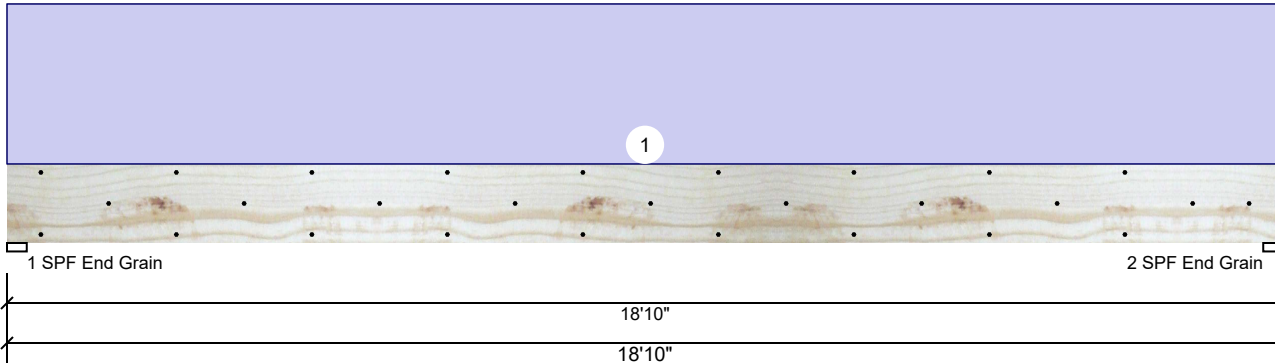


GDH Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED

Level: Level



Member Information

| | |
|----------------------------|-------------------------|
| Type: Girder | Application: Floor |
| Plies: 2 | Design Method: ASD |
| Moisture Condition: Dry | Building Code: IBC 2012 |
| Deflection LL: 360 | Load Sharing: No |
| Deflection TL: 240 | Deck: Not Checked |
| Importance: Normal | |
| Temperature: Temp <= 100°F | |

Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|-----|------|------|------|------|-------|
| 1 | 0 | 2457 | 0 | 0 | 0 |
| 2 | 0 | 2457 | 0 | 0 | 0 |

Bearings

| Bearing | Length | Cap. React | D/L lb | Total | Ld. Case | Ld. Comb. |
|-------------------|--------|------------|----------|-------|----------|-----------|
| 1 - SPF End Grain | 3.500" | 23% | 2457 / 0 | 2457 | Uniform | D |
| 2 - SPF End Grain | 3.500" | 23% | 2457 / 0 | 2457 | Uniform | D |

Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|--------------|---------------|-----------|---------------|--------------|-------|---------|
| Moment | 11011 ft-lb | 9'5" | 24299 ft-lb | 0.453 (45%) | D | Uniform |
| Unbraced | 11011 ft-lb | 9'5" | 11013 ft-lb | 1.000 (100%) | D | Uniform |
| Shear | 2093 lb | 1'4 3/4" | 9408 lb | 0.222 (22%) | D | Uniform |
| LL Defl inch | 0.000 (L/999) | 0 | 999.000 (L/0) | 0.000 (0%) | | |
| TL Defl inch | 0.444 (L/497) | 9'5 1/16" | 0.919 (L/240) | 0.480 (48%) | D | Uniform |

Design Notes

- 1 Fasten all plies using 3 rows of SDW22338 at 24" o.c. Maximum end distance not to exceed 12".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Simpson fasteners applied from a single side of the member use tip values where published.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top must be laterally braced at a maximum of 9'7 1/2" o.c.
- 7 Bottom braced at bearings.
- 8 Lateral slenderness ratio based on single ply width.

| ID | Load Type | Location | Trib Width | Side | Dead 0.9 | Live 1 | Snow 1.15 | Wind 1.6 | Const. 1.25 | Comments |
|----|-------------|----------|------------|------|----------|--------|-----------|----------|-------------|----------|
| 1 | Uniform | | | Top | 250 PLF | 0 PLF | 0 PLF | 0 PLF | 0 PLF | |
| | Self Weight | | | | 11 PLF | | | | | |

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/26/2023

Manufacturer Info

Metsä Wood
 301 Merritt 7 Building, 2nd Floor
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 www.metsawood.com/us
 ICC-ES: ESR-3633

