



# ART MASSIF

WOOD STRUCTURE

— TECHNICAL SHEET





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# GLUED- LAMINATED



TIMBER DECKING (GLT)

# GLUED-LAMINATED TIMBER DECKING (GLT)

## TECHNICAL DATA

### Species

Black spruce

### Grade

SPF #2&BTR

### Applications

Decking or roofing

### Appearance grade

Architectural

### Wood moisture content

12% +/- 2%

### Thicknesses

1 1/2", 2 3/8", 3 1/8", 5 1/8"

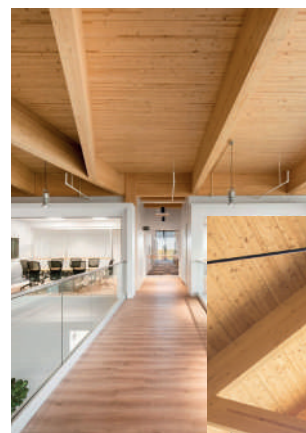
38 mm, 60 mm, 80 mm, 130 mm

### Lengths

Up to 32' (9.75 m)

### Relative density

G = 0,44



\* The decking cannot be used as a diaphragm. Plywood must be added to act as the diaphragm.

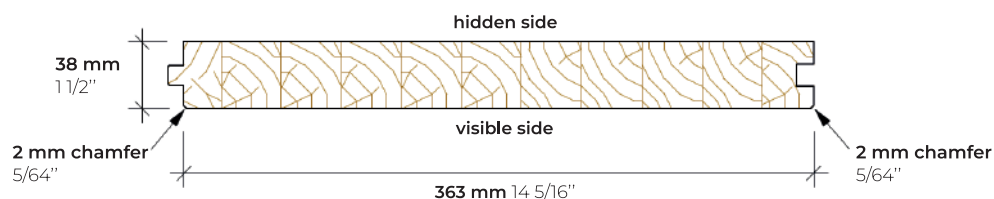
## TECHNICAL PROFILES

### Thickness

38 mm . 1 1/2"

### Coverage width

363 mm . 14 5/16"



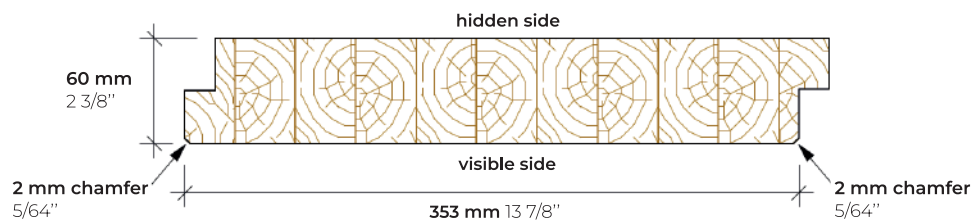
## TECHNICAL PROFILES

### Thickness

60 mm . 2 3/8"

### Coverage width

353 mm . 13 7/8"

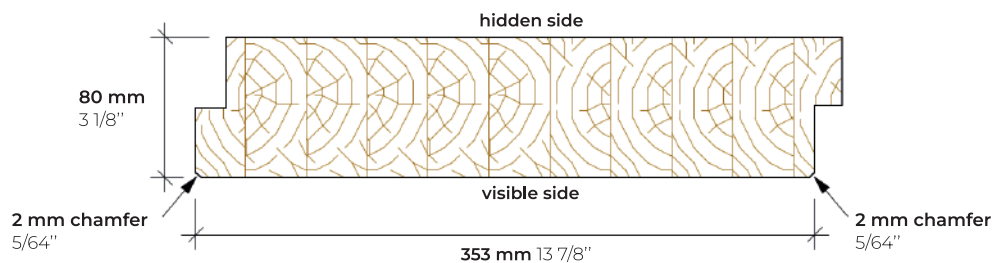


### Thickness

80 mm . 3 1/8"

### Coverage width

353 mm . 13 7/8"

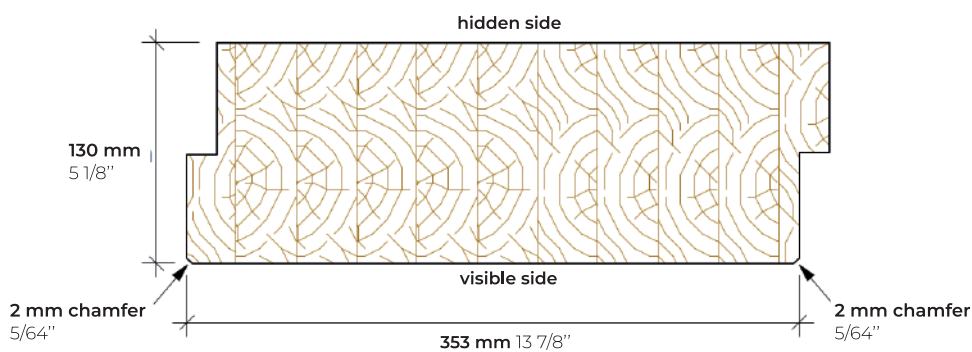


### Thickness

130 mm . 5 1/8"

