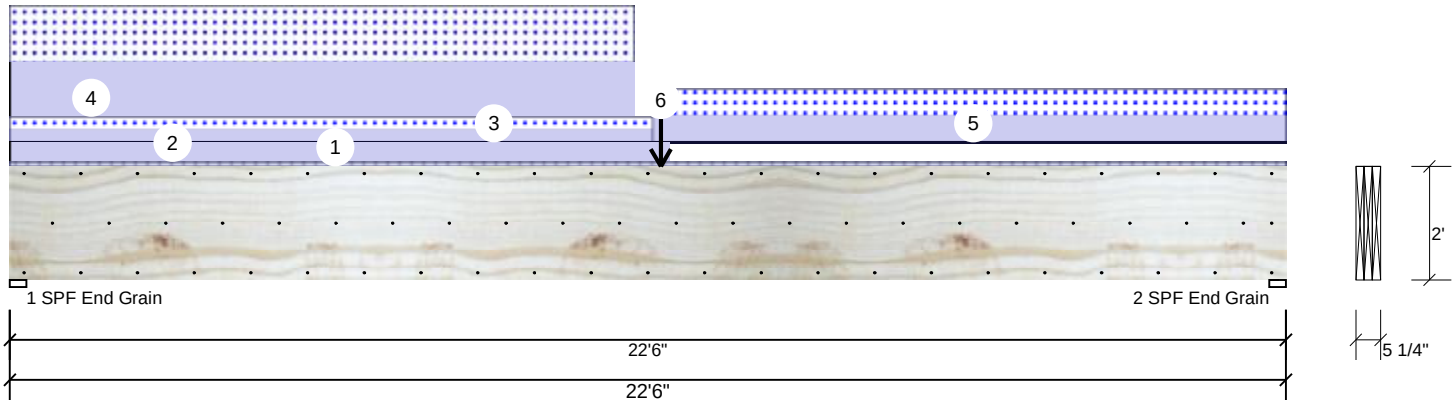
| | | | |
|---|---|---|---|
| Client: | Weaver Homes | Date: | 5/25/2021 |
| Project: | | Input by: | Marshall Naylor |
| Address: | Gaston II (181035B) | Job Name: | Gaston II (181035B) |
| | | Project #: | |

# FB2 Kerto-S LVL 1.750" X 24.000" 3-Ply - PASSED

Level: Level




## Member Information

| | | | |
|---|---|---|---|
| Type: | Girder | Application: | Floor |
| Plies: | 3 | Design Method: | ASD |
| Moisture Condition: | Dry | Building Code: | IBC 2012 |
| Deflection LL: | 480 | Load Sharing: | Yes |
| Deflection TL: | 360 | Deck: | Not Checked |
| Importance: | Normal | | |
| Temperature: | Temp <= 100°F | | |

## Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|---|---|---|---|---|---|
| 1 | 225 | 6536 | 5095 | 0 | 0 |
| 2 | 225 | 4429 | 3676 | 0 | 0 |

## Bearings

| Bearing | Length | Cap. | React D/L lb | Total | Ld. Case | Ld. Comb. |
|---|---|---|---|---|---|---|
| 1 - SPF End Grain | 3.500" | 73% | 6536 / 5095 | 11631 | L | D+S |
| 2 - SPF End Grain | 3.500" | 51% | 4429 / 3676 | 8104 | L | D+S |

## Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|---|---|---|---|---|---|---|
| Moment | 65477 ft-lb | 11'5 3/4" | 131295 ft-lb | 0.499 (50%) | D+S | L |
| Unbraced | 65477 ft-lb | 11'5 3/4" | 65903 ft-lb | 0.994 (99%) | D+S | L |
| Shear | 10093 lb | 2'2 5/8" | 30912 lb | 0.327 (33%) | D+S | L |
| LL Defl inch | 0.226 (L/1171) | 11'1 11/16" | 0.552 (L/480) | 0.410 (41%) | S | L |
| TL Defl inch | 0.501 (L/528) | 11' 7/8" | 0.735 (L/360) | 0.680 (68%) | D+S | L |

