



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

Job Name: **B**
Level: **1st FLOOR**
Label: **FB1-2 - i64**
Type: **Beam**

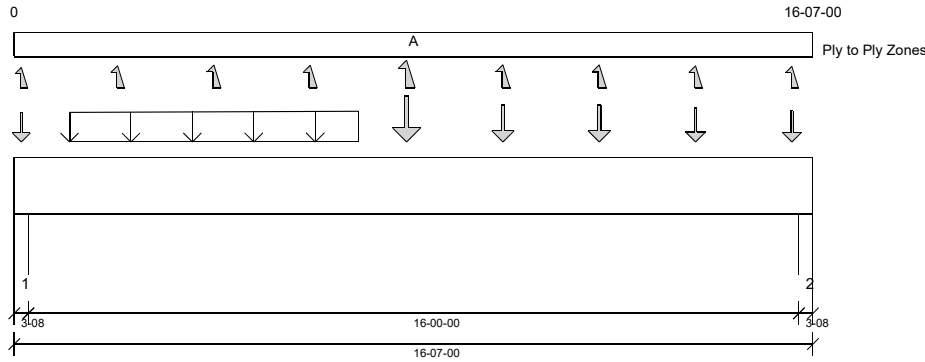
2 Ply Member
2.0 RigidLam DF LVL 1-3/4
x 14

Status:
Design Passed

Illustration Not to Scale. Pitch: 0/12

Designed by Single Member Design Engine in MiTek® Structure Version 8.7.3.303.Update9.26

Report Version: 2021.03.26 06/13/2024 14:48



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: 1'- 10 1/2" Bottom: 16'- 7"

Bearing Stress of Support Material:

- 1323 psi Wall @ 0'- 2 1/2"
- 1323 psi Wall @ 16'- 4 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	8'- 1 3/4"	D + Lr	1.15	26863 lb ft	33318 lb ft	Passed - 81%
Max Neg. Moment:	8'- 1 3/4"	0.6D + 0.6W	1.60	6180 lb ft	27051 lb ft	Passed - 23%
Max Shear:	1'- 5 1/2"	D + Lr	1.15	5569 lb	10894 lb	Passed - 51%
Live Load (LL) Pos. Defl.:	8'- 3 9/16"	Lr		0.435"	L/360	Passed - L/441
Total Load (TL) Pos. Defl.:	8'- 3 9/16"	D + Lr		0.766"	L/240	Passed - L/250

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	3-08	D + Lr	1.15	6687 lb		9188 lb	16207 lb	Passed - 73%
1	3-08	0.6D + 0.6W	1.60		-1513 lb	-	-	
2	3-08	D + Lr	1.15	6587 lb		9188 lb	16207 lb	Passed - 72%
2	3-08	0.6D + 0.6W	1.60		-1489 lb	-	-	

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	16'- 7"	Self Weight	Top	13 lb/ft	-	-	-	-
Tapered	1'- 1 3/4"	7'- 1 3/4"	Smoothed Load	Top	310 lb/ft	-	252 lb/ft	379 To 432 lb/ft	116 To 130 lb/ft
Point	0'- 1 3/4"	0'- 1 3/4"	A02(c09)	Top	510 lb	-	388 lb	589/-29 lb	178/-820 lb
Point	2'- 1 3/4"	2'- 1 3/4"	A02(c01)	Top	-	-	-	-20 lb	-986 lb
Point	4'- 1 3/4"	4'- 1 3/4"	A02(c05)	Top	-	-	-	-17 lb	-1055 lb
Point	6'- 1 3/4"	6'- 1 3/4"	A02(c04)	Top	-	-	-	-19 lb	-1032 lb
Point	8'- 1 3/4"	8'- 1 3/4"	A02(c03)	Top	827 lb	-	725 lb	1226/-14 lb	375/-1505 lb
Point	10'- 1 3/4"	10'- 1 3/4"	A02(c07)	Top	657 lb	-	544 lb	880/-14 lb	268/-1080 lb
Point	12'- 1 3/4"	12'- 1 3/4"	A02(c02)	Top	644 lb	-	531 lb	871/-15 lb	260/-1070 lb
Point	14'- 1 3/4"	14'- 1 3/4"	A02(c10)	Top	598 lb	-	481 lb	762/-14 lb	232/-983 lb
Point	16'- 1 3/4"	16'- 1 3/4"	A02(c06)	Top	540 lb	-	419 lb	659/-47 lb	197/-902 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"	E22(i63)	2955 lb	-	2319 lb	3725/-90 lb	254 lb /-5475 lb
2	16'- 3 1/2"	16'- 7"	E11(i7)	2899 lb	-	2284 lb	3696/-99 lb	254 lb /-5475 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.
- 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) = 0.99

PLY TO PLY CONNECTION

- Zone A: Factored load = 0 plf. Use 12d (0.148"x3.25") nails. LDF = 1.00. Qty = 51. Row = 3, Spacing = 12"
12d (0.148"x3.25") nails properties: D = 0.148" , L = 3.25". Fastener capacity = 117 lbs. X1 = 2.25" , 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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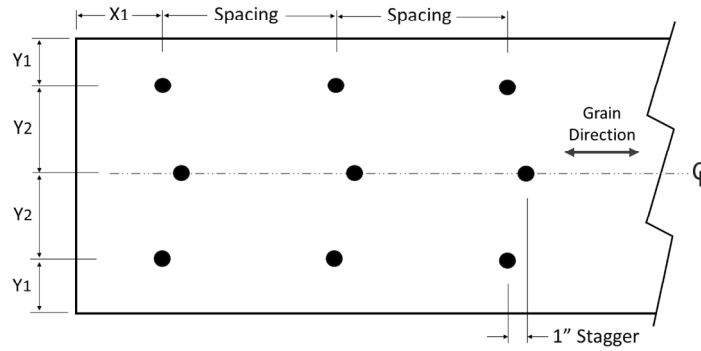
Job Name: **B**
Level: **1st FLOOR**
Label: **FB1-2 - i64**
Type: **Beam**

