

General Data

Name: Designs\FB01
Design Type: Floor Beam 0/12
Number or spans: 2 Repetitive: n/a
Left Cant.: No Construction: n/a
Right Cant.: No

Product Data

Product name: 7" x 11-7/8" VERSA-LAM® 2.0 3100 DF

E / 10⁶ = 2.00 psi EI / 10⁶ = 1953.65 K / 10⁶ = 0.00 lbs

Allowable resistive moment at 100% = 42,550 ft-lbs
Allowable end shear at 100% = 15,794 lbs
Allowable continuous shear at 100% = 15,794 lbs

Member Final Load Cases: Span Data

Load Case #0: 1. Dead load, no variation

Loads

| Type | Start Pos | End Pos | Start Value | End Value |
|-----------|-----------|----------|-------------|-----------|
| Dead Load | 00-00-00 | 20-00-00 | 10 psf | ---- |
| Dead Load | 00-00-00 | 20-00-00 | 21 plf | ---- |

| | Span 1 | Span 2 |
|-------------------|---------------|---------------|
| Moment Left: | -0 ft-lbs | -2,091 ft-lbs |
| Moment Right: | -2,091 ft-lbs | -0 ft-lbs |
| Bending: | 1,176 ft-lbs | 1,176 ft-lbs |
| Shear Left: | 653 lbs | 1,089 lbs |
| Shear Right: | -1,089 lbs | -653 lbs |
| Shear Red. Left: | 191 lbs | 225 lbs |
| Shear Red. Right: | -225 lbs | -191 lbs |
| Total Defl: | 0.007" | 0.007" |
| Total Neg. Defl: | -0" | -0" |
| Dead Load Defl: | 0.007" | 0.007" |
| Bending Defl: | 0.007" | 0.007" |
| Shear Defl: | 0" | 0" |
| Uplift: | 0 lbs | 0 lbs |
| Reaction @ B0: | 725 lbs | |
| Reaction @ B1: | 2,177 lbs | |
| Reaction @ B2: | 725 lbs | |

Load Case #1: 1. Dead load, no variation + 1. Live load, default duration and primary application

Loads

| Type | Start Pos | End Pos | Start Value | End Value |
|-----------|-----------|----------|-------------|-----------|
| Dead Load | 00-00-00 | 20-00-00 | 10 psf | ---- |
| Dead Load | 00-00-00 | 20-00-00 | 21 plf | ---- |
| Live Load | 00-00-00 | 20-00-00 | 40 psf | ---- |

| | Span 1 | Span 2 |
|-------------------|---------------|---------------|
| Moment Left: | -0 ft-lbs | -9,470 ft-lbs |
| Moment Right: | -9,470 ft-lbs | 0 ft-lbs |
| Bending: | 5,327 ft-lbs | 5,327 ft-lbs |
| Shear Left: | 2,958 lbs | 4,930 lbs |
| Shear Right: | -4,930 lbs | -2,958 lbs |
| Shear Red. Left: | 864 lbs | 1,018 lbs |
| Shear Red. Right: | -1,018 lbs | -864 lbs |
| Total Defl: | 0.033" | 0.033" |
| Total Neg. Defl: | -0" | -0" |
| Dead Load Defl: | 0.007" | 0.007" |
| Bending Defl: | 0.033" | 0.033" |
| Shear Defl: | 0" | 0" |
| Uplift: | 0 lbs | 0 lbs |
| Reaction @ B0: | 3,283 lbs | |
| Reaction @ B1: | 9,861 lbs | |
| Reaction @ B2: | 3,283 lbs | |

Load Case #14: 1. Dead load, no variation + 1. Trapezoidal Live load, default duration and all spans application + 1. Nontrapezoidal Live load on odd spans

Loads

| Type | Start Pos | End Pos | Start Value | End Value |
|-----------|-----------|----------|-------------|-----------|
| Dead Load | 00-00-00 | 20-00-00 | 10 psf | ---- |
| Dead Load | 00-00-00 | 20-00-00 | 21 plf | ---- |
| Live Load | 00-00-00 | 10-00-00 | 40 psf | ---- |

| | Span 1 | Span 2 |
|-------------------|---------------|---------------|
| Moment Left: | -0 ft-lbs | -5,781 ft-lbs |
| Moment Right: | -5,781 ft-lbs | 0 ft-lbs |
| Bending: | 6,800 ft-lbs | 199 ft-lbs |
| Shear Left: | 3,342 lbs | 1,473 lbs |
| Shear Right: | -4,546 lbs | -269 lbs |
| Shear Red. Left: | 864 lbs | 225 lbs |
| Shear Red. Right: | -1,018 lbs | -191 lbs |
| Total Defl: | 0.051" | 0" |
| Total Neg. Defl: | -0" | -0.014" |
| Dead Load Defl: | 0.007" | 0.007" |
| Bending Defl: | 0.051" | -0" |
| Shear Defl: | 0" | 0" |
| Uplift: | 0 lbs | 0 lbs |
| Reaction @ B0: | 3,667 lbs | |
| Reaction @ B1: | 6,019 lbs | |
| Reaction @ B2: | 341 lbs | |