### Coverage width

353 mm . 13 7/8"





# SPAN TABLE



TYPICAL GLT DECKING

# SPAN TABLE TYPICAL GLT DECKING

## ART MASSIF DECKING

### Glued timber - No.2 and better

Spans calculated under National Building Code of Canada 2015 load combinations and CSA 086-14 design methods. kPa and m converted in psf and ft.



### FLOORING

Deflection criteria : L/360 under live loads  
L/240 under full loads  
Static loads : D = 21 psf

| Thickness   | 1 ½" (38mm) | 2 3/8" (60mm) | 3 1/8" (80mm) | 5 1/8" (130mm) |
|-------------|-------------|---------------|---------------|----------------|
| L = 40 psf  | 5,25 ft     | 8,5 ft        | 11,5 ft       | 18,7 ft        |
| L = 50 psf  | 5 ft        | 7,8 ft        | 10,5 ft       | 17,4 ft        |
| L = 100 psf | 4 ft        | 6,2 ft        | 8,5 ft        | 13,8 ft        |

### ROOFING

Deflection criteria : L/240 under live loads  
L/180 under full loads  
Static loads : D = 21 psf

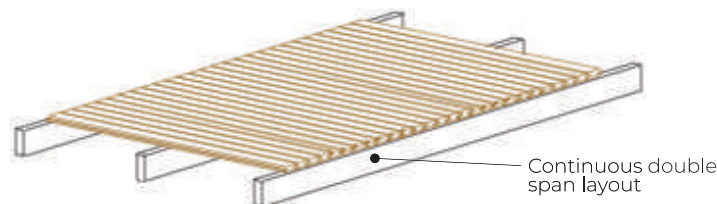
| Thickness  | 1 ½" (38mm) | 2 3/8" (60mm) | 3 1/8" (80mm) | 5 1/8" (130mm) |
|------------|-------------|---------------|---------------|----------------|
| S = 52 psf | 5,6 ft      | 8,9 ft        | 12,1 ft       | 19,7 ft        |
| S = 73 psf | 5,25 ft     | 8,2 ft        | 11,1 ft       | 18 ft          |
| S = 94 psf | 4,6 ft      | 7,5 ft        | 10,1 ft       | 16,7 ft        |

# SPAN TABLE TYPICAL GLT DECKING

## ART MASSIF DECKING

### Glued timber - No.2 and better

Spans calculated under National Building Code of Canada 2015 load combinations and CSA 086-14 design methods. kPa and m converted in psf and ft.



### FLOORING

Deflection criteria :  $L/360$  under live loads  
 $tL/240$  under full loads  
 Static loads :  $D = 21$  psf

| Thickness   | 1 ½" (38mm) | 2 3/8" (60mm) | 3 1/8" (80mm) | 5 1/8" (130mm) |
|-------------|-------------|---------------|---------------|----------------|
| L = 40 psf  | 6,9 ft      | 11,1 ft       | 15 ft         | 25 ft          |
| L = 50 psf  | 6,5 ft      | 10,5 ft       | 14,1 ft       | 23,3 ft        |
| L = 100 psf | 5,25 ft     | 8,2 ft        | 11,1 ft       | 18,4 ft        |

### ROOFING

Deflection criteria :  $L/240$  under live loads  
 $L/180$  under full loads  
 Static loads :  $D = 21$  psf

| Thickness  | 1 ½" (38mm) | 2 3/8" (60mm) | 3 1/8" (80mm) | 5 1/8" (130mm) |
|------------|-------------|---------------|---------------|----------------|
| S = 52 psf | 7,5 ft      | 11,8 ft       | 16 ft         | 26,25 ft       |
| S = 73 psf | 6,9 ft      | 10,8 ft       | 14,8 ft       | 24,3 ft        |
| S = 94 psf | 6,2 ft      | 9,85 ft       | 13,4 ft       | 22 ft          |

This table should be used as a guide only. The values provided give an estimate of possible ranges. Refer to an engineer for full verification based on the actual conditions of the project being designed.



