



Customer:  
Street 1:  
City:  
Customer Ph...

Job Name: **Hughes**  
Level: **1st Floor**  
Label: **FBM4 - i22**  
Type: **Beam**

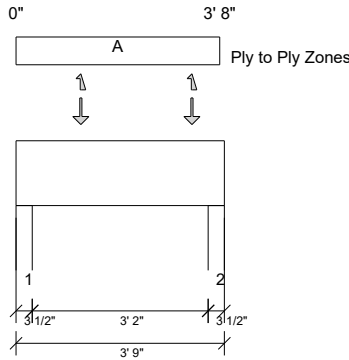
**2 Ply Member**  
**1 3/4" x 14" 2.0E**  
**Microllam® LVL**

Status:  
**Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.6.2.271.Update3.22

Report Version: 2021.03.26 01/02/2024 09:45



### DESIGN INFORMATION

Building Code: IRC 2018  
Design Methodology: ASD  
Risk Category: II (General Construction) Residential  
Service Condition: Dry  
LL Deflection Limit: L/360, 0.75" (absolute)  
TL Deflection Limit: L/240, 1.00" (absolute)

#### Lateral Restraint Requirements:

Both ends of the member and the outer supports must be laterally restrained. Top and bottom edges of the member must be fully restrained or have the following maximum unbraced length:

Top: 0' Bottom: 1'- 8 1/2"

#### Bearing Stress of Support Material:

- 425 psi Wall @ 0'- 2 1/2"
- 425 psi Wall @ 3'- 6 1/2"

### ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	1'- 2"	D + L	1.00	131 lb ft	24252 lb ft	Passed - 1%
Max Shear:	1'- 5 1/2"	D + L	1.00	90 lb	9310 lb	Passed - 1%

### SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	3 1/2"	D + L	1.00	147 lb		9188 lb	5206 lb	Passed - 3%
1	3 1/2"	D	0.90		-16 lb	-	-	
2	3 1/2"	D + L	1.00	198 lb		9188 lb	5206 lb	Passed - 4%
2	3 1/2"	D	0.90		-34 lb	-	-	

### LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	3'- 9"	Self Weight	Top	14 lb/ft	-	-	-	-
Point	1'- 2"	1'- 2"	F1031(c01)	Back	-52 lb	198 lb	-	-2 lb	1/0 lb
Point	3'- 2"	3'- 2"	F1031(c01)	Back	-52 lb	198 lb	-	-2 lb	1/0 lb

### UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 3 1/2"	5(i12)	-16 lb	163 lb	-	-2 lb	1 lb/ -1 lb
2	3'- 5 1/2"	3'- 9"	1(i9)	-34 lb	233 lb	-	-2 lb	1 lb/ -1 lb

### DESIGN NOTES

- The dead loads used in the design of this member were applied to the structure as projected dead loads.
- Analysis and Design has been performed using precision loading from actual modeled conditions. Some loads may have been modified to simplify reporting.
- Tributary Loads have been generated based on actual spacing between members in the model which may differ from the default system spacing. The actual loads applied to the member are shown in the Specified Loads table.
- Transfer reactions may differ from design results as allowed per building codes and standard load distribution practices.
- This report is based on modeled conditions input by the user. Source information for the loads and supports are provided for reference only. Verify that all loads and support conditions are correct.
- Review all loads and reactions to ensure that the member/bearing/connector/structure can resist adequately. Unless already specified on this report, anchorage for uplift reactions to be specified by others. Installation of member and accessories (if required) as per manufacturer's instruction.

### PLY TO PLY CONNECTION

- Zone A: Factored load = 342 plf. Use 12d (0.131"x3.25") nails. LDF = 1.00. Qty = 12. Row = 3, Spacing = 12" 12d (0.131"x3.25") nails properties: D = 0.131" , L = 3.25". Fastener capacity = 96 lbs. X1 = 2" , Y1 = 0.75" , Y2 = 1.5" Install fasteners from one face.  
X1 = Minimum end distance, X2 = Minimum edge distance, Y2 = Minimum row spacing.



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**PLY TO PLY CONNECTION**

**FASTENER INSTALLATION – 3 ROWS (FROM ONE FACE)**

