



Glulam in Residential Building

CONSTRUCTION GUIDE



Glulam for Residential Building

This guide from APA – The Engineered Wood Association details the uses of APA-trademarked structural glued laminated timber (glulam) in residential construction. It explains the capabilities and characteristics and includes a specification guide providing tips on how to order glulam.

Glulam is an engineered product composed of wood laminations (commonly referred to as lams) that are bonded together with adhesives. Glulam has greater strength and stiffness than dimension lumber of comparable size, and the glulam manufacturing process allows for a wide variety of sizes, shapes and appearances to be produced that can meet virtually any residential building need, concealed or exposed.

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GLULAM SELECTION AND SPECIFICATION

Glulam beams are commonly available in stock sizes that are manufactured for a variety of residential applications. Stock beams, manufactured in common dimensions, are cut to length when the beam is ordered from a distributor or dealer. Typical stock beam widths used in residential construction include: 3-1/8, 3-1/2, 5-1/8, and 5-1/2 inches.

Appearance Classifications

Glulam is available in a range of appearances, all having the same structural characteristics for a given strength grade. Glulam appearance classifications are:

Framing. A classification that denotes the member is intended only for use in concealed applications. Beams with this appearance classification are provided in widths designed to fit flush with 2x4 and 2x6 wall framing. **Framing-L** is the same as Framing but denotes that LVL has been used for the outer tension laminations.

Industrial. Used for concealed applications or where appearance is not of primary importance. **Industrial-L** is the same as Industrial but denotes that LVL has been used for outer tension laminations.

Architectural. The appearance of choice in applications where members are exposed to view, because they have a smooth, attractive finish. Stock beams are often supplied with this appearance so they may be exposed to view in the finished structure.

Premium. Available only as a custom order where finished appearance is of primary importance.

All appearance classifications permit natural growth characteristics with varying degrees of open voids permitted. Voids are filled as required by the appearance grade specified using inserts and wood fillers. The appearance classification is not related to lumber layup requirements and thus does not affect design values for the beam. For additional information, refer to *APA Technical Note: Glulam Appearance Classifications for Construction Applications*, Form Y110.

Glulam Specification Guide

The following is a guide for preparing specifications for structural glued laminated timber used for bending members such as purlins, beams or girders or for axially loaded members such as columns or truss chords.

A. General

1. Structural glued laminated timber shall be furnished as shown on the plans and in accordance with the following specifications. (Where other uses or requirements are applicable, modify specifications accordingly.)
2. For custom designed members, shop drawings and details shall be furnished by the (manufacturer) (seller) and approval obtained from the (architect) (engineer) (general contractor) (buyer) before fabrication is begun.
3. The (manufacturer) (seller) (general contractor) shall furnish connection steel and hardware for joining structural glued laminated timber members to each other and to their supports, exclusive of anchorage embedded in masonry or concrete, setting plates and items field-welded to structural steel. Steel connections shall be finished with a minimum of one coat of rust-inhibiting paint.

B. Manufacture

1. **Materials, Manufacture and Quality Assurance**—Structural glued laminated timber of softwood species shall be in conformance with ANSI A190.1, *American National Standard for Structural Glued Laminated Timber*, or other code-approved design, manufacturing and/or quality assurance procedures.
2. **End-Use Application**—Structural glued laminated timber members shall be manufactured for the following structural uses as applicable: (Simple span bending member—B) (continuous or cantilever span bending member—CB) (compression member—C) (tension member—T).
3. **Design Values**—Structural glued laminated timber shall provide design values for normal load duration and dry-use condition.^{1,2} The design should specify a layup combination from ANSI 117 or APA Data File: *Glulam Design Specifications*, Form Y117.

4. **Appearance Grade**—Glulam shall be (framing) (framing-L) (industrial) (industrial-L) (architectural) (premium) grade³ in accordance with ANSI A190.1.
5. **Laminating Adhesives**—Adhesives used in the manufacture of structural glued laminated timber shall meet requirements for (wet-use) (dry-use) service conditions.¹
6. **Camber (when applicable)**—Structural glued laminated timber (shall) (shall not) be manufactured with a built-in camber.
7. **Preservative Treatment (when applicable)**—Glulam shall be pressure treated after manufacture in accordance with American Wood Protection Association (AWPA) Standard U1 with (creosote or creosote/coal tar solution) (pentachlorophenol in oil) (pentachlorophenol in light solvent) (copper naphthenate preservatives as required for (soil contact) (above ground) exposure.⁴
8. **Fire Resistance (when applicable)**—Glulam shall be sized and manufactured for one-hour fire resistance.⁵ The use of pressure impregnated fire retardant treatments is not recommended.
9. **Protective Sealers and Finishes**—Unless otherwise specified, sealer shall be applied to the ends of all members. Surfaces of members shall be (not sealed) (sealed with penetrating sealer) (sealed with primer/sealer coating).⁶
10. **Trademarks**—Members shall be marked with the APA trademark indicating conformance with the manufacturing, quality assurance and marking provisions of ANSI A190.1.
11. **Certificates (when applicable)**—A Certificate of Conformance may be provided by the (manufacturer) (seller) to indicate conformance with ANSI A190.1 if requested.
12. **Protection for Shipment**—Members shall be (not wrapped) (load wrapped) (bundle wrapped) (individually wrapped) with a water-resistant covering for shipment.

Notes to Specifiers:

1. Dry service condition—average equilibrium moisture content of the member will be below 16 percent in service; wet service condition—average equilibrium moisture content of the member will be at or above 16 percent in service. When structural glued laminated timber members are to be preservative treated, wet-use adhesives must be specified.
2. An alternative to specifying a layup combination or stress combination is to specify the required allowable design stresses for the specific design application.
3. Appearance classifications are described in APA Technical Note: *Glulam Appearance Classifications for Construction Applications*, Form Y110.
4. See APA Technical Note: *Preservative Treatment of Glued Laminated Timber*, Form S580.
5. When structural glued laminated timber with one-hour fire resistance is specified, minimum size limitations and additional lamination requirements are applicable. Supporting steel connectors and fasteners also must be protected to achieve a one-hour fire rating. Cover with fire-rated (Type X) gypsum wallboard or 1-1/2" wood, to provide the needed protection.
6. Specify a penetrating sealer when the finish will be natural or a semitransparent stain. Primer/sealer coatings have a higher solids content, provide greater moisture protection, and are suitable for use with opaque or solid-color finishes.

DESIGN CONSIDERATIONS

Balanced and Unbalanced Beams

Glulam may be manufactured as unbalanced or balanced members.

The most critical zone of a glulam bending member with respect to controlling strength is the outermost tension zone. In unbalanced beams, the quality of lumber used on the tension side of the beam is higher than the lumber used on the corresponding compression side, allowing a more efficient use of the timber resource. Therefore, unbalanced beams have different bending stresses assigned to the compression and tension sides and must be installed accordingly. To assure proper installation of unbalanced beams, the top of the beam is clearly stamped with the word “TOP.” Unbalanced beams are primarily intended for simple-span applications even though they can also be used in multiple-span applications when properly designed.

Balanced members are symmetrical in lumber quality about the mid-depth. Balanced beams are used in applications such as long cantilevers or continuous spans, where either the top or bottom of the member may be highly stressed in tension due to service loads. They can also be used in single-span applications, although an unbalanced beam is more cost-efficient for this use.

Allowable Design Properties

Allowable design properties are a key factor in specifying glulam. Bending members are typically specified on the basis of the maximum allowable bending stress of the member. For example, a 24F designation indicates a member with an allowable bending stress of 2400 psi. Similarly, a 30F designation refers to a member with an allowable bending stress of 3000 psi. These different stress levels are achieved by varying the species and percentages and grade of higher quality lumber in the beam layup.

To identify whether the lumber used in the beam is visually or mechanically graded, the stress combination also includes a second set of designations. For example, for an unbalanced 24F layup using visually graded lumber, the layup designation may be identified as a 24F-V4. The “V” indicates that the layup uses visually graded lumber. (“E” is used for E-rated or mechanically graded lumber.) The number “4” further indicates a specific combination of lumber used, to which a full set of design stresses, such as horizontal shear, MOE, etc., are assigned. The glulam industry uses a stress class system to specify glulam similar to that used for MSR lumber or Structural Composite Lumber (SCL). This requires only specifying an F_b -E value. Typical stress classifications are in Table 1. See also *APA Data Files: Glulam Design Specification* and *Glulam Layup Combinations*, Forms Y117 and Y117SUP, respectively, and ANSI 117-2015, *Standard Specification for Structural Glued Laminated Timber of Softwood Species*.

STANDARD BEAM LAYUP

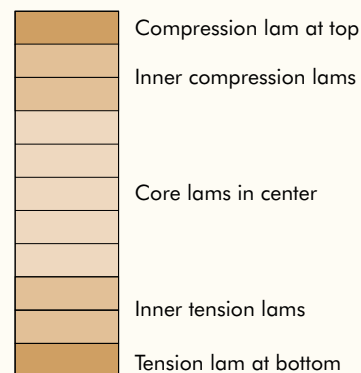


TABