

**Rosboro  
1.8E IJC:  
Design  
Values**

Layup Combination	Flexural Stress $F_b$ (psi) <sup>1</sup>		Compression Perpendicular to Grain $F_c$ (psi)	Shear <sup>2</sup> $F_v$ (psi)	Modulus of Elasticity $E$ ( $10^6$ psi)
	Tension Zone	Compression Zone			
24F-V8	2,400	2,400	650	265	1.8

Notes for 1.8E IJC Design Values:

- $F_b$  shall be adjusted by the volume effect factor using the following formula:  $C_v = (5.125/b)^{1/10} \times (12/d)^{1/10} \times (21/L)^{1/10} \leq 1.0$   
Where:  $b$  = beam width (in.),  $d$  = beam depth (in.),  $L$  = beam length (ft.).
- For non-prismatic members, notched members, members subject to impact or cyclic loading, or shear design of bending members at connections (NDS-05 3.4.3.3), the design shear ( $F_v$ ) shall be multiplied by a factor of 0.72.

**Allowable  
Floor Loads  
EWS 24F-V8/DF  
 $F_b = 2,400$  psi  
 $F_v = 265$  psi  
 $E = 1.8 \times 10^6$  psi  
 $F_c = 650$  psi  
LDF = 1.0**

Width (in.)	Depth (in.)	Load Condition	Simple Span												
			8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	
3 1/2	9	Total Load (plf)	1,174	748	485	302	200	138	99	72	NA	NA	NA	NA	
		Live Load (plf)	1,107	567	328	207	138	97	71	53	NA	NA	NA	NA	
		Min. End/Int. Bearing (in)	2.1/5.2	1.7/4.2	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	NA	NA	NA	NA
	9 1/2	Total Load (plf)	1,308	834	571	356	236	163	117	86	NA	NA	NA	NA	
		Live Load (plf)	1,302	667	386	243	163	114	83	63	NA	NA	NA	NA	
		Min. End/Int. Bearing (in)	2.3/5.8	1.9/4.6	1.5/3.8	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	NA	NA	NA	NA
	11 1/8	Total Load (plf)	2,046	1,306	904	661	467	325	234	173	131	101	79	NA	
		Live Load (plf)	-	1,302	754	475	318	223	163	122	94	74	59	NA	
		Min. End/Int. Bearing (in)	3.6/9.0	2.9/7.2	2.4/6.0	2.1/5.2	1.7/4.2	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	NA
	14	Total Load (plf)	2,846	1,817	1,258	921	703	537	388	289	220	170	134	107	
		Live Load (plf)	-	-	1,235	778	521	366	267	200	154	121	97	79	
		Min. End/Int. Bearing (in)	5.0/12.6	4.0/10.1	3.4/8.4	2.9/7.2	2.5/6.3	2.2/5.4	1.8/4.4	1.5/3.6	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5
	16	Total Load (plf)	3,696	2,376	1,646	1,205	920	724	584	435	332	258	204	163	
		Live Load (plf)	-	-	-	1,161	778	546	398	299	230	181	145	118	
		Min. End/Int. Bearing (in)	6.5/16.3	5.3/13.1	4.4/10.9	3.8/9.4	3.3/8.2	2.9/7.3	2.6/6.6	2.2/5.4	1.8/4.6	1.6/3.9	1.5/3.5	1.5/3.5	
	18	Total Load (plf)	4,437	3,009	2,085	1,528	1,166	918	741	605	477	372	295	237	
		Live Load (plf)	-	-	-	-	1,107	778	567	426	328	258	207	168	
		Min. End/Int. Bearing (in)	7.8/19.6	6.6/16.6	5.5/13.8	4.7/11.9	4.2/10.4	3.7/9.2	3.3/8.3	3.0/7.5	2.6/6.5	2.2/5.5	1.9/4.8	1.7/4.2	
	Width (in.)	Depth (in.)	Load Condition	Multiple Span											
				8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'
	3 1/2	9	Total Load (plf)	1,174	748	517	378	265	184	132	97	73	NA	NA	NA
			Live Load (plf)	-	746	432	272	182	128	93	70	54	NA	NA	NA
			Min. End/Int. Bearing (in)	2.1/5.2	1.7/4.2	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	NA	NA
		9 1/2	Total Load (plf)	1,308	834	577	422	313	218	156	115	87	NA	NA	NA
Live Load (plf)			-	-	508	320	214	150	110	82	63	NA	NA	NA	
Min. End/Int. Bearing (in)			2.3/5.8	1.9/4.6	1.5/3.9	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	NA	NA	NA
11 1/8		Total Load (plf)	1,821	1,306	904	661	504	396	311	231	176	136	107	85	
		Live Load (plf)	-	-	-	624	418	294	214	161	124	97	78	63	
		Min. End/Int. Bearing (in)	3.2/8.0	2.9/7.2	2.4/6.0	2.1/5.2	1.8/4.5	1.6/4.0	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5
14		Total Load (plf)	2,246	1,691	1,258	921	703	553	445	366	293	228	180	144	
		Live Load (plf)	-	-	-	-	685	481	351	264	203	160	128	104	
		Min. End/Int. Bearing (in)	4.0/9.9	3.7/9.4	3.4/8.4	2.9/7.2	2.5/6.3	2.2/5.6	2.0/5.0	1.8/4.6	1.6/4.0	1.5/3.5	1.5/3.5	1.5/3.5	1.5/3.5
16		Total Load (plf)	2,685	1,999	1,591	1,205	920	724	584	480	401	340	273	219	
		Live Load (plf)	-	-	-	-	-	718	524	394	303	238	191	155	
		Min. End/Int. Bearing (in)	4.7/11.9	4.4/11.1	4.2/10.6	3.8/9.4	3.3/8.2	2.9/7.3	2.6/6.6	2.4/6.0	2.2/5.5	2.0/5.0	1.8/4.4	1.5/3.8	
18		Total Load (plf)	3,165	2,328	1,840	1,520	1,166	918	741	609	510	432	370	316	
		Live Load (plf)	-	-	-	-	-	-	-	560	432	339	272	221	
		Min. End/Int. Bearing (in)	5.6/14.0	5.1/12.9	4.9/12.2	4.7/11.8	4.2/10.4	3.7/9.2	3.3/8.3	3.0/7.6	2.8/6.9	2.6/6.4	2.4/5.9	2.2/5.5	

Design property notes for both Dry-Use and Wet-Use service conditions:

- For preliminary design use only. Final design should include a complete analysis, including bearing stresses and lateral stability.
- Table is based on uniform loads (beam weight considered).
- Tabulated live load is based on the deflection criterion of span/360.
- Tabulated total load is based on the deflection criterion of span/240.
- Tabulated total load is in addition to the beam weight (assumed 35 pcf).
- Selected beam size shall satisfy both live load and total load.
- For live deflection limits of L/240 and L/480, multiply the live load values by 1.5 and 0.75 respectively. The resulting live load shall not exceed the total load shown.