## Design Notes

1 Fasten all plies using 3 rows of 10d Box nails (.128x3") at 12" o.c. Maximum end distance not to exceed 6".
2 Refer to last page of calculations for fasteners required for specified loads.
3 Girders are designed to be supported on the bottom edge only.
4 Top loads must be supported equally by all plies.
5 Top must be laterally braced at a maximum of 3'11 5/8" o.c.
6 Bottom braced at bearings.
7 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 | Tie-In | 0-0-0 to 22-6-0 | 0-6-0 | Far Face | 15 PSF | 40 PSF | 0 PSF | 0 PSF | 0 PSF | 1' Floor |
| 2 | Part. Uniform | 0-0-0 to 11-7-8 | | Top | 120 PLF | 0 PLF | 0 PLF | 0 PLF | 0 PLF | Wall |
| 3 | Part. Uniform | 0-0-0 to 11-4-0 | | Near Face | 79 PLF | 0 PLF | 79 PLF | 0 PLF | 0 PLF | M2 |
| 4 | Part. Uniform | 0-0-0 to 11-0-0 | | Top | 341 PLF | 0 PLF | 341 PLF | 0 PLF | 0 PLF | A2 |
| 5 | Part. Uniform | 11-4-0 to 22-6-0 | | Near Face | 164 PLF | 0 PLF | 164 PLF | 0 PLF | 0 PLF | M3 |
| 6 | Point | 11-5-12 | | Top | 2293 lb | 0 lb | 2293 lb | 0 lb | 0 lb | B2 |
| | Self Weight | | | | 28 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**

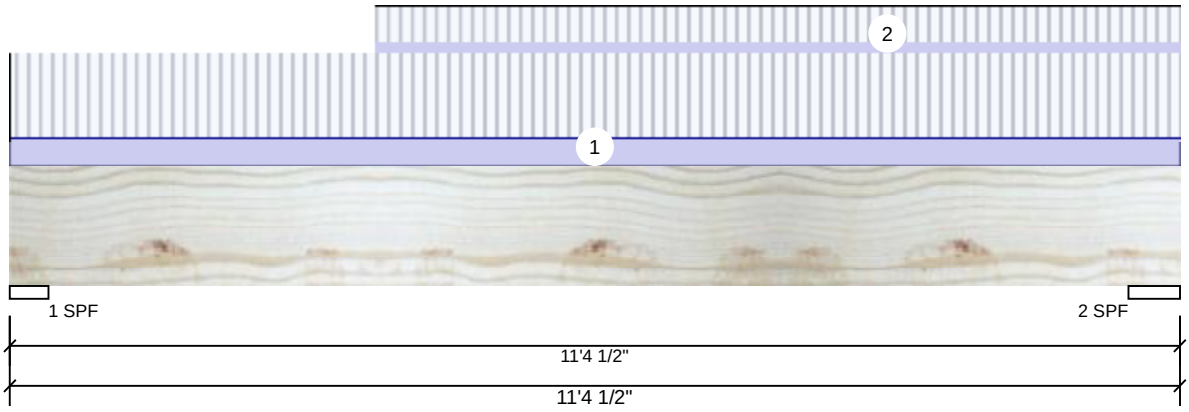
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

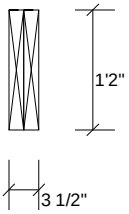
Comtech, Inc.
1001 S. Reilly Road, Suite #639
Fayetteville, NC
USA
28314
910-864-TRUS

| | | | |
|---|---|---|---|
| Client: | Weaver Homes | Date: | 5/25/2021 |
| Project: | | Input by: | Marshall Naylor |
| Address: | Gaston II (181035B) | Job Name: | Gaston II (181035B) |
| | | Project #: | |

