

Nordic Lam™ Scaffold Plank
Nordic Structures

PR-L317

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Products: Nordic Lam™ Scaffold Plank
Nordic Structures
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1. Basis of the product report:
 - ASTM D3737-12, Standard Practice for Establishing Allowable Properties for Structural Glued Laminated Timber (Glulam)
 - ANSI A190.1-2017, Standard for Wood Products – Structural Glued Laminated Timber
 - ANSI/ASSE A10.8-2011, Scaffolding Safety Requirements
 - CAN/CSA S269.2-M87 (R2003), Access Scaffolding for Construction Purposes
 - CSA Z797-09 (R2014), Code of Practice for Access Scaffold
 - 2015 AWC NDS[®] Supplement National Design Specification[®] Design Values for Wood Construction
 - APA Reports T2016P-13 and T2017P-10, and other qualification data
2. Product description:

Nordic Lam™ scaffold planks are a Black Spruce structural glued laminated timber (glulam) manufactured in accordance with ES11 and 24F-ES/NPG layup combinations developed in accordance with the principle of ASTM D3737 and documented in APA Product Report PR-L294 (www.apawood.org/resource-library). The Nordic Lam scaffold planks are individually proof-loaded in accordance with the in-plant manufacturing standard approved by APA. The Nordic Lam scaffold planks are available in net thickness of 2 inches (ES11) and 1-1/2 inches (24F-ES/NPG), a minimum width of 9 inches, and lengths up to 13 feet (for the maximum application span of 10 feet). Refer to www.chibou.com for application requirements and recommendations.
3. Design properties:

Table 1 lists allowable design values for Nordic Lam scaffold planks published in APA Product Report PR-L294 and confirmed by full-scale scaffold plank tests in accordance with ANSI/ASSE A10.8. Table 2 lists wet service factors, which shall be applied when the average equilibrium moisture content of the planks exceeds 16%. The allowable spans for Nordic Lam scaffold planks are listed in Table 3 for dry use and wet use, based on the OSHA-defined loading. The allowable spans for the CAN/CSA S269.2-defined loading are listed in Table 4 for dry use and wet use. The maximum allowable live load pressures for select spans are presented in Table 5 based on Annex E of CSA Z797. Selection of Nordic Lam scaffold planks shall be based on the information provided in this report and the recommendations provided by the manufacturer (see link above).
4. Product installation:

Nordic Lam scaffold planks shall be installed in accordance with OSHA (www.osha.gov) or CAN/CSA S269.2 regulations, and the instructions provided by the manufacturer (see link above).
5. Storage, handling, inspection and evaluation:

The storage and handling of Nordic Lam scaffold planks shall be in accordance with the recommendations provided by the manufacturer (see link above). Nordic Lam scaffold

planks shall be inspected by a qualified person to ensure they are in good condition prior to use. Products showing signs of damage, such as but not limited to splits, dents, gouges, face breaks, discoloration, odor, or decay, shall be removed from service.

6. Limitations:

- a) Nordic Lam scaffold planks shall be designed in accordance with ANSI/ASSE A10.8 or CAN/CSA S269.2 using the design values published in this report.
- b) Nordic Lam scaffold plank design values published in Table 1 apply to dry service conditions where the average equilibrium plank moisture content is less than 16 percent. When Nordic Lam scaffold planks are used where the average equilibrium moisture content will be 16% or higher, design values shall be multiplied by the wet service factors specified in Table 2.
- c) Nordic Lam scaffold planks shall not be used for building components, such as beams or headers.
- d) Nordic Lam scaffold planks are produced at the Chantiers Chibougamau, Quebec facilities under a quality assurance program audited by APA.
- e) This report is subject to re-examination in one year.

7. Identification:

Nordic Lam scaffold planks described in this report is identified by a label bearing the manufacturer's name (Chantiers Chibougamau) and/or trademark, the APA assigned plant number (1057), the product standard (ANSI/ASSE A10.8), the APA logo, the combination symbol, the report number PR-L317, and a means of identifying the date of manufacture.

Table 1. Nordic Lam Scaffold Plank Allowable Design Values ^(a,b)

Layup Combination	ES11	24F-ES/NPG
Plank Bending, F_{by} (psi)	1,750 ^(c)	2,400 ^(d)
Plank Modulus of Elasticity, E_y (psi)	1,500,000	1,800,000
Plank Longitudinal shear, F_{vy} (psi)	175	300

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbf = 4.448 N, 1 psi = 6.9 kPa.

- (a) Allowable design properties are developed based on ASTM D3737 as documented in APA Product Report PR-L294, and confirmed by full-scale scaffold plank tests in accordance with Appendix C of ANSI/ASSE A10.8.
- (b) These design values shall not be increased for duration of load and shall apply in dry service conditions where the average equilibrium plank moisture content is less than 16 percent. When planks are used where the average equilibrium moisture content will be 16% or higher, design values shall be multiplied by the wet service factors specified in Table 2.
- (c) The values of F_{by} are based on members 12 inches in depth. For depths less than 12 inches, F_{by} shall be permitted to be increased by multiplying by the size factor, $(12/d)^{1/9}$, where d is the scaffold plank depth in inches. When d is less than 3 inches, use the size adjustment factor for 3 inches.
- (d) The design value is applicable to scaffold plank products of 1-1/2 inches in thickness.