# FLOORING AND ROOFTING COMPOSITION



DIAGRAM

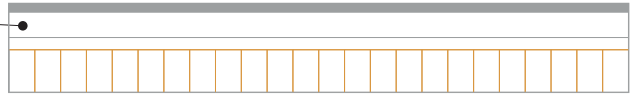
# DIAGRAM FOR FLOORING AND ROOFING COMPOSITION

## Roof composition by architect

E.g., vapor barrier, insulation, roof covering

**Plywood 1/2 in. minimum**

**Art Massif wood decking**

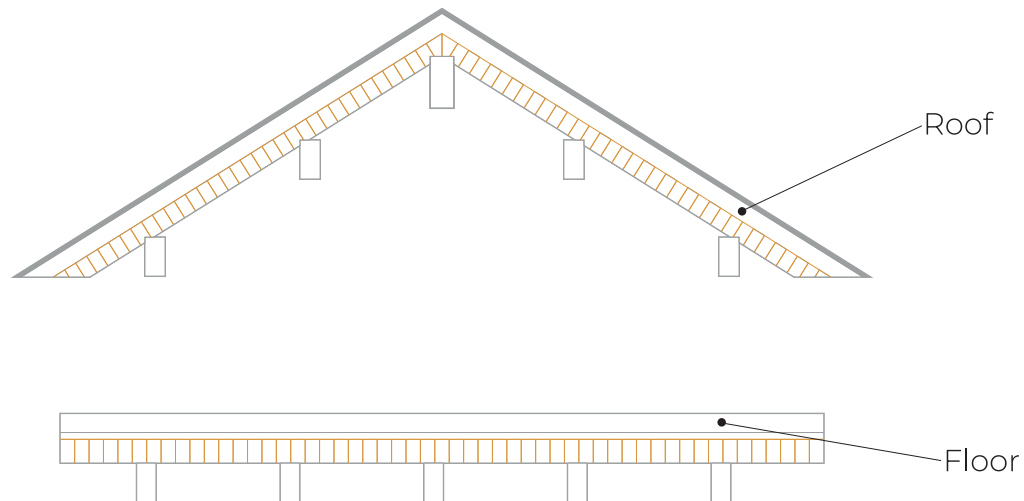
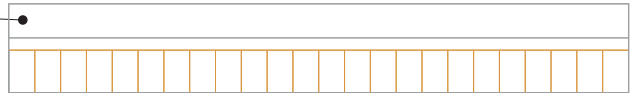


## Floor composition by architect

E.g., insulation, acoustic membrane, concrete screed plywood, floor covering

**Plywood 1/2 in. minimum**

**Art Massif wood decking**



1. The architect must comply with the National Building Code of Canada requirements for floor and roof compositions.
2. Plywood of at least 1/2 in. thick must be applied over the decking to take the diaphragm forces and for a uniform surface. Design of the diaphragm must be done by the structural engineer.
3. It is a good idea to leave the decking visible under the floor or roof to add architectural interest and to save on materials.



# BEAMS AND COLUMNS



STANDARD SECTION



# BEAMS AND COLUMNS

## TECHNICAL DATA

### Species

Black spruce and jack pine (SP)  
contains 90% black spruce

### Strength grade

20f-EX, 12c-E

### Appearance grade

Architectural

### Manufacturing

Certified products CSA 0122-16  
Certified plant CSA 0177-06  
Certified adhesive CSA 0112.9

### Inspection agency

APA plant no. 1104

### Wood moisture content

12% +/- 2%

### Lamella thickness

1 3/8" (34.7 mm)

### Widths

3 1/8" 5 1/8" 6 7/8" 8 7/16" 10 7/1" 12 3/8" 14 3/8"  
80 mm, 130 mm, 175 mm, 215 mm, 265 mm, 315 mm, 365 mm

### Heights

From 4-1/8" to 49-3/16" (104 mm → 1,249 mm)  
in 34.7 mm increments

\* Additional heights available on request

### Lengths

Continuous elements without joints: up to 68' (20.7 m)