# FB1 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: | 480 | Load Sharing: | No |
| Deflection TL: | 360 | Deck: | Not Checked |
| Importance: | Normal | | |
| Temperature: | Temp <= 100°F | | |

## Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|---|---|---|---|---|---|
| 1 | 2129 | 771 | 0 | 0 | 0 |
| 2 | 2523 | 904 | 0 | 0 | 0 |

## Bearings

| Bearing | Length | Cap. | React D/L lb | Total | Ld. Case | Ld. Comb. |
|---|---|---|---|---|---|---|
| 1 - SPF | 4.500" | 43% | 771 / 2129 | 2899 | L | D+L |
| 2 - SPF | 6.000" | 38% | 904 / 2523 | 3426 | L | D+L |

## Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|---|---|---|---|---|---|---|
| Moment | 8168 ft-lb | 5'9 3/16" | 26999 ft-lb | 0.303 (30%) | D+L | L |
| Unbraced | 8168 ft-lb | 5'9 3/16" | 10258 ft-lb | 0.796 (80%) | D+L | L |
| Shear | 2446 lb | 9'9 1/4" | 10453 lb | 0.234 (23%) | D+L | L |
| LL Defl inch | 0.090 (L/1419) | 5'8 3/16" | 0.266 (L/480) | 0.340 (34%) | L | L |
| TL Defl inch | 0.122 (L/1044) | 5'8 3/16" | 0.354 (L/360) | 0.340 (34%) | D+L | L |

## Design Notes

1 Girders are designed to be supported on the bottom edge only.
2 Multiple plies must be fastened together as per manufacturer's details.
3 Top loads must be supported equally by all plies.
4 Top braced at bearings.
5 Bottom braced at bearings.
6 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 | 106 PLF | 318 PLF | 0 PLF | 0 PLF | 0 PLF | F5 |
| 2 | Part. Uniform | 3-6-8 to 11-4-8 | | Top | 44 PLF | 132 PLF | 0 PLF | 0 PLF | 0 PLF | F9 |
| | 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**

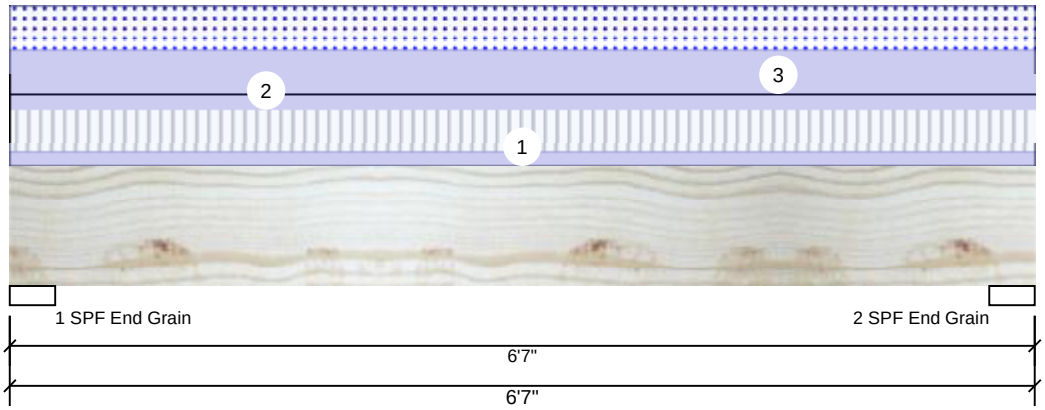
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

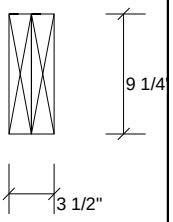
Comtech, Inc.
1001 S. Reilly Road, Suite #639
Fayetteville, NC
USA
28314
910-864-TRUS

| | | | |
|---|---|---|---|
| Client: | Weaver Homes | Date: | 5/25/2021 |
| Project: | | Input by: | Marshall Naylor |
| Address: | Gaston II (181035B) | Job Name: | Gaston II (181035B) |
| | | Project #: | |