Comtech, Inc.
 1001 S. Reilly Road, Suite #639
 Fayetteville, NC
 USA
 28314
 910-864-TRUS



GDH Kerto-S LVL 1.750" X 14.000" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 3 rows of SDW22338 at 24" o.c.. Maximum end distance not to exceed 12"

| | |
|--------------------------|-----------|
| Capacity | 0.0 % |
| Load | 0.0 PLF |
| Yield Limit per Foot | 382.5 PLF |
| Yield Limit per Fastener | 255.0 lb. |
| Yield Mode | Lookup |
| Edge Distance | 1 1/2" |
| Min. End Distance | 6" |
| Load Combination | |
| Duration Factor | 1.00 |

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/26/2023

Manufacturer Info

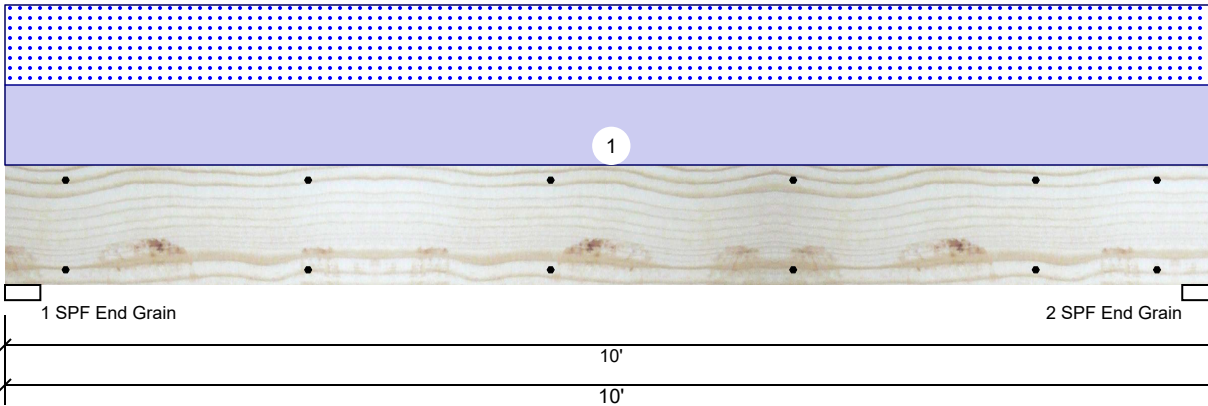
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GDH-1 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Member Information

| | | | |
|---------------------|---------------|----------------|-------------|
| Type: | Girder | Application: | Floor |
| Plies: | 2 | Design Method: | ASD |
| Moisture Condition: | Dry | Building Code: | IBC 2012 |
| Deflection LL: | 360 | Load Sharing: | No |
| Deflection TL: | 240 | Deck: | Not Checked |
| Importance: | Normal | | |
| Temperature: | Temp <= 100°F | | |

Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|-----|------|------|------|------|-------|
| 1 | 0 | 1196 | 1150 | 0 | 0 |
| 2 | 0 | 1196 | 1150 | 0 | 0 |

Bearings

| Bearing | Length | Cap. React | D/L lb | Total | Ld. Case | Ld. Comb. |
|-------------------|--------|------------|-------------|-------|----------|-----------|
| 1 - SPF End Grain | 3.500" | 22% | 1196 / 1150 | 2346 | L | D+S |
| 2 - SPF End Grain | 3.500" | 22% | 1196 / 1150 | 2346 | L | D+S |

Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|--------------|----------------|----------|---------------|-------------|-------|------|
| Moment | 5340 ft-lb | 5' | 22897 ft-lb | 0.233 (23%) | D+S | L |
| Unbraced | 5340 ft-lb | 5' | 9721 ft-lb | 0.549 (55%) | D+S | L |
| Shear | 1774 lb | 8'9 3/8" | 10197 lb | 0.174 (17%) | D+S | L |
| LL Defl inch | 0.051 (L/2238) | 5' | 0.318 (L/360) | 0.160 (16%) | S | L |
| TL Defl inch | 0.104 (L/1097) | 5' | 0.477 (L/240) | 0.220 (22%) | D+S | L |

