Self Weight				13 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

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

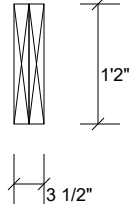
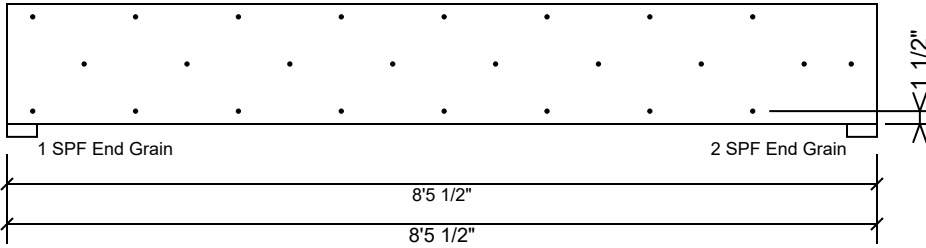
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ESR-1210

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BM1 2.0E Rigidlam 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	81.0 %
Load	220.0 PLF
Yield Limit per Foot	271.6 PLF
Yield Limit per Fastener	90.5 lb.
Yield Mode	IV
Edge Distance	1 1/2"
Min. End Distance	3"
Load Combination	D+L
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

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

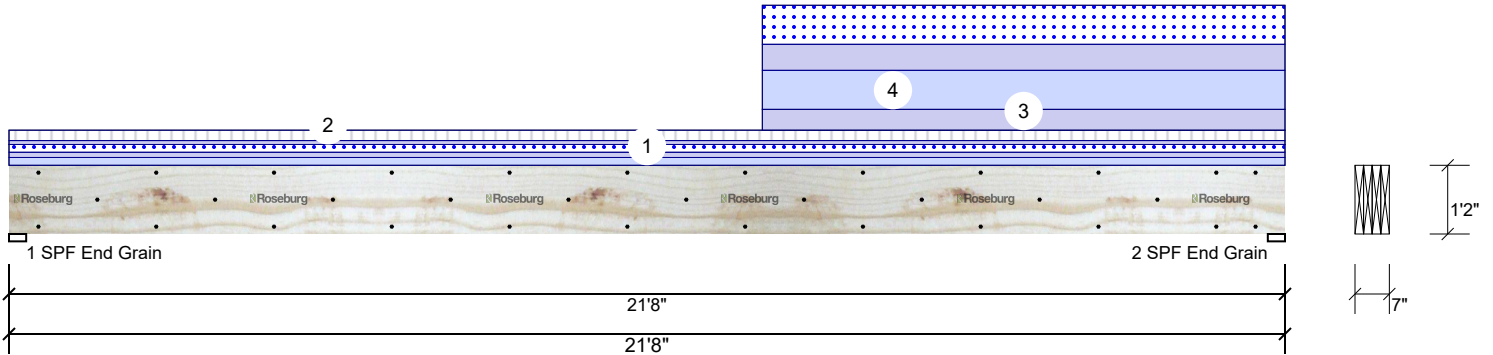
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BM2 2.0E Rigidlam LVL 1.750" X 14.000" 4-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	4	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IBC/IRC 2015
Deflection LL:	360	Load Sharing:	Yes
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	2817	2412	1402	0	1402
2	Vertical	2817	3375	2204	0	2204

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	30%	2412 / 3164	5576	L	D+0.75(L+S)
2 - SPF End Grain	3.500"	Vert	39%	3375 / 3766	7141	L	D+0.75(L+S)

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	28965 ft-lb	11'6 3/8"	60263 ft-lb	0.481 (48%)	D+L	L
Unbraced	32013 ft-lb	11'11 1/4"	32183 ft-lb	0.995 (99%)	D+0.75(L+S)	L
Shear	5797 lb	20'2 1/2"	18947 lb	0.306 (31%)	D+L	L
LL Defl inch	0.446 (L/571)	10'11 3/4"	0.707 (L/360)	0.631 (63%)	0.75(L+C)	Uniform
TL Defl inch	0.812 (L/313)	11' 7/16"	1.060 (L/240)	0.766 (77%)	D+0.75(L+C)	Uniform

Design Notes

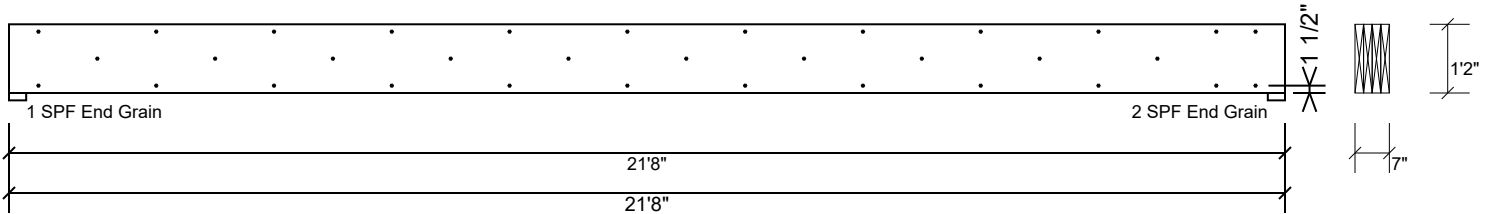
- 1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
- 2 Fasten all plies using 3 rows of SDW22634 at 24" o.c. Maximum end distance not to exceed 12".
- 3 Refer to last page of calculations for fasteners required for specified loads.
- 4 Simpson fasteners applied from a single side of the member use tip values where published.
- 5 Girders are designed to be supported on the bottom edge only.
- 6 Top loads must be supported equally by all plies.
- 7 Top must be laterally braced at a maximum of 6'4 9/16" o.c.
- 8 Bottom must be laterally braced at end bearings.
- 9 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		3-6-0	Near Face	20 PSF	0 PSF	30 PSF	0 PSF	30 PSF	ROOF TRIB
2	Uniform		6-6-0	Far Face	15 PSF	40 PSF	0 PSF	0 PSF	0 PSF	FLOOR TRIB
3	Part. Uniform	12-9-8 to 21-8-0		Top	80 PLF	0 PLF	0 PLF	0 PLF	0 PLF	WALL ABOVE
4	Part. Uniform	12-9-8 to 21-8-0		Top	100 PLF	0 PLF	150 PLF	0 PLF	150 PLF	GABLE ABOVE
	Self Weight				26 PLF					

<p>Notes</p> <p>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.</p> <p>Lumber</p> <ol style="list-style-type: none"> 1. Dry service conditions, unless noted otherwise 2. LVL not to be treated with fire retardant or corrosive chemicals 	<p>Handling & Installation</p> <ol style="list-style-type: none"> 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 	<p>6. For flat roofs provide proper drainage to prevent ponding</p>	<p>Manufacturer Info</p> <p>Roseburg Forest Products 4500 Riddle By-pass Rd Riddle, OR 97469 (541) 784-4005 www.roseburg.com APA: PR-L289, PR-L270, ICC-ES: ESR-1210</p>	<p>Riverside Roof Truss 733 River Park Drive, VA USA 24540 (434)793-0217</p>
			<p>This design is valid until 11/3/2024</p>	

BM2 2.0E Rigidlam LVL 1.750" X 14.000" 4-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of SDW22634 at 24" o.c.. Maximum end distance not to exceed 12".

Capacity	70.1 %
Load	268.1 PLF
Yield Limit per Foot	382.5 PLF
Yield Limit per Fastener	255.0 lb.
Yield Mode	Lookup
Edge Distance	1 1/2"
Min. End Distance	6"
Load Combination	D+L
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

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
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