

GS Beam® 5.008.2 (Build 140)  
kmBeamEngine 4.600y  
Materials Database 1381

**Member Data**

**Description: B01**  
ROOF GIRDER

Member Type: Girder

Application: Floor

Top Lateral Bracing: Continuous

Bottom Lateral Bracing: Continuous

Moisture Condition: Dry

Building Code: IBC/IRC

Deflection Criteria: L/360 live, L/240 total

Deck Connection: Nailed

Member Weight: 30.9 PLF

Filename: 51087 GIRDER

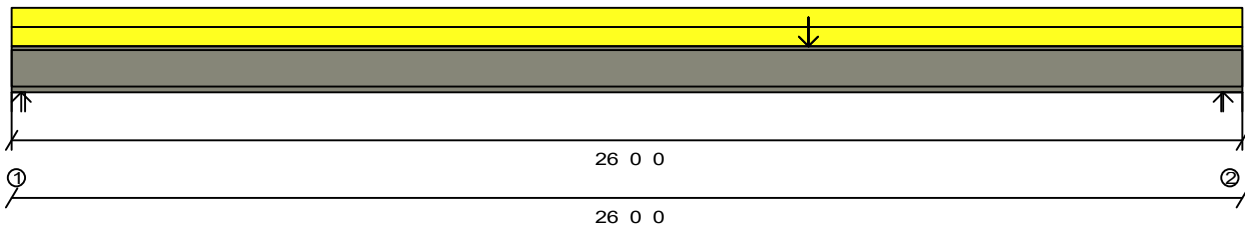
Standard Load:

Live Load: 0 PLF

Dead Load: 0 PLF

**Other Loads**

Type (Description)	Side	Begin	End	Trib. Width	Other Start	End	Dead Start	End	Category
Replacement Uniform (PLF)	Top	0' 0.00"	26' 0.00"		150		0		Snow
Replacement Uniform (PLF)	Top	0' 0.00"	26' 0.00"		0		75		Live
Point (LBS)	Top	16' 10.13"			2959		0		Snow
Point (LBS)	Top	16' 10.13"			290		1726		Live

**Bearings and Reactions**

	Location	Type	Material	Input Length	Min Required	Gravity Reaction	Gravity Uplift
1	0' 0.000"	Wall	Southern Pine (565psi)	3.500"	N/A	4867#	--
2	26' 0.000"	Wall	Southern Pine (565psi)	5.500"	N/A	6316#	--

**Maximum Load Case Reactions**

Used for applying point loads (or line loads) to carrying members

	Live	Snow	Dead
1	100#	2927#	1941#
2	190#	3842#	2475#

Design spans

25' 4.750"

**Product: Metwood 14511 - 14" x 5" 1 ply**

**PASSES DESIGN CHECKS**

Design assumes continuous lateral bracing for both flanges.

Web stiffeners are required at all bearing and point load locations unless reviewed by a design engineer.

Consult manufacturer's installation guide (if applicable) for details.

**Allowable Stress Design**

	Actual	Allowable	Capacity	Location	Loading
Moment	546682.##	1261920.##	43%	16.84'	Total Load D+S
Shear	6258.#	17290.#	36%	25.39'	Total Load D+S
V/M Interaction	0.24	1.00	24%	16.84'	Total Load D+S
TL Deflection	0.5158"	1.2698"	L/590	12.92'	Total Load D+S
LL Deflection	0.3141"	0.8465"	L/970	12.92'	Total Load S

Control: Moment

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\*\*Passing is defined as when the member, floor joist, beam or girder, shown on this drawing meets applicable design criteria for Loads, Loading Conditions, and Spans listed on this sheet. The design must be reviewed by a qualified designer or design professional as required for approval. This design assumes product installation according to the manufacturer's specifications.

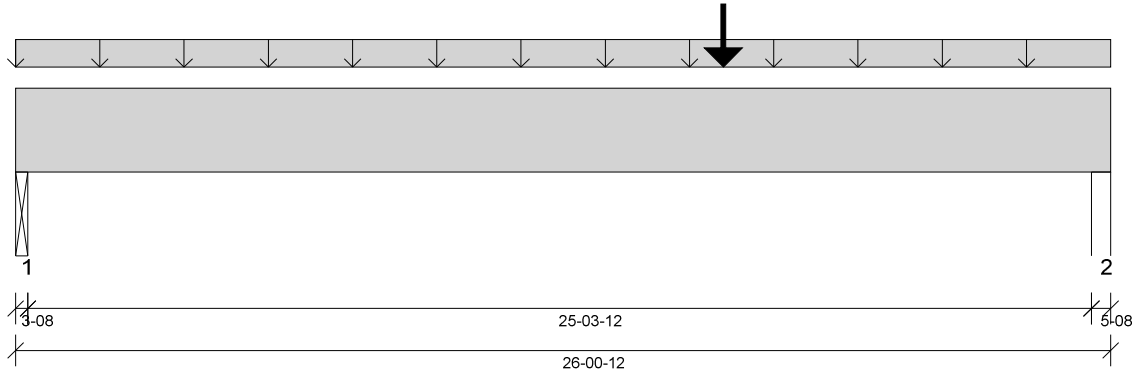
Michael Callahan  
Metwood Building Solutions  
819 Naff Rd.  
Boones Mill, VA 24065  
540-334-4294 ph.  
540-334-4293 fx.