# 6/0 SLIDER 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: | 480 | Load Sharing: | No |
| Deflection TL: | 360 | Deck: | Not Checked |
| Importance: | Normal | | |
| Temperature: | Temp <= 100°F | | |

## Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|---|---|---|---|---|---|
| 1 | 1060 | 1887 | 1113 | 0 | 0 |
| 2 | 1060 | 1887 | 1113 | 0 | 0 |

## Bearings

| Bearing | Length | Cap. | React D/L lb | Total | Ld. Case | Ld. Comb. |
|---|---|---|---|---|---|---|
| 1 - SPF End Grain | 3.500" | 33% | 1887 / 1629 | 3516 | L | D+0.75(L+S) |
| 2 - SPF End Grain | 3.500" | 33% | 1887 / 1629 | 3516 | L | D+0.75(L+S) |

## Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|---|---|---|---|---|---|---|
| Moment | 5009 ft-lb | 3'3 1/2" | 14423 ft-lb | 0.347 (35%) | D+0.75(L+S) | L |
| Unbraced | 5009 ft-lb | 3'3 1/2" | 10451 ft-lb | 0.479 (48%) | D+0.75(L+S) | L |
| Shear | 2448 lb | 1' | 7943 lb | 0.308 (31%) | D+0.75(L+S) | L |
| LL Defl inch | 0.042 (L/1741) | 3'3 1/2" | 0.153 (L/480) | 0.280 (28%) | 0.75(L+S) | L |
| TL Defl inch | 0.091 (L/807) | 3'3 1/2" | 0.204 (L/360) | 0.450 (45%) | D+0.75(L+S) | L |

## Design Notes

1 Girders are designed to be supported on the bottom edge only.
2 Multiple plies must be fastened together as per manufacturer's details.
3 Top loads must be supported equally by all plies.
4 Top braced at bearings.
5 Bottom braced at bearings.
6 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 | 108 PLF | 322 PLF | 0 PLF | 0 PLF | 0 PLF | F4 |
| 2 | Uniform | | | Top | 120 PLF | 0 PLF | 0 PLF | 0 PLF | 0 PLF | WALL |
| 3 | Uniform | | | Top | 338 PLF | 0 PLF | 338 PLF | 0 PLF | 0 PLF | A4 |
| | 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**

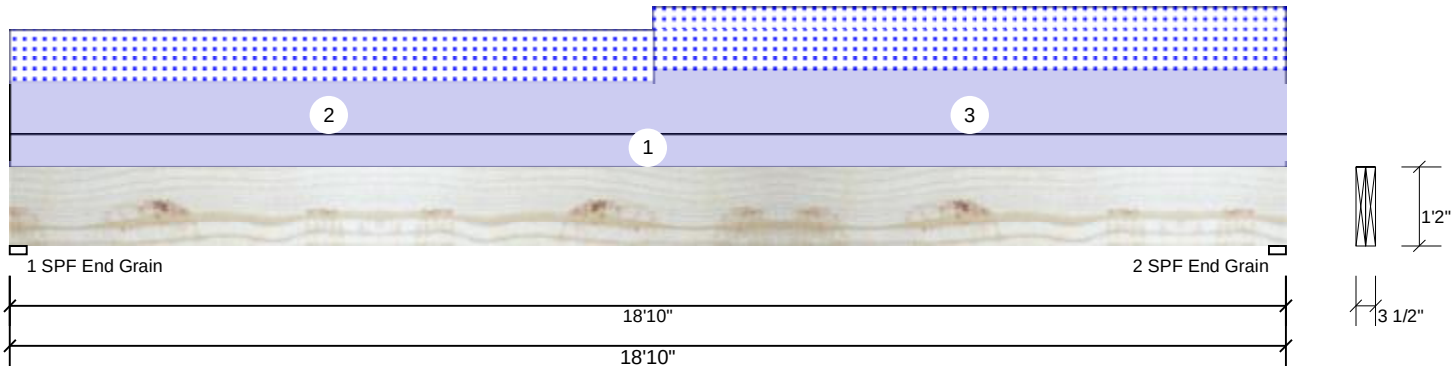
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