Design Notes

- 1 Fasten all plies using 2 rows of SDW22338 at 24" o.c. Maximum end distance not to exceed 12".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Simpson fasteners applied from a single side of the member use tip values where published.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top braced at bearings.
- 7 Bottom braced at bearings.
- 8 Lateral slenderness ratio based on single ply width.

| ID | Load Type | Location | Trib Width | Side | Dead 0.9 | Live 1 | Snow 1.15 | Wind 1.6 | Const. 1.25 | Comments |
|----|-------------|----------|------------|------|----------|--------|-----------|----------|-------------|----------|
| 1 | Uniform | | | Top | 230 PLF | 0 PLF | 230 PLF | 0 PLF | 0 PLF | G1 |
| | Self Weight | | | | 9 PLF | | | | | |

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/26/2023

Manufacturer Info

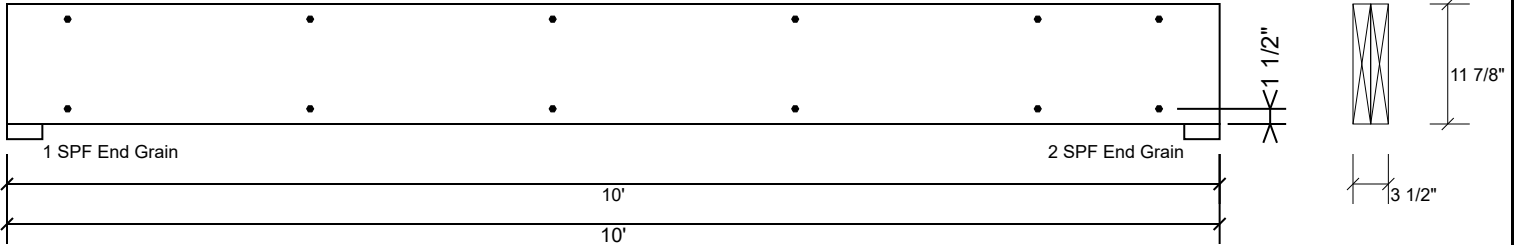
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GDH-1 Kerto-S LVL 1.750" X 11.875" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of SDW22338 at 24" o.c.. Maximum end distance not to exceed 12"

| | |
|--------------------------|-----------|
| Capacity | 0.0 % |
| Load | 0.0 PLF |
| Yield Limit per Foot | 255.0 PLF |
| Yield Limit per Fastener | 255.0 lb. |
| Yield Mode | Lookup |
| Edge Distance | 1 1/2" |
| Min. End Distance | 6" |
| Load Combination | |
| Duration Factor | 1.00 |

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/26/2023

Manufacturer Info

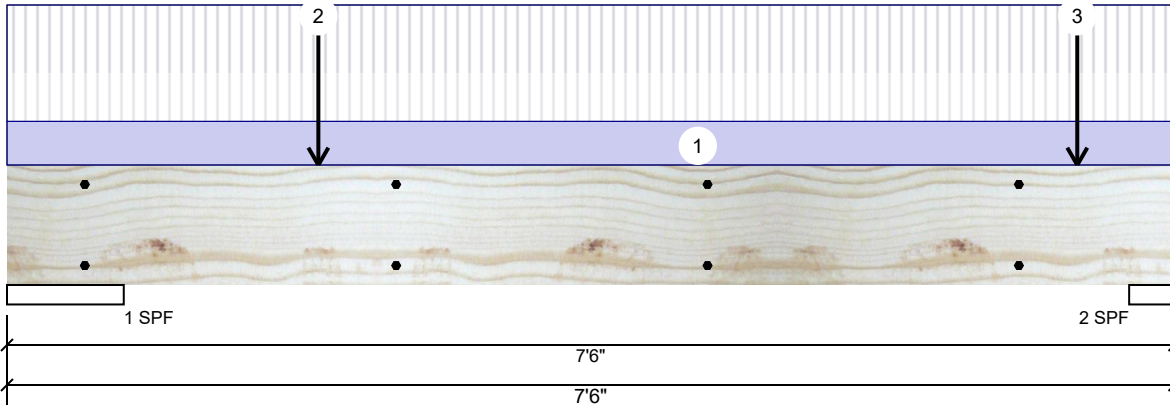
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BM1 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Member Information