## Member Report

Label: BM1 | Design Tag: i6931

**3 piece(s) of 1 3/4" x 24" 1.9E Microllam® LVL**

Member Type: Beam | Level: 2nd Floor

**Design Passed**
*Product is Sufficient for Application and Loads Described*


Building Code: IBC 2009

Design Methodology: ASD

Member Cut Length: 26-00-12

Member Drawing Not to Scale

<b>Design Results:</b>	<b>Design @ Location</b>	<b>Allowed</b>	<b>Result</b>	<b>LDF</b>	<b>Load Combination - (Load Group)</b>
Critical Reaction	6464 lb @ 25-08-12	12272 lb (5.5")	Passed - 53%	-	1.0 D + 1.0 S - (0)
Shear	5825 lb @ 23-07-04	27531 lb	Passed - 21%	1.15	1.0 D + 1.0 S - (0)
Moment	46409 lb-ft @ 16-10-02	114283 lb-ft	Passed - 41%	1.15	1.0 D + 1.0 S - (0)
Live Load Deflection	0.29" @ 13-06-00	0.85" L/360	Passed - L/999	-	1.0 D + 1.0 S - (0)
Total Load Deflection	0.47" @ 13-05-12	1.28" L/240	Passed - L/647	-	1.0 D + 1.0 S - (0)

### Design Notes:

\* Bracing (Lu): All compression edges (top and bottom) must be braced at 10-06-06 o/c unless detailed otherwise. Proper attachment and positioning of lateral bracing is required to achieve member stability.

### Supports:

Support	Start : End	Req'd Br'g	Source	Maximum Loads to Supports			
				Dead	Floor Live	Roof Live	Snow
1	0 : 3-08	1.5"	BM2(i6932)	2021 lb	101 lb	-	2971 lb
2	25-07-04 : 26-00-12	2.9"	E5(i680)	2566 lb	189 lb	-	3898 lb

### Loads:

Type	Start : End	Combine	Source	Maximum Loads on Member			
				Dead	Floor Live	Roof Live	Snow
Self Weight	0 : 26-00-12	-	Self Weight	35 lb/ft	-	-	-
Uniform	0 : 26-00-12	-	User Load	75 lb/ft	-	-	150 lb/ft
Point	16-10-02 : -	-	BM6(i6933)	1726 lb	290 lb	-	2959 lb

### Errors, Warnings, & Notes:

\* If sloping roof loads are applied to this member, the roof dead load has been adjusted for slope.

\* The member graphic, dimensions, and locations shown on this report are based on the centerline of the member.

\* Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.

\* Load Duration Factors: Dead - 0.90, Floor Live - 1.00, Roof Live - 1.25, Snow - 1.15

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## MULTIPLE-MEMBER CONNECTIONS

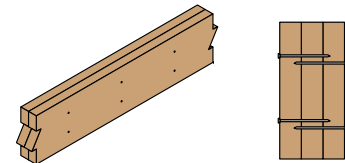
### Fastener Installation Requirements

Piece Width	# of Plies	Fastener				
		Type <sup>(1)</sup>	Min. Length	# Rows	O.C. Spacing	Location
1½" or 1¾"	2	10d nails	3"	3 <sup>(2)</sup>	12"	One side
		12d–16d nails	3¾"	2 <sup>(2)</sup>		
		Screws	3" for 1½" members 3¾" for 1¾" members	2	24"	
	3	10d nails	3"	3 <sup>(2)</sup>	12"	Both sides
		12d–16d nails	3¾"	2 <sup>(2)</sup>		
		Screws	3¾" or 3½"	2	24"	Both sides

(1) 10d nails are 0.128" diameter; 12d–16d nails are 0.148"–0.162" diameter; screws are SDS, SDW, USP WS, or TrussLOK EWP™.

(2) An additional row of nails is required with depths of 14" or greater.

- When fasteners are required on both sides, stagger fasteners on the second side so they fall halfway between fasteners on the first side.

**L6**


*Multiple pieces can be nailed or bolted together to form a header or beam of the required size, up to a maximum width of 5¼". Load must be applied evenly across entire beam width.*

*For applications that require wider members and/or uneven/side loaded beams, refer to the Trus Joist® Beam, Header and Column Specifier's Guides TJ-9000 or TJ-9020, or contact your Weyerhaeuser representative.*

**3 piece(s) of 1 3/4" x 24" 1.9E Microllam® LVL**
**Assembly requires Approx. 162 Nails**
**Comparable Metwood TUFF BEAM**
**1451126 - 14" x 5" x 26'**
**Product Ready to Install**