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

| | | | |
|---|---|---|---|
| Client: | Weaver Homes | Date: | 5/25/2021 |
| Project: | | Input by: | Marshall Naylor |
| Address: | Gaston II (181035B) | Job Name: | Gaston II (181035B) |
| | | Project #: | |

# Front 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: | 480 | Load Sharing: | No |
| Deflection TL: | 360 | Deck: | Not Checked |
| Importance: | Normal | | |
| Temperature: | Temp <= 100°F | | |

## Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|---|---|---|---|---|---|
| 1 | 0 | 1619 | 952 | 0 | 0 |
| 2 | 0 | 1720 | 1052 | 0 | 0 |

## Bearings

| Bearing | Length | Cap. | React D/L lb | Total | Ld. Case | Ld. Comb. |
|---|---|---|---|---|---|---|
| 1 - SPF End Grain | 3.000" | 28% | 1619 / 952 | 2571 | L | D+S |
| 2 - SPF End Grain | 3.000" | 30% | 1720 / 1052 | 2772 | L | D+S |

## Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|---|---|---|---|---|---|---|
| Moment | 12090 ft-lb | 9'8 7/8" | 31049 ft-lb | 0.389 (39%) | D+S | L |
| Unbraced | 12090 ft-lb | 9'8 7/8" | 12111 ft-lb | 0.998 (100%) | D+S | L |
| Shear | 2360 lb | 17'5 3/4" | 12021 lb | 0.196 (20%) | D+S | L |
| LL Defl inch | 0.184 (L/1202) | 9'6 3/16" | 0.461 (L/480) | 0.400 (40%) | S | L |
| TL Defl inch | 0.491 (L/451) | 9'5 13/16" | 0.615 (L/360) | 0.800 (80%) | D+S | L |

## Design Notes

1 Girders are designed to be supported on the bottom edge only.
2 Multiple plies must be fastened together as per manufacturer's details.
3 Top loads must be supported equally by all plies.
4 Top must be laterally braced at a maximum of 8'7 7/8" o.c.
5 Bottom braced at bearings.
6 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 | 60 PLF | 0 PLF | 0 PLF | 0 PLF | 0 PLF | wall |
| 2 | Part. Uniform | 0-0-0 to 9-6-0 | | Top | 96 PLF | 0 PLF | 96 PLF | 0 PLF | 0 PLF | M2 |
| 3 | Part. Uniform | 9-6-0 to 18-10-0 | | Top | 117 PLF | 0 PLF | 117 PLF | 0 PLF | 0 PLF | M3 |
| | 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**

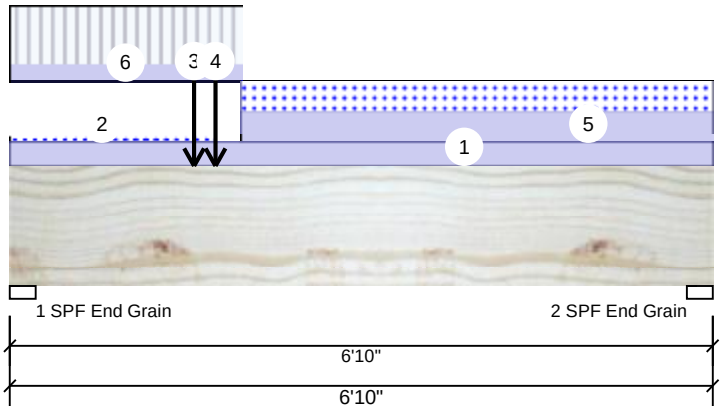
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