| | |
|---------------------|---------------|
| Type: | Girder |
| Plies: | 2 |
| Moisture Condition: | Dry |
| Deflection LL: | 360 |
| Deflection TL: | 240 |
| Importance: | Normal |
| Temperature: | Temp <= 100°F |

| | |
|----------------|-------------|
| Application: | Floor |
| Design Method: | ASD |
| Building Code: | IBC 2012 |
| Load Sharing: | No |
| Deck: | Not Checked |

Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|-----|------|------|------|------|-------|
| 1 | 159 | 1025 | 937 | 0 | 0 |
| 2 | 141 | 1318 | 1239 | 0 | 0 |

Bearings

| Bearing | Length | Cap. React D/L lb | Total Ld. Case | Ld. Comb. |
|---------|--------|-------------------|----------------|-----------|
| 1 - SPF | 9.000" | 15% 1025 / 937 | 1961 L | D+S |
| 2 - SPF | 3.500" | 49% 1318 / 1239 | 2557 L | D+S |

Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|--------------|----------------|-----------|---------------|-------------|-------|------|
| Moment | 2535 ft-lb | 2' | 14423 ft-lb | 0.176 (18%) | D+S | L |
| Unbraced | 2535 ft-lb | 2' | 10012 ft-lb | 0.253 (25%) | D+S | L |
| Shear | 1929 lb | 1'5 1/2" | 7943 lb | 0.243 (24%) | D+S | L |
| LL Defl inch | 0.022 (L/3655) | 3'7 1/4" | 0.219 (L/360) | 0.100 (10%) | S | L |
| TL Defl inch | 0.046 (L/1730) | 3'7 9/16" | 0.329 (L/240) | 0.140 (14%) | D+S | L |

Design Notes

- 1 Fasten all plies using 2 rows of SDW22338 at 24" o.c. Maximum end distance not to exceed 12".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Simpson fasteners applied from a single side of the member use tip values where published.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top braced at bearings.
- 7 Bottom braced at bearings.
- 8 Lateral slenderness ratio based on single ply width.

| ID | Load Type | Location | Trib Width | Side | Dead 0.9 | Live 1 | Snow 1.15 | Wind 1.6 | Const. 1.25 | Comments |
|----|-------------|----------|------------|------|----------|--------|-----------|----------|-------------|----------|
| 1 | Uniform | | | Top | 15 PLF | 40 PLF | 0 PLF | 0 PLF | 0 PLF | Floor |
| 2 | Point | 2-0-0 | | Top | 1088 lb | 0 lb | 1088 lb | 0 lb | 0 lb | A6 |
| 3 | Point | 6-10-8 | | Top | 1088 lb | 0 lb | 1088 lb | 0 lb | 0 lb | A6 |
| | Self Weight | | | | 7 PLF | | | | | |

Notes
 Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber
 1. Dry service conditions, unless noted otherwise
 2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation
 1. LVL beams must not be cut or drilled
 2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
 3. Damaged Beams must not be used
 4. Design assumes top edge is laterally restrained
 5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/26/2023

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BM1 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of SDW22338 at 24" o.c.. Maximum end distance not to exceed 12"

| | |
|--------------------------|-----------|
| Capacity | 0.0 % |
| Load | 0.0 PLF |
| Yield Limit per Foot | 255.0 PLF |
| Yield Limit per Fastener | 255.0 lb. |
| Yield Mode | Lookup |
| Edge Distance | 1 1/2" |
| Min. End Distance | 6" |
| Load Combination | |
| Duration Factor | 1.00 |