Load Case #16: 1. Dead load, no variation + 1. Trapezoidal Live load, default duration and all spans application + 1. Nontrapezoidal Live load on even spans

Loads

| Type | Start Pos | End Pos | Start Value | End Value |
|-----------|-----------|----------|-------------|-----------|
| Dead Load | 00-00-00 | 20-00-00 | 10 psf | ---- |
| Dead Load | 00-00-00 | 20-00-00 | 21 plf | ---- |
| Live Load | 10-00-00 | 20-00-00 | 40 psf | ---- |

| | Span 1 | Span 2 |
|-------------------|---------------|---------------|
| Moment Left: | -0 ft-lbs | -5,781 ft-lbs |
| Moment Right: | -5,781 ft-lbs | -0 ft-lbs |
| Bending: | 200 ft-lbs | 6,800 ft-lbs |
| Shear Left: | 269 lbs | 4,546 lbs |
| Shear Right: | -1,473 lbs | -3,342 lbs |
| Shear Red. Left: | 191 lbs | 1,018 lbs |
| Shear Red. Right: | -225 lbs | -864 lbs |
| Total Defl: | 0" | 0.051" |
| Total Neg. Defl: | -0.014" | -0" |
| Dead Load Defl: | 0.007" | 0.007" |
| Bending Defl: | -0" | 0.051" |
| Shear Defl: | 0" | 0" |
| Uplift: | 0 lbs | 0 lbs |
| Reaction @ B0: | 341 lbs | |
| Reaction @ B1: | 6,019 lbs | |
| Reaction @ B2: | 3,667 lbs | |

Load Case #18: 1. Dead load, no variation + 1. Trapezoidal Live load, default duration and all spans application + 1. Nontrapezoidal Live load, default duration and span #1 application + 1. Nontrapezoidal Live load, default duration and span #2 application

Loads

| Type | Start Pos | End Pos | Start Value | End Value |
|-----------|-----------|----------|-------------|-----------|
| Dead Load | 00-00-00 | 20-00-00 | 10 psf | ---- |
| Dead Load | 00-00-00 | 20-00-00 | 21 plf | ---- |
| Live Load | 00-00-00 | 10-00-00 | 40 psf | ---- |
| Live Load | 10-00-00 | 20-00-00 | 40 psf | ---- |

| | Span 1 | Span 2 |
|-------------------|---------------|---------------|
| Moment Left: | -0 ft-lbs | -9,470 ft-lbs |
| Moment Right: | -9,470 ft-lbs | 0 ft-lbs |
| Bending: | 5,327 ft-lbs | 5,327 ft-lbs |
| Shear Left: | 2,958 lbs | 4,930 lbs |
| Shear Right: | -4,930 lbs | -2,958 lbs |
| Shear Red. Left: | 864 lbs | 1,018 lbs |
| Shear Red. Right: | -1,018 lbs | -864 lbs |
| Total Defl: | 0.033" | 0.033" |
| Total Neg. Defl: | -0" | -0" |
| Dead Load Defl: | 0.007" | 0.007" |
| Bending Defl: | 0.033" | 0.033" |
| Shear Defl: | 0" | 0" |
| Uplift: | 0 lbs | 0 lbs |
| Reaction @ B0: | 3,283 lbs | |
| Reaction @ B1: | 9,861 lbs | |
| Reaction @ B2: | 3,283 lbs | |

Member Final Load Cases: Maximums

Load Case #0: 1. Dead load, no variation

| | | |
|------------|---------|---------------|
| Max Moment | Span: 1 | -2,065 ft-lbs |
| Max Shear | Span: 1 | -1,089 lbs |

Load Case #1: 1. Dead load, no variation + 1. Live load, default duration and primary application

| | | |
|------------|---------|---------------|
| Max Moment | Span: 1 | -9,352 ft-lbs |
| Max Shear | Span: 1 | -4,930 lbs |

Load Case #14: 1. Dead load, no variation + 1. Trapezoidal Live load, default duration and all spans application + 1. Nontrapezoidal Live load on odd spans

| | | |
|------------|---------|---------------|
| Max Moment | Span: 2 | -5,732 ft-lbs |
| Max Shear | Span: 1 | -4,546 lbs |

Load Case #16: 1. Dead load, no variation + 1. Trapezoidal Live load, default duration and all spans application + 1. Nontrapezoidal Live load on even spans

| | | |
|------------|---------|---------------|
| Max Moment | Span: 1 | -5,745 ft-lbs |
| Max Shear | Span: 2 | 4,546 lbs |

Load Case #18: 1. Dead load, no variation + 1. Trapezoidal Live load, default duration and all spans application + 1. Nontrapezoidal Live load, default duration and span #1 application + 1. Nontrapezoidal Live load, default duration and span #2 application

| | | |
|------------|---------|---------------|
| Max Moment | Span: 1 | -9,352 ft-lbs |
| Max Shear | Span: 1 | -4,930 lbs |