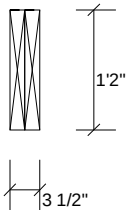
Comtech, Inc.
1001 S. Reilly Road, Suite #639
Fayetteville, NC
USA
28314
910-864-TRUS

| | | | |
|---|---|---|---|
| Client: | Weaver Homes | Date: | 5/25/2021 |
| Project: | | Input by: | Marshall Naylor |
| Address: | Gaston II (181035B) | Job Name: | Gaston II (181035B) |
| | | Project #: | |

# Window Hdr. 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: | 480 | Load Sharing: | No |
| Deflection TL: | 360 | Deck: | Not Checked |
| Importance: | Normal | | |
| Temperature: | Temp <= 100°F | | |

## Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|---|---|---|---|---|---|
| 1 | 2861 | 3387 | 1990 | 0 | 0 |
| 2 | 873 | 1906 | 1168 | 0 | 0 |

## Bearings

| Bearing | Length | Cap. | React D/L lb | Total | Ld. Case | Ld. Comb. |
|---|---|---|---|---|---|---|
| 1 - SPF End Grain | 3.000" | 77% | 3387 / 3638 | 7025 | L | D+0.75(L+S) |
| 2 - SPF End Grain | 3.000" | 38% | 1906 / 1531 | 3437 | L | D+0.75(L+S) |

## Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|---|---|---|---|---|---|---|
| Moment | 11172 ft-lb | 2' | 31049 ft-lb | 0.360 (36%) | D+0.75(L+S) | L |
| Unbraced | 11172 ft-lb | 2' | 15735 ft-lb | 0.710 (71%) | D+0.75(L+S) | L |
| Shear | 6425 lb | 1'4 1/4" | 12021 lb | 0.534 (53%) | D+0.75(L+S) | L |
| LL Defl inch | 0.033 (L/2343) | 2'7 5/8" | 0.161 (L/480) | 0.200 (20%) | 0.75(L+S) | L |
| TL Defl inch | 0.067 (L/1165) | 2'8 7/8" | 0.215 (L/360) | 0.310 (31%) | D+0.75(L+S) | L |

## Design Notes

1 Girders are designed to be supported on the bottom edge only.
2 Multiple plies must be fastened together as per manufacturer's details.
3 Top loads must be supported equally by all plies.
4 Top braced at bearings.
5 Bottom braced at bearings.
6 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 | 120 PLF | 0 PLF | 0 PLF | 0 PLF | 0 PLF | WALL |
| 2 | Tie-In | 0-0-0 to 2-0-0 | 1-0-0 | Top | 20 PSF | 0 PSF | 20 PSF | 0 PSF | 0 PSF | 2' ROOF |
| 3 | Point | 1-9-8 | | Top | 1040 lb | 3115 lb | 0 lb | 0 lb | 0 lb | F08 |
| 4 | Point | 2-0-0 | | Top | 2385 lb | 0 lb | 2385 lb | 0 lb | 0 lb | C3 |
| 5 | Part. Uniform | 2-3-0 to 6-10-0 | | Top | 160 PLF | 0 PLF | 160 PLF | 0 PLF | 0 PLF | C2 |
| 6 | Part. Uniform | 2-3-0 to 0-0-0 | | Top | 97 PLF | 300 PLF | 0 PLF | 0 PLF | 0 PLF | F07 |
| | 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**