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/26/2023

Manufacturer Info

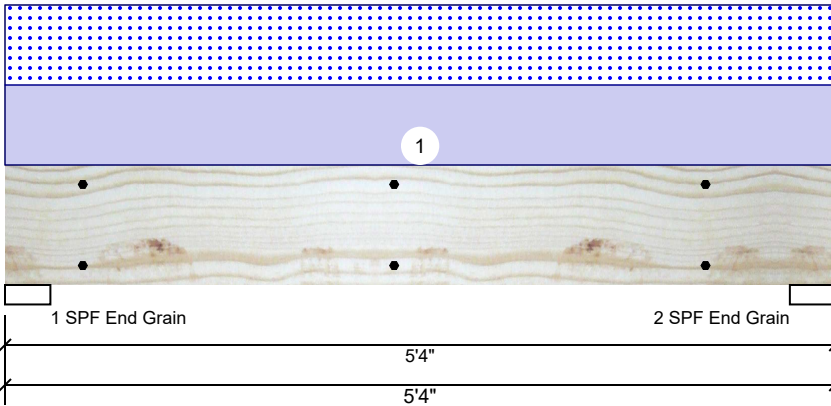
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BM2 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Member Information

| | | | |
|---------------------|---------------|----------------|-------------|
| Type: | Girder | Application: | Floor |
| Plies: | 2 | Design Method: | ASD |
| Moisture Condition: | Dry | Building Code: | IBC 2012 |
| Deflection LL: | 360 | Load Sharing: | No |
| Deflection TL: | 240 | Deck: | Not Checked |
| Importance: | Normal | | |
| Temperature: | Temp <= 100°F | | |

Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|-----|------|------|------|------|-------|
| 1 | 0 | 1659 | 1640 | 0 | 0 |
| 2 | 0 | 1659 | 1640 | 0 | 0 |

Bearings

| Bearing | Length | Cap. React | D/L lb | Total | Ld. Case | Ld. Comb. |
|-------------------|--------|------------|-------------|-------|----------|-----------|
| 1 - SPF End Grain | 3.500" | 31% | 1659 / 1640 | 3299 | L | D+S |
| 2 - SPF End Grain | 3.500" | 31% | 1659 / 1640 | 3299 | L | D+S |

Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|--------------|----------------|----------|---------------|-------------|-------|------|
| Moment | 3675 ft-lb | 2'8" | 14423 ft-lb | 0.255 (25%) | D+S | L |
| Unbraced | 3675 ft-lb | 2'8" | 11811 ft-lb | 0.311 (31%) | D+S | L |
| Shear | 2062 lb | 4'4" | 7943 lb | 0.260 (26%) | D+S | L |
| LL Defl inch | 0.023 (L/2497) | 2'8" | 0.162 (L/360) | 0.140 (14%) | S | L |
| TL Defl inch | 0.047 (L/1241) | 2'8" | 0.244 (L/240) | 0.190 (19%) | D+S | L |

Design Notes

- 1 Fasten all plies using 2 rows of SDW22338 at 24" o.c. Maximum end distance not to exceed 12".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Simpson fasteners applied from a single side of the member use tip values where published.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top braced at bearings.
- 7 Bottom braced at bearings.
- 8 Lateral slenderness ratio based on single ply width.

| ID | Load Type | Location | Trib Width | Side | Dead 0.9 | Live 1 | Snow 1.15 | Wind 1.6 | Const. 1.25 | Comments |
|----|-------------|----------|------------|------|----------|--------|-----------|----------|-------------|----------|
| 1 | Uniform | | | Top | 615 PLF | 0 PLF | 615 PLF | 0 PLF | 0 PLF | A2 |
| | Self Weight | | | | 7 PLF | | | | | |

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/26/2023

Manufacturer Info

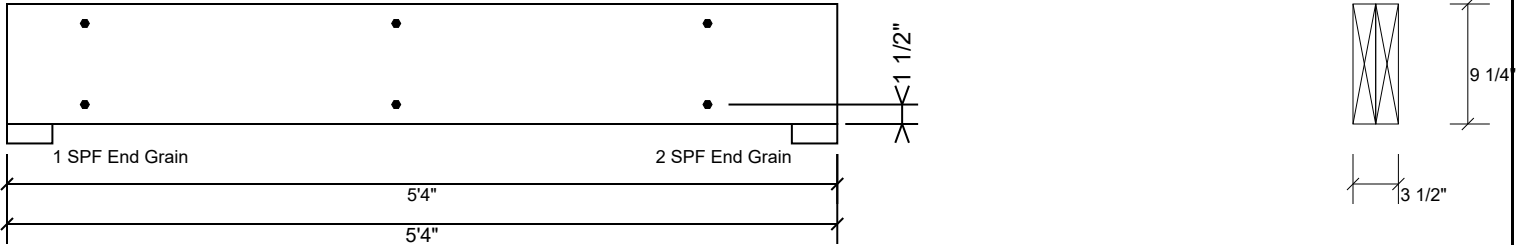
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BM2 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of SDW22338 at 24" o.c.. Maximum end distance not to exceed 12"

