

## 2900 F<sub>b</sub>- 2.0 E Design Values for 1½"

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
<p>The bending size effect factor is <math>(12/d)^{0.15}</math>. 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.</p>		

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	3425	2320	48	13	2.4
9 1/4	5375	2960	99	21	3.1
9 1/2	5647	3040	107	23	3.2
11 1/4	7721	3600	178	32	3.7
11 7/8	8533	3800	209	35	3.9
14	11571	4480	343	49	4.6
16	14813	5120	512	64	5.3
18	18420	5760	729	81	6.0
20	22384	6400	1000	100	6.6
24	31364	7680	1728	144	8.0
<p><b>M=F<sub>b</sub>*S/12    V=F<sub>v</sub>A/1.5    I=bd<sup>3</sup>/12    S=bd<sup>2</sup>/6</b></p>					

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, and is 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)
Length	> 24" 600 mm	± 0.5 %
	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 clean 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.

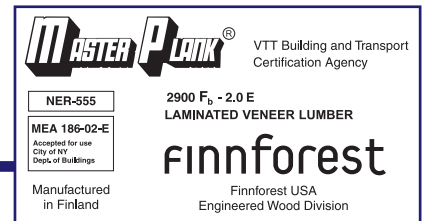
**9.5 Surface** To enhance dimensional stability, seal coating can be provided upon request.

## 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



# Bearing Information