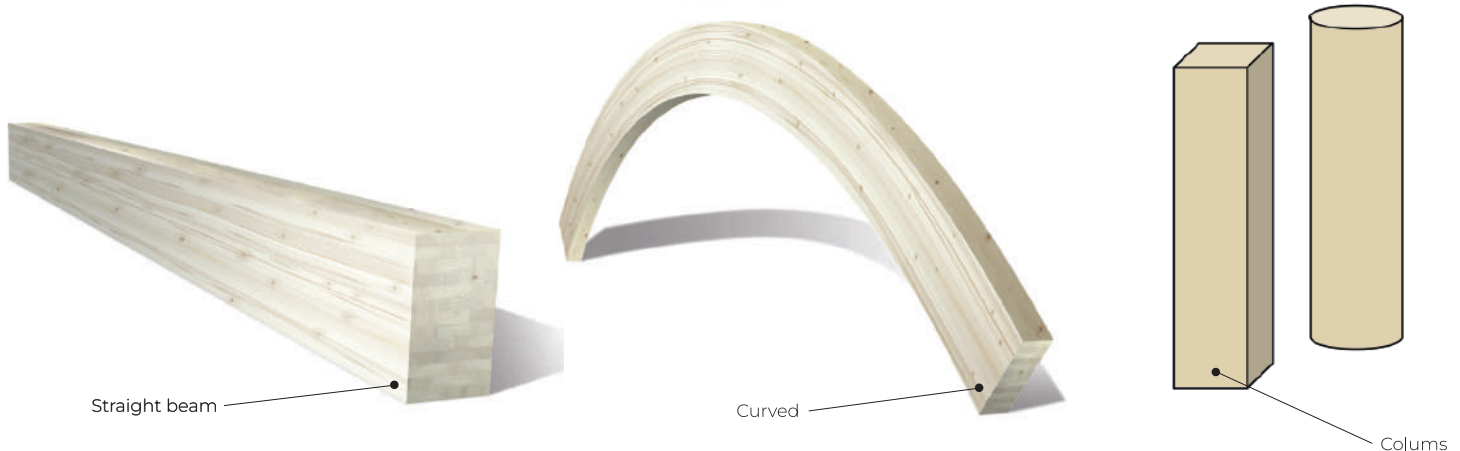
### Dimensional tolerances

Width +/- 2 mm

Height +/- 0.4 mm per lamella for a max of +/- 6 mm

### Relative density

G = 0,44



# STANDARD SECTION BEAMS AND COLUMNS

| Width     | in.<br>(mm) | 3 1/8"<br>(80mm) | 5 1/8"<br>(130mm) | 6 7/8"<br>(175mm) | 8 7/16"<br>(215mm) | 10 7/16"<br>(265mm) | 12 3/8"<br>(315mm) | 14 3/8"<br>(365mm) |
|-----------|-------------|------------------|-------------------|-------------------|--------------------|---------------------|--------------------|--------------------|
| Height    | mm          |                  |                   |                   |                    |                     |                    |                    |
| 4 1/8"    | 104         | X                |                   |                   |                    |                     |                    |                    |
| 5 1/2"    | 139         | X                | X                 |                   |                    |                     |                    |                    |
| 6 7/8"    | 174         | X                | X                 | X                 |                    |                     |                    |                    |
| 8 3/16"   | 208         | X                | X                 | X                 | X                  |                     |                    |                    |
| 9 9/16"   | 243         | X                | X                 | X                 | X                  | X                   |                    |                    |
| 10 15/16" | 278         | X                | X                 | X                 | X                  | X                   |                    |                    |
| 12 5/16"  | 312         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 13 11/16" | 347         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 15 1/16"  | 382         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 16 3/8"   | 416         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 17 3/4"   | 451         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 19 1/8"   | 486         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 20 1/2"   | 521         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 21 7/8"   | 555         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 23 1/4"   | 590         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 24 5/8"   | 625         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 25 15/16" | 659         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 27 5/16"  | 694         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 28 11/16" | 729         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 30 1/16"  | 763         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 31 7/16"  | 798         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 32 13/16" | 833         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 34 3/16"  | 868         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 35 1/2"   | 902         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 36 7/8"   | 937         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
| 38 1/4"   | 972         | X                | X                 | X                 | X                  | X                   | X                  | X                  |
|           |             |                  |                   |                   |                    |                     |                    |                    |