| | |
|--------------------------|-----------|
| Capacity | 0.0 % |
| Load | 0.0 PLF |
| Yield Limit per Foot | 255.0 PLF |
| Yield Limit per Fastener | 255.0 lb. |
| Yield Mode | Lookup |
| Edge Distance | 1 1/2" |
| Min. End Distance | 6" |
| Load Combination | |
| Duration Factor | 1.00 |

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/26/2023

Manufacturer Info

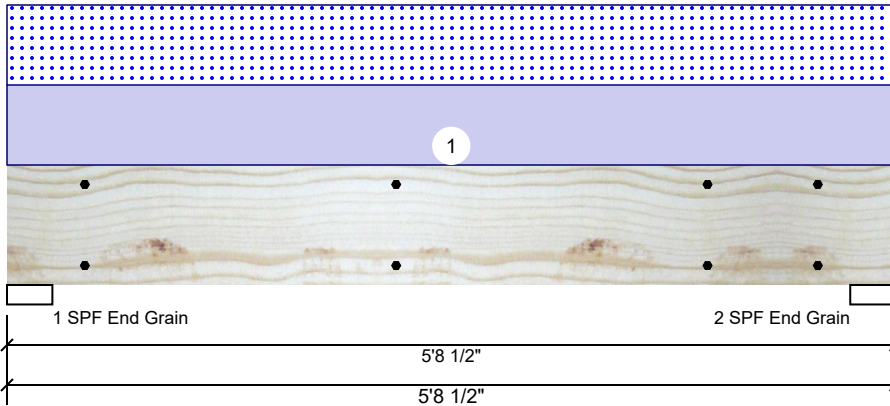
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BM3 S-P-F #2 2.000" X 10.000" 2-Ply - PASSED

Level: Level



Member Information

| | |
|---------------------|---------------|
| Type: | Girder |
| Plies: | 2 |
| Moisture Condition: | Dry |
| Deflection LL: | 360 |
| Deflection TL: | 240 |
| Importance: | Normal |
| Temperature: | Temp <= 100°F |

| | |
|----------------|-------------|
| Application: | Floor |
| Design Method: | ASD |
| Building Code: | IBC 2012 |
| Load Sharing: | No |
| Deck: | Not Checked |

Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|-----|------|------|------|------|-------|
| 1 | 0 | 782 | 782 | 0 | 0 |
| 2 | 0 | 782 | 782 | 0 | 0 |

Bearings

| Bearing | Length | Cap. React | D/L lb | Total | Ld. Case | Ld. Comb. |
|-------------------|--------|------------|-----------|-------|----------|-----------|
| 1 - SPF End Grain | 3.500" | 35% | 782 / 782 | 1564 | L | D+S |
| 2 - SPF End Grain | 3.500" | 35% | 782 / 782 | 1564 | L | D+S |

Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|--------------|----------------|-----------|---------------|-------------|-------|------|
| Moment | 1888 ft-lb | 2'10 1/4" | 3946 ft-lb | 0.478 (48%) | D+S | L |
| Unbraced | 1888 ft-lb | 2'10 1/4" | 3629 ft-lb | 0.520 (52%) | D+S | L |
| Shear | 1016 lb | 1' | 2872 lb | 0.354 (35%) | D+S | L |
| LL Defl inch | 0.017 (L/3726) | 2'10 1/4" | 0.175 (L/360) | 0.100 (10%) | S | L |
| TL Defl inch | 0.034 (L/1863) | 2'10 1/4" | 0.262 (L/240) | 0.130 (13%) | D+S | L |

