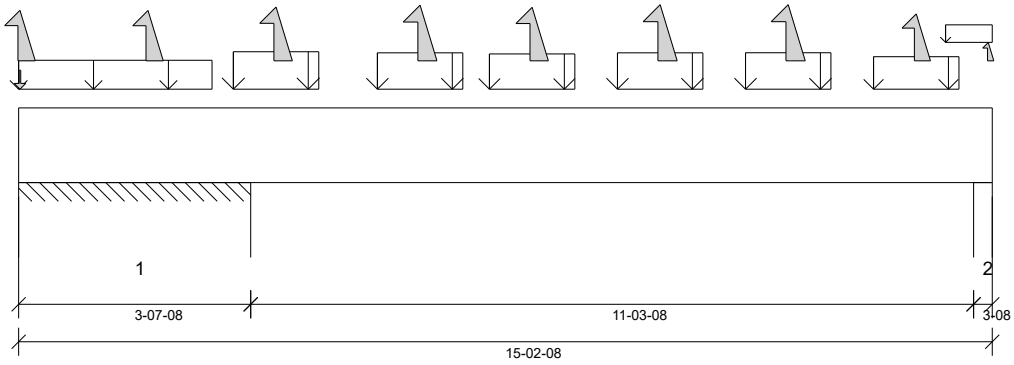
MiTek	Customer: Street 1: City: Customer Ph...	Job Name: **Hall 2024-SAN-075** Level: **1st Floor** Label: **FBM2 - i13** Type: **Beam**	**2 Ply Member** **2.1 RigidLam SP LVL 1-3/4 x 14**	Status: **Design Passed**

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.2.270.Update13.8

Report Version: 2021.03.26 01/28/2025 12:53



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: 14'- 11"

Bearing Stress of Support Material:

- 425 psi Wall @ 0'- 1 1/2"
- 425 psi Wall @ 3'- 6"
- 425 psi Wall @ 15'

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	10'- 2 7/8"	D + Lr	1.15	6480 lb ft	32936 lb ft	Passed - 20%
Max Neg. Moment:	3'- 6"	D + Lr	1.15	7891 lb ft	26737 lb ft	Passed - 30%
Max Shear:	4'- 9 1/2"	D + Lr	1.15	3177 lb	10894 lb	Passed - 29%
Live Load (LL) Pos. Defl.:	9'- 9 7/8"	Lr		0.049"	L/360	Passed - L/999
Total Load (TL) Pos. Defl.:	9'- 10 1/16"	D + Lr		0.098"	L/240	Passed - L/999

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	8-00	D + 0.75(L + Lr + 0.6W)	1.60	91 lb		29217 lb	11900 lb	Passed - 1%
1	8-00	D + Lr	1.15		-1726 lb	-	-	
1	1-09-00	D + Lr	1.15	7523 lb		55125 lb	31237 lb	Passed - 24%
1	1-09-00	0.6D + 0.6W	1.60		-1269 lb	-	-	
2	3-08	D + Lr	1.15	2742 lb		9188 lb	5206 lb	Passed - 53%
2	3-08	0.6D + 0.6W	1.60		-476 lb	-	-	

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	15'- 2 1/2"	Self Weight	Top	13 lb/ft	-	-	-	-
Uniform	-0'	3'- 1/4"	E12(i19)	Top	291 lb/ft	-	-	302 lb/ft	84 lb/ft
Uniform	3'- 4 1/4"	4'- 8 1/4"	E12(i19)	Top	450 lb/ft	-	-	480 lb/ft	134 lb/ft
Uniform	5'- 7 1/4"	6'- 11 1/4"	E12(i19)	Top	436 lb/ft	-	-	452 lb/ft	126 lb/ft
Uniform	7'- 4 1/4"	8'- 8 1/4"	E12(i19)	Top	422 lb/ft	-	-	424 lb/ft	118 lb/ft
Uniform	9'- 4 1/4"	10'- 8 1/4"	E12(i19)	Top	436 lb/ft	-	-	452 lb/ft	126 lb/ft
Uniform	11'- 4 1/4"	12'- 8 1/4"	E12(i19)	Top	437 lb/ft	-	-	454 lb/ft	127 lb/ft
Uniform	13'- 4 1/4"	14'- 8 1/4"	E12(i19)	Top	387 lb/ft	-	-	353 lb/ft	98 lb/ft
Uniform	14'- 5 3/4"	15'- 2 1/2"	E12(i19)	Top	78 lb/ft	-	-	63 lb/ft	18 lb/ft
Point	0'- 1/4"	0'- 1/4"	E12(i19)	Top	42 lb	-	-	44 lb	12/-716 lb
Point	2'- 1/4"	2'- 1/4"	E12(i19)	Top	-	-	-	-	-713 lb
Point	4'- 1/4"	4'- 1/4"	E12(i19)	Top	-	-	-	-	-781 lb
Point	6'- 3 1/4"	6'- 3 1/4"	E12(i19)	Top	-	-	-	-	-817 lb
Point	8'- 1/4"	8'- 1/4"	E12(i19)	Top	-	-	-	-	-775 lb
Point	10'- 1/4"	10'- 1/4"	E12(i19)	Top	-	-	-	-	-827 lb
Point	12'- 1/4"	12'- 1/4"	E12(i19)	Top	-	-	-	-	-827 lb
Point	14'- 1/4"	14'- 1/4"	E12(i19)	Top	-	-	-	-	-646 lb
Point	15'- 1 3/4"	15'- 1 3/4"	E12(i19)	Top	-	-	-	-	-85 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	3'- 7 1/2"	E7(i6)	3804/-610 lb	-	-	4315/-1134 lb	786 lb/ -5305 lb
==>	0'- 1 1/2"	0'- 1 1/2"	E7(i6)	-610 lb	-	-	556/-1134 lb	-
==>	3'- 6"	3'- 6"	E7(i6)	3804 lb	-	-	3759 lb	-
2	14'- 11"	15'- 2 1/2"	E4(i10)	1405 lb	-	-	1329/-8 lb	786 lb/ -5305 lb

DESIGN NOTES

- CAUTION: The maximum net analysis reaction exceeds the user-defined maximum uplift value at one or more supports.
- 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.

MiTek	Customer: Street 1: City: Customer Ph...	Job Name: **Hall 2024-SAN-075** Level: **1st Floor** Label: **FBM2 - i13** Type: **Beam**	**2 Ply Member** **2.1 RigidLam SP LVL 1-3/4 x 14**	Status: **Design Passed**

DESIGN NOTES

- 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.
- Beam Stability Factor used in the calculation for Allowable Max Pos Moment (CL) = 1.00

PLY TO PLY CONNECTION

- Member design assumed proper ply to ply connection by others. Fastener spacing along length of member must not exceed 4 times depth of member. Verify connection between plies according to code specification and follow the manufacturer's installation instruction. Loads assumed to be distributed equally to each ply.