

# 2900 F<sub>b</sub>- 2.0 E Design Values for 3.5"

## Master Plank Code Accepted Design Values — NER-555

Static Bending	Edge (Beam)- F <sub>b</sub>	2900 PSI
Modulus of Elasticity	True E:	2,000,000 PSI
	Apparent E:	1,900,000 PSI
Tension	F <sub>t</sub> :	2300 PSI
Compression	Parallel to grain - F <sub>C  </sub> :	2700 PSI
	Perpendicular to grain - F <sub>C⊥</sub> :	870 PSI
Shear	Beam - F <sub>V</sub> :	320 PSI

The bending size effect factor is  $(12/d)^{0.15}$ . This translates into a factor of 1.203 for 3.5 inch, 1.124 for 5.5 inch, 1.078 for 7.25 inch, 1.073 for 7.5 inch, 1.040 for 9.25 inch, 1.036 for 9.5 inch, 1.010 for 11.25 inch, 1.002 for 11.875 inch, 0.977 for 14 inch, 0.958 for 16 inch and 0.941 for 18 inch depths.

## Master Plank Section Properties

Size (inches)	Maximum Moment (ft-lbs)(M)	Maximum Shear (lbs)(V)	Moment of Inertia (in <sup>4</sup> )(I)	Section Modulus (in <sup>3</sup> )(S)	Weight (lbs/ft)
7 1/4	7992	5413	111	31	5.6
9 1/4	12542	6907	231	50	7.1
9 1/2	13176	7093	250	53	7.3
11 1/4	18015	8400	415	74	8.6
11 7/8	19911	8867	488	82	9.1
14	26999	10453	800	114	10.7
16	34565	11947	1195	149	12.3
18	42980	13440	1701	189	13.8
20	52230	14933	2333	233	15.3
24	73182	17920	4032	336	18.4

$$M = F_b * S / 12$$

$$V = F_v A / 1.5$$

$$I = bd^3 / 12$$

$$S = bd^2 / 6$$

12" F<sub>b</sub>=2900; F<sub>V</sub>=320 all depths

# Specification Guide

- 1.0 GENERAL** MASTER PLANK® is a laminate construction of spruce veneers procured from forests managed and certified under the Finnish Forest Certification System audited by BVQI (Bureau Veritas Quality International) according to the ISO14001 environmental standard and the ISO 9002 quality standard. It is composed of various qualities of veneer arranged to obtain optimum utilization of each veneer to develop maximum strength and reliability. All veneers are oriented with the grain parallel to the long dimension of the billet, commonly referred to as **Laminated Veneer Lumber (LVL)**.
- 2.0 INTENDED USE** This product is intended to be used as beams, joists, lintels or rafters under dry conditions of use, and for scaffold plank, staging, bleacher seats, cross arms, ladder rails and other industrial applications.
- 3.0 DIMENSIONS AND COMPOSITION**

Nominal Thickness (inches)	3/4	1-1/8	1-1/4	1-1/2	1-5/8	1-3/4	2	2-1/2	3	3-1/2
Nominal Thickness (mm)	19	28	33	39	42	45	51	63	75	88
Widths	3-5/8" to 24"									
Lengths	8' to 60'									
Number Plies	6	9	11	13	14	15	17	21	25	30
Thickness of Plies	3.0 mm									

## MATERIAL

- 4.0 Veneer Plies** Face, back and inner plies are all of the same species and meet Pan European Forest Certification requirements.
- 4.1 Species** Norway Spruce (*Picea abies*)
- 4.2 Grade** The grade shall not be below Grade C, per American Product Standard PS 1.
- 4.3 Thickness** The thickness of each veneer shall be nominal 3.0mm (0.110").

## CONSTRUCTION

- 5.0 Glue Bond Requirements** The glue shall meet or exceed American Product Standard PS 1-Exterior Type.
- 6.0 Grain Direction** All veneers shall be oriented with the grain parallel to the long dimension of the billet.
- 7.0 Veneer Joints** All individual veneer joints shall be scarfed and staggered, with a distance between joints of not less than 4" (10.16 cm).
- 8.0 Tolerances**

Thickness	all	± 5/64" (2.0 mm)
Width	< 8" (200 mm)	± 1/16" (1.5 mm)
	8" (200 mm) -24" (600 mm)	± 1/8" (3.0 mm)
	> 24" 600 mm	± 0.5 %
Length	all	± 5/16" (8.0 mm)

## MANUFACTURE

### 9.0 Finished Product

- 9.1 Widths** Widths shall be cut within tolerances given, and with square clean edges, for each order.
- 9.2 Lengths** Lengths shall be cut within tolerances given, and with square clear edges, for each order.
- 9.3 Surface** Surface may be sanded or unsanded as required by order.
- 9.4 Surface** Surface (face) veneer may be grade A (clear) if requested.
- 9.5 Surface** To enhance dimensional stability, seal coating can be provided upon request.

## QUALITY CONTROL

- 10.0 MASTER PLANK** is manufactured under the ISO 9001 quality certification system. Quality control shall be under the supervision of the Technical Research Centre of Finland, Helsinki, Finland.

## IDENTIFICATION

- 11.0 MASTER PLANK** stamp shown on page 6.



**MASTER PLANK**®

VTT Building and Transport  
Certification Agency

NER-555

2900 F<sub>b</sub> - 2.0 E

LAMINATED VENEER LUMBER

MEA 186-02-E

Accepted for use  
City of NY  
Dept. of Buildings

**finnforest**

Manufactured  
in Finland

Finnforest USA  
Engineered Wood Division