# STANDARD SECTION BEAMS AND COLUMNS

continued

| Width     | in.<br>(mm) | 3 1/8"<br>(80mm) | 5 1/8"<br>(130mm) | 6 7/8"<br>(175mm) | 8 7/16"<br>(215mm) | 10 7/16"<br>(265mm) | 12 3/8"<br>(315mm) | 14 3/8"<br>(365mm) |
|-----------|-------------|------------------|-------------------|-------------------|--------------------|---------------------|--------------------|--------------------|
| Height    | mm          |                  |                   |                   |                    |                     |                    |                    |
| 39 5/8"   | 1006        |                  | X                 | X                 | X                  | X                   | X                  | X                  |
| 41"       | 1041        |                  | X                 | X                 | X                  | X                   | X                  | X                  |
| 42 3/8"   | 1076        |                  | X                 | X                 | X                  | X                   | X                  | X                  |
| 43 11/16" | 1110        |                  | X                 | X                 | X                  | X                   | X                  | X                  |
| 45 1/16"  | 1145        |                  | X                 | X                 | X                  | X                   | X                  | X                  |
| 46 7/16"  | 1180        |                  | X                 | X                 | X                  | X                   | X                  | X                  |
| 47 13/16" | 1215        |                  | X                 | X                 | X                  | X                   | X                  | X                  |
| 49 3/16"  | 1249        |                  | X                 | X                 | X                  | X                   | X                  | X                  |

## ROUND COLUMNS

### Diameters

5" to 14"

125 mm to 355 mm

### Lengths

Up to 32' (9,75m)

Up to 16' (4,88m) for small diameters (Ø5")





# CURVED BEAM

## Section heights and widths

Same as for beams and columns

## Radii of curvature

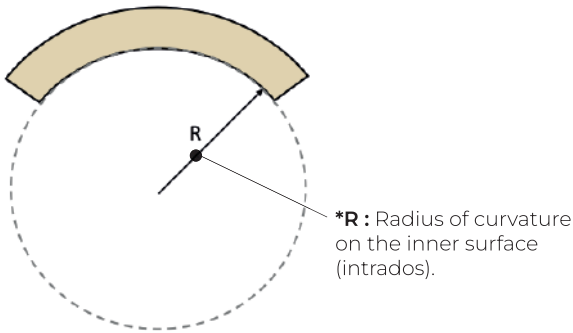
Minimum radius of 72" (1,829 mm)



TABLE 1

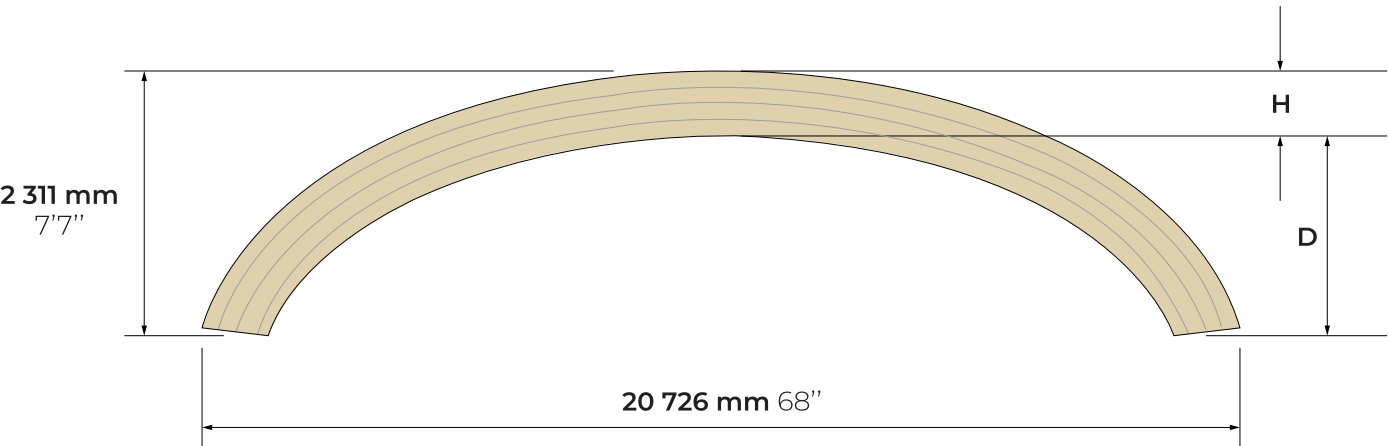
Lamella thickness based on radii of curvature

| Radii of curvature R* |         | Lamella thickness |
|-----------------------|---------|-------------------|
| (mm)                  | (in.)   | (mm)              |
| 9,500+                | 374+    | 34,7              |
| 6,200-9,499           | 244-374 | 25                |
| 2,200-6,199           | 87-244  | 13                |
| 1,829-2,199           | 72-87   | 6                 |



## Curved dimensions

The overall dimensions of the curved beam (a continuous section) must be included in the rectangle below to meet manufacturing limits. Please contact us for other dimensions that fall outside this range.



Clearance :  $d = R - \sqrt{R^2 + D^2}$



# ART MASSIF

WOOD STRUCTURE

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