Reading a ForteWEB Report (Link)

The structural analysis below is an example of a member report from single-member design software developed by Weyerhaeuser. Allowable design properties for products are in accordance with code approved values for current Weyerhaeuser materials. **The input loads and dimensions have been provided by others and must be verified and approved for the specific application by the design professional responsible for the project.**
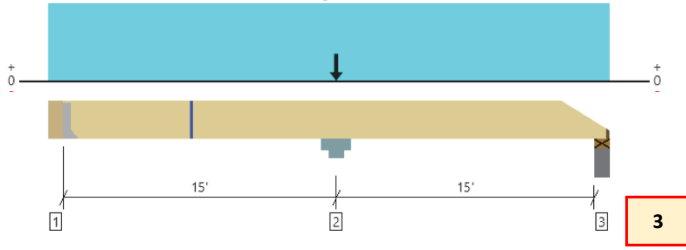
FORTEWEB™

MEMBER REPORT

`1` **PASSED**

Level, Floor: Flush Beam
`2` **3 piece(s) 1 3/4" x 11 7/8" 2.0E Microllam® LVL**

Overall Length: 30' 10 3/4"

`3`

15' | 15'

1 | 2 | 3

All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results `5`

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	4062 @ 5 1/4"	5906 (1.50")	Passed (69%)	--	1.0 D + 1.0 L (Alt Spans)
Shear (lbs)	5131 @ 16' 10 5/8"	11845	Passed (43%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	-18213 @ 15' 5 1/4"	26772	Passed (68%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.296 @ 23' 5"	0.378	Passed (L/613)	--	1.0 D + 1.0 L (Alt Spans)
Total Load Defl. (in)	0.358 @ 23' 6 11/16"	0.756	Passed (L/506)	--	1.0 D + 1.0 L (Alt Spans)

System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD   `4`

`7`   `6`

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.

Supports `8`

Supports	Bearing Length			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Snow	Factored	
1 - Hanger on 11 7/8" LVL beam	5.25"	Hanger[1]	1.50"	973	3362/-249	-	4335	See note [1]
2 - Column Cap - steel	11.00"	11.00"	4.70"	6607	9038	6820	18500	None
3 - Plate on concrete - SYP	5.50"	4.25"	1.50"	975	3334/-394	-	4309	1 1/4" Rim Board

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- [1] See Connector grid below for additional information and/or requirements.

Lateral Bracing `9`

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	22' 3" o/c	
Bottom Edge (Lu)	15' 1" o/c	

- Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie

Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories
1 - Face Mount Hanger	HHUS5.50/10	3.00"	N/A	30-10d	10-10d	

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Multiple Member Connections `10`

Type	Location	Fastener	Placement	Rows	O.C.	# of Fasteners	Details
Uniform	5 1/4" to 30' 9 1/2"	Strong-Drive® SDW Screw SDW22500 (5")	One Face	2	24"	--	L17

Vertical Loads `11`

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Comments
0 - Self Weight (PLF)	5 1/4" to 30' 9 1/2"	N/A	18.2	--	--	
1 - Uniform (PSF)	0 to 30' 10 3/4" (Front)	5'	12.0	40.0	-	Residential Floor Loads - Living Areas (Floor Joists Spanning 10')
2 - Uniform (PSF)	0 to 30' 10 3/4" (Back)	7'	12.0	40.0	-	Residential Floor Loads - Living Areas (Floor Joists Spanning 14')
3 - Point (lb)	15' 5 3/8" (Top)	N/A	3553	-	6820	Linked from: Ridge Beam, Support 2

Location Analysis `12`

Location Analysis	Shear (lbs)			Moment (Ft-lbs)			Deflection (in)		Comments
	Actual	Allowed	LDF	Actual	Allowed	LDF	Live Load	Total	
1 - 7' 6"	-933	11845	1.00	12669	26772	1.00	0.288	0.347	

Tapered End `13`

Tapered End	Heel Height	Cut Length	Cut Slope	Location	Shear (lbs)			Comments
					Actual	Allowed	Result	
Right End	6"	8 13/16"	8/12	29' 3 3/16"	-4016	11845	Passed (34%)	Rafter Cut

Weyerhaeuser Notes

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The product application, input design loads, dimensions and support information have been provided by 3D's General Contracting

ForteWEB Software Operator	Job Notes	
John Doe Lumber Co. (555) 123-5555 johndoe@lumberco.com `14`	Smith's Residence 123 Any Street New York, NY 10001 Project #12345 `15`	Weyerhaeuser

7/25/2022 5:01:48 PM UTC
ForteWEB v3.4, Engine: V8.2.2.122, Data: V8.1.2.2
File Name: Forte Explanation

Explanatory key (right column):

1. **Analysis result** (Passed or Failed).

2. **Product analyzed** including number of plies, section dimensions, and product type.

3. **Span dimensions and conditions** including simple spans, continuous spans, and cantilevers.

4. **System design information** including building code and design methodology.

5. **Design results** including member reaction, shear, moment, live load, and total load deflection.
Actual @ Location: critical design values occur using the displayed load combination and pattern.
Allowed: maximum design values for the member and parameters selected.
Result: (≤ 102%) member is sufficient to withstand applied loads.

6. **Deflection criteria**
Live Load (LL)
Total Load (TL)

7. **Additional design considerations**

8. **Support information** including support type/condition, bearing length, loads to support, and accessories.

9. **Lateral bracing** maximum distance between bracing points (compression edge) to prevent rotation/buckling.

10. **Multiple member connections** including fastener type, placement, and detail reference.

11. **Load information** including load type (uniform, tapered, point, point-PLF, etc.), location, tributary width, classification (live load, dead load, roof live, etc.), and load duration factor.

12. **Location analysis** which includes shear, moment, and deflection information at a specified location.

13. **Tapered end cut** information including heel height, cut length/slope, location, shear adjustment, and results.

14. **ForteWEB software operator** information.

15. **Job notes** input typically includes project information.