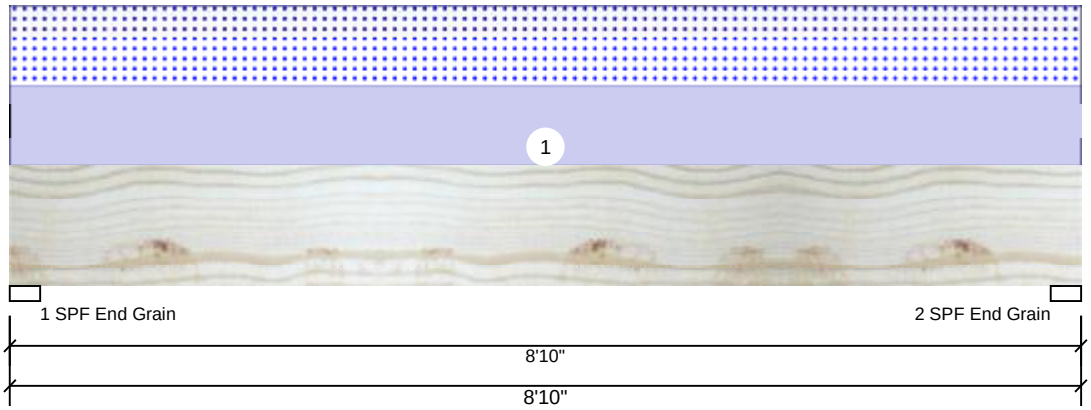
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

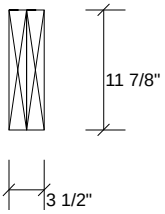
Comtech, Inc.
1001 S. Reilly Road, Suite #639
Fayetteville, NC
USA
28314
910-864-TRUS

| | | | |
|---|---|---|---|
| Client: | Weaver Homes | Date: | 5/25/2021 |
| Project: | | Input by: | Marshall Naylor |
| Address: | Gaston II (181035B) | Job Name: | Gaston II (181035B) |
| | | Project #: | |

# GDH-2 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: | 480 | Load Sharing: | No |
| Deflection TL: | 360 | Deck: | Not Checked |
| Importance: | Normal | | |
| Temperature: | Temp <= 100°F | | |

## Reactions UNPATTERNED lb (Uplift)

| Brg | Live | Dead | Snow | Wind | Const |
|---|---|---|---|---|---|
| 1 | 0 | 1145 | 1104 | 0 | 0 |
| 2 | 0 | 1145 | 1104 | 0 | 0 |

## Bearings

| Bearing | Length | Cap. | React D/L lb | Total | Ld. Case | Ld. Comb. |
|---|---|---|---|---|---|---|
| 1 - SPF End Grain | 3.000" | 25% | 1145 / 1104 | 2249 | L | D+S |
| 2 - SPF End Grain | 3.000" | 25% | 1145 / 1104 | 2249 | L | D+S |

## Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|---|---|---|---|---|---|---|
| Moment | 4554 ft-lb | 4'5" | 22897 ft-lb | 0.199 (20%) | D+S | L |
| Unbraced | 4554 ft-lb | 4'5" | 10675 ft-lb | 0.427 (43%) | D+S | L |
| Shear | 1650 lb | 1'2 1/8" | 10197 lb | 0.162 (16%) | D+S | L |
| LL Defl inch | 0.036 (L/2845) | 4'5 1/16" | 0.211 (L/480) | 0.170 (17%) | S | L |
| TL Defl inch | 0.073 (L/1397) | 4'5 1/16" | 0.282 (L/360) | 0.260 (26%) | D+S | L |

## Design Notes

1 Girders are designed to be supported on the bottom edge only.
2 Multiple plies must be fastened together as per manufacturer's details.
3 Top loads must be supported equally by all plies.
4 Top braced at bearings.
5 Bottom braced at bearings.
6 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 | 250 PLF | 0 PLF | 0 PLF | G2 |
| | 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**

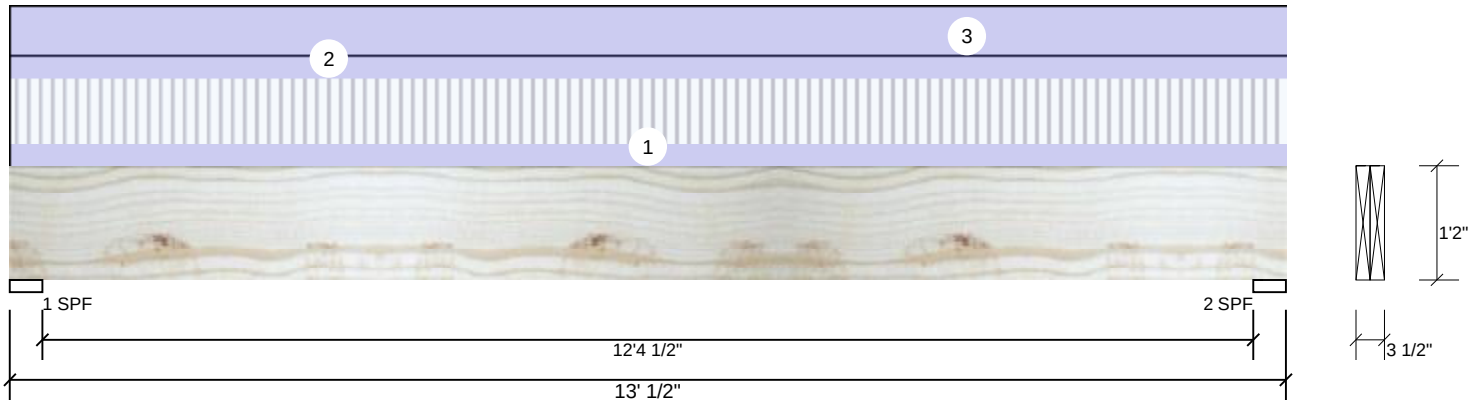
Metsä Wood
301 Merritt 7 Building, 2nd Floor
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
ICC-ES: ESR-3633

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

| | | | |
|---|---|---|---|
| Client: | Weaver Homes | Date: | 5/25/2021 |
| Project: | | Input by: | Marshall Naylor |
| Address: | Gaston II (181035B) | Job Name: | Gaston II (181035B) |
| | | Project #: | |

# GCO 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: | 480 | 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 | 2374 | 3468 | 0 | 0 | 0 |
| 2 | 2374 | 3468 | 0 | 0 | 0 |

## Bearings

| Bearing | Length | Cap. | React D/L lb | Total | Ld. Case | Ld. Comb. |
|---|---|---|---|---|---|---|
| 1 - SPF | 4.000" | 98% | 3468 / 2374 | 5842 | L | D+L |
| 2 - SPF | 4.000" | 98% | 3468 / 2374 | 5842 | L | D+L |

## Analysis Results

| Analysis | Actual | Location | Allowed | Capacity | Comb. | Case |
|---|---|---|---|---|---|---|
| Moment | 17498 ft-lb | 6'6 1/4" | 26999 ft-lb | 0.648 (65%) | D+L | L |
| Unbraced | 17498 ft-lb | 6'6 1/4" | 17570 ft-lb | 0.996 (100%) | D+L | L |
| Shear | 4554 lb | 1'5 1/4" | 10453 lb | 0.436 (44%) | D+L | L |
| LL Defl inch | 0.142 (L/1059) | 6'6 1/4" | 0.312 (L/480) | 0.450 (45%) | L | L |
| TL Defl inch | 0.349 (L/430) | 6'6 1/4" | 0.625 (L/240) | 0.560 (56%) | D+L | L |

## Design Notes

1 Girders are designed to be supported on the bottom edge only.
2 Multiple plies must be fastened together as per manufacturer's details.
3 Top loads must be supported equally by all plies.
4 Top must be laterally braced at a maximum of 5'6 3/4" o.c.
5 Bottom braced at bearings.
6 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 | 122 PLF | 364 PLF | 0 PLF | 0 PLF | 0 PLF | F01 |
| 2 | Uniform | | | Top | 125 PLF | 0 PLF | 0 PLF | 0 PLF | 0 PLF | Wall |
| 3 | Uniform | | | Top | 274 PLF | 0 PLF | 0 PLF | 0 PLF | 0 PLF | A1 |
| | 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
Norwalk, CT 06851
(800) 622-5850
www.metsawood.com/us
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