Design Notes

- 1 Fasten all plies using 2 rows of SDW22300 at 24" o.c. Maximum end distance not to exceed 12".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Simpson fasteners applied from a single side of the member use tip values where published.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top braced at bearings.
- 7 Bottom braced at bearings.
- 8 Lateral slenderness ratio based on single ply width.

| ID | Load Type | Location | Trib Width | Side | Dead 0.9 | Live 1 | Snow 1.15 | Wind 1.6 | Const. 1.25 | Comments |
|----|-----------|----------|------------|------|----------|--------|-----------|----------|-------------|----------|
| 1 | Uniform | | | Top | 274 PLF | 0 PLF | 274 PLF | 0 PLF | 0 PLF | A4 |

Manufacturer Info

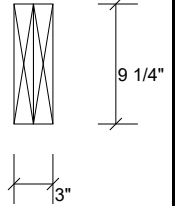
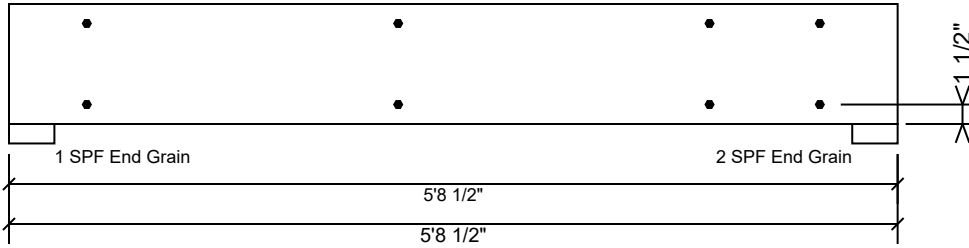
Comtech, Inc.
 1001 S. Reilly Road, Suite #639
 Fayetteville, NC
 USA
 28314
 910-864-TRUS



This design is valid until 2/26/2023

BM3 S-P-F #2 2.000" X 10.000" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of SDW22300 at 24" o.c.. Maximum end distance not to exceed 12"

| | |
|--------------------------|-----------|
| Capacity | 0.0 % |
| Load | 0.0 PLF |
| Yield Limit per Foot | 255.0 PLF |
| Yield Limit per Fastener | 255.0 lb. |
| Yield Mode | Lookup |
| Edge Distance | 1 1/2" |
| Min. End Distance | 6" |
| Load Combination | |
| Duration Factor | 1.00 |

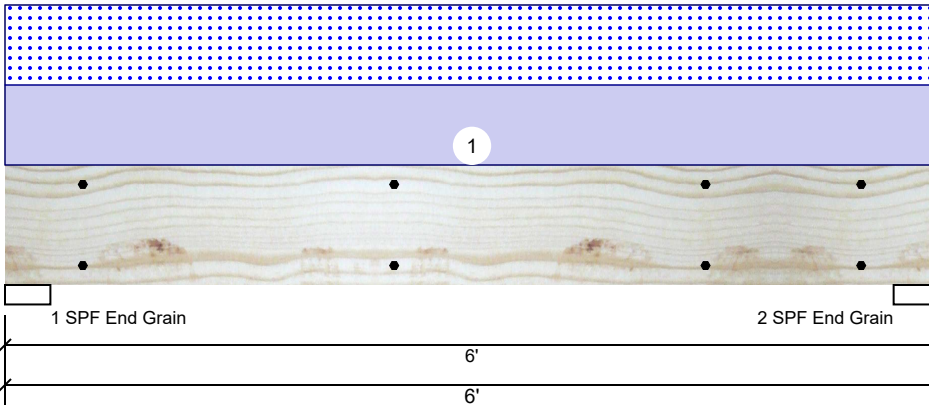
| | |
|--------------------------|--|
| Manufacturer Info | Comtech, Inc. 1001 S. Reilly Road, Suite #639 Fayetteville, NC USA 28314 910-864-TRUS |
|--------------------------|--|



This design is valid until 2/26/2023

BM4 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Member Information

| | | | |
|---------------------|---------------|----------------|-------------|
| Type: | Girder | Application: | Floor |
| Plies: | 2 | Design Method: | ASD |
| Moisture Condition: | Dry | Building Code: | IBC 2012 |
| Deflection LL: | 360 | Load Sharing: | No |
| Deflection TL: | 240 | Deck: | Not Checked |
| Importance: | Normal | | |
| Temperature: | Temp <= 100°F | | |

Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|-----|------|------|------|------|-------|
| 1 | 0 | 2269 | 2247 | 0 | 0 |
| 2 | 0 | 2269 | 2247 | 0 | 0 |

Bearings

| Bearing | Length | Cap. | React D/L | Ib | Total | Ld. Case | Ld. Comb. |
|-------------------|--------|------|-------------|------|-------|----------|-----------|
| 1 - SPF End Grain | 3.500" | 42% | 2269 / 2247 | 4516 | L | D+S | |
| 2 - SPF End Grain | 3.500" | 42% | 2269 / 2247 | 4516 | L | D+S | |

Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|--------------|----------------|----------|---------------|-------------|-------|------|
| Moment | 5778 ft-lb | 3' | 14423 ft-lb | 0.401 (40%) | D+S | L |
| Unbraced | 5778 ft-lb | 3' | 11027 ft-lb | 0.524 (52%) | D+S | L |
| Shear | 3010 lb | 1' | 7943 lb | 0.379 (38%) | D+S | L |
| LL Defl inch | 0.045 (L/1489) | 3' | 0.185 (L/360) | 0.240 (24%) | S | L |
| TL Defl inch | 0.090 (L/741) | 3' | 0.277 (L/240) | 0.320 (32%) | D+S | L |

Design Notes

- 1 Fasten all plies using 2 rows of SDW22338 at 24" o.c. Maximum end distance not to exceed 12".
- 2 Refer to last page of calculations for fasteners required for specified loads.
- 3 Simpson fasteners applied from a single side of the member use tip values where published.
- 4 Girders are designed to be supported on the bottom edge only.
- 5 Top loads must be supported equally by all plies.
- 6 Top braced at bearings.
- 7 Bottom braced at bearings.
- 8 Lateral slenderness ratio based on single ply width.

| ID | Load Type | Location | Trib Width | Side | Dead 0.9 | Live 1 | Snow 1.15 | Wind 1.6 | Const. 1.25 | Comments |
|----|-------------|----------|------------|------|----------|--------|-----------|----------|-------------|----------|
| 1 | Uniform | | | Top | 749 PLF | 0 PLF | 749 PLF | 0 PLF | 0 PLF | A2 |
| | Self Weight | | | | 7 PLF | | | | | |

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive

chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation

6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 2/26/2023

Manufacturer Info

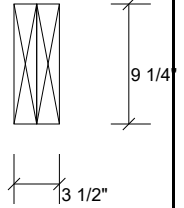
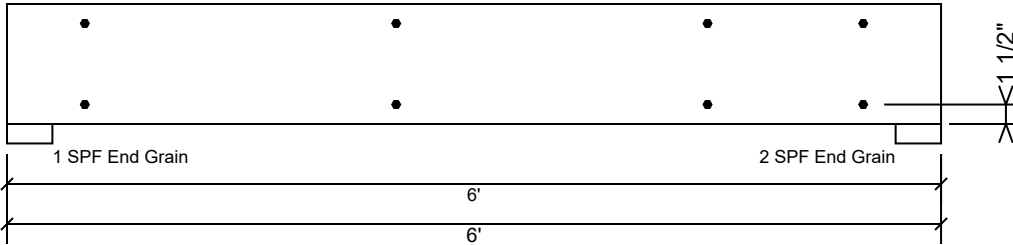
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 ICC-ES: ESR-3633

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BM4 Kerto-S LVL 1.750" X 9.250" 2-Ply - PASSED

Level: Level



Multi-Ply Analysis

Fasten all plies using 2 rows of SDW22338 at 24" o.c.. Maximum end distance not to exceed 12"

| | |
|--------------------------|-----------|
| Capacity | 0.0 % |
| Load | 0.0 PLF |
| Yield Limit per Foot | 255.0 PLF |
| Yield Limit per Fastener | 255.0 lb. |
| Yield Mode | Lookup |
| Edge Distance | 1 1/2" |
| Min. End Distance | 6" |
| Load Combination | |
| Duration Factor | 1.00 |

Notes

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