2 Ply Member
2.0 RigidLam DF LVL 1-3/4
x 14

Status:
Design
Passed

PLY TO PLY CONNECTION

FASTENER INSTALLATION – 3 ROWS (FROM ONE FACE)





Customer:
Street 1:
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Job Name: **B**
Level: **1st FLOOR**
Label: **FB2-2 - i74**
Type: **Beam**

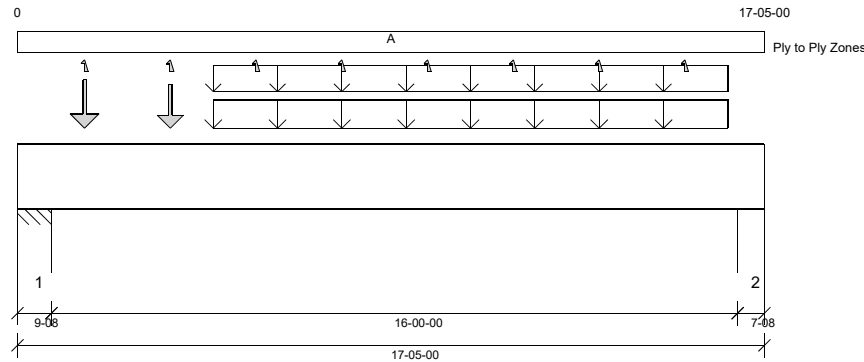
2 Ply Member
2.0 RigidLam DF LVL 1-3/4
x 18

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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:

- 1323 psi Wall @ 0'- 8 1/2"
- 725 psi Wall @ 16'- 10 1/2"

ANALYSIS RESULTS

Design Criteria	Location	Load Combination	LDF	Design	Limit	Result
Max Pos. Moment:	9'- 6 3/4"	D + L	1.00	25538 lb ft	46413 lb ft	Passed - 55%
Max Shear:	15'- 3 1/2"	D + L	1.00	6029 lb	12180 lb	Passed - 50%
Live Load (LL) Pos. Defl.:	8'- 9 7/16"	L		0.252"	L/360	Passed - L/761
Total Load (TL) Pos. Defl.:	8'- 9 7/16"	D + L		0.354"	L/240	Passed - L/543

SUPPORT AND REACTION INFORMATION

ID	Input Bearing Length	Controlling Load Combination	LDF	Downward Reaction	Uplift Reaction	Resistance of Member	Resistance of Support	Result
1	9-08	D + L	1.00	6607 lb		24937 lb	43990 lb	Passed - 26%
2	7-08	D + L	1.00	6094 lb		19687 lb	19031 lb	Passed - 32%

LOADING

Type	Start Loc	End Loc	Source	Face	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
Self Weight	0'	17'- 5"	Self Weight	Top	17 lb/ft	-	-	-	-
Uniform	4'- 6 3/4"	16'- 6 3/4"	Smoothed Load	Front	111 lb/ft	299 lb/ft	-	-	-
Uniform	4'- 6 3/4"	16'- 6 3/4"	Smoothed Load	Back	95 lb/ft	255 lb/ft	0 lb/ft	0 lb/ft	0 lb/ft
Point	1'- 6 3/4"	1'- 6 3/4"	-	Front	485 lb	1267/-2 lb	1 lb	1 lb	0/-2 lb
Point	3'- 6 3/4"	3'- 6 3/4"	-	Front	410 lb	1105 lb	0 lb	1 lb	0/-2 lb
Point	5'- 6 3/4"	5'- 6 3/4"	-	Front	-	-	-	-	-2 lb
Point	7'- 6 3/4"	7'- 6 3/4"	-	Front	-	-	-	-	-2 lb
Point	9'- 6 3/4"	9'- 6 3/4"	-	Front	-	-	-	-	-2 lb
Point	11'- 6 3/4"	11'- 6 3/4"	-	Front	-	-	-	-	-2 lb
Point	13'- 6 3/4"	13'- 6 3/4"	-	Front	-	-	-	-	-2 lb
Point	15'- 6 3/4"	15'- 6 3/4"	-	Front	-	-	-	-	-2 lb

UNFACTORED REACTIONS

ID	Start Loc	End Loc	Source	Dead (D)	Live (L)	Snow (S)	Roof Live (Lr)	Wind (W)
1	0'	0'- 9 1/2"	E24(i72)	1907 lb	4700/-2 lb	2 lb	3 lb	2 lb/ -8 lb
2	16'- 9 1/2"	17'- 5"	E25(i73)	1754 lb	4340 lb	2 lb	3 lb	2 lb/ -8 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.
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- 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

- Zone A: Factored load = 468 plf. Use 12d (0.148"x3.25") nails. LDF = 1.00. Qty = 54. Row = 3, Spacing = 12" 12d (0.148"x3.25") nails properties: D = 0.148" , L = 3.25". Fastener capacity = 117 lbs. X1 = 2.25" , 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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Type: **Beam**

2 Ply Member
2.0 RigidLam DF LVL 1-3/4
x 18

Status:
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Passed

PLY TO PLY CONNECTION

FASTENER INSTALLATION – 3 ROWS (FROM ONE FACE)