Table 2. Wet Service Factors, C_M (for plank moisture content of 16% or higher) ^(a)

Bending (F_{by})	Modulus of Elasticity (E_y)	Longitudinal Shear (F_{vy})
0.80	0.833	0.875

- (a) Based on the Adjustment Factors provided in Table 5C of the 2015 NDS Supplement.

Table 3. Allowable Spans for Nordic Lam Scaffold Planks Subjected to OSHA Loading ^(a, b)

OSHA Loading Condition	ES11					24F-ES/NPG				
	2" x 9"	2" x 9 1/4"	2" x 9 1/2"	2" x 11 1/4"	2" x 11 7/8"	1 1/2" x 9"	1 1/2" x 9 1/4"	1 1/2" x 9 1/2"	1 1/2" x 11 1/4"	1 1/2" x 11 7/8"
Simple Span (Feet) – DRY USE ONLY										
50 psf	10	10	10	10	10	10	10	10	10	10
75 psf	10	10	10	10	10	8	8	8	8	8
1-Person	10	10	10	10	10	10	10	10	10	10
2-Person	10	10	10	10	10	7	7	8	8	8
3-Person	7	7	7	8	8	5	5	5	6	6
Simple Span (Feet) – WET USE (exceeding 16% Moisture Content)										
50 psf	10	10	10	10	10	9	9	9	9	9
75 psf	10	10	10	10	10	8	8	8	8	8
1-Person	10	10	10	10	10	8	8	8	9	10
2-Person	9	9	9	10	10	7	7	7	8	8
3-Person	6	6	6	7	7	4	4	4	5	5

^(a) Dead load on plank based on glulam density of 42 pcf.

^(b) Live load deflections are limited to L/60, where L is the allowable span.

Table 4. Allowable Spans for Nordic Lam Scaffold Planks Subjected to CAN/CSA S269.2 Loading ^(a, b)

CAN/CSA S269.2 Loading Condition	ES11					24F-ES/NPG				
	1 1/2" x 9"	2" x 9 1/4"	2" x 9 1/2"	2" x 11 1/4"	2" x 11 7/8"	1 1/2" x 9"	1 1/2" x 9 1/4"	1 1/2" x 9 1/2"	1 1/2" x 11 1/4"	1 1/2" x 11 7/8"
Simple Span (Feet) – DRY USE ONLY										
50 psf (2.40 kN/m ²)	10	10	10	10	10	9	9	9	9	9
75 psf (3.60 kN/m ²)	10	10	10	10	10	8	8	8	8	8
500 lbf (2.2 kN)	7	8	8	9	9	5	5	5	6	6
Worker & Tools (25 psf + 250 plf) (1.20 kN/m ² + 3.63 kN/m)	10	10	10	10	10	8	8	8	8	8
Worker & Materials (75 psf + 265 plf) (3.60 kN/m ² + 3.88 kN/m)	8	8	8	8	8	6	6	6	6	6
Simple Span (Feet) – WET USE (exceeding 16% Moisture Content)										
50 psf (2.40 kN/m ²)	10	10	10	10	10	8	8	8	8	8
75 psf (3.60 kN/m ²)	9	9	9	9	9	7	7	7	7	7
500 lbf (2.2 kN)	6	6	6	7	8	4	4	4	5	5
Worker & Tools (25 psf + 250 plf) (1.20 kN/m ² + 3.63 kN/m)	10	10	10	10	10	7	7	7	7	7
Worker & Materials (75 psf + 265 plf) (3.60 kN/m ² + 3.88 kN/m)	7	7	7	7	7	5	5	5	5	5

^(a) Dead load on plank based on glulam density of 42 pcf.

^(b) Live load deflections are limited to L/80, where L is the allowable span.

Table 5. Maximum Uniform Live Loads [psf (kN/m²)] for Platforms of Nordic Lam Scaffold Planks Based on Annex E of CSA Z797^(a, b, c, d)

Layup Combination	Number of layers	Scaffold bay 5 ft (1.52 m) long	Scaffold bay 7 ft (2.13 m) long	Scaffold bay 10 ft (3.05 m) long
ES11	Single	150 (7.2)	150 (7.2)	50 (2.4)
	Double	>150 (>7.2)	>150 (>7.2)	100 (4.8)
	Triple	>150 (>7.2)	>150 (>7.2)	150 (7.2)
24F-ES/NPG	Single	150 (7.2)	75 (3.6)	NR ^(e)
	Double	>150 (>7.2)	150 (7.2)	50 (2.4)
	Triple	>150 (>7.2)	>150 (>7.2)	75 (3.6)

^(a) Dead load on plank based on glulam density of 42 pcf.

^(b) Live load deflections are limited to L/80, where L is the allowable span.

^(c) Based on wet stresses.

^(d) Scaffold platforms are 5-ft (1.52-m) wide.

^(e) "NR" denotes "not recommended", with allowable live loads of less than 50 psf (2.4 kN/m²) at the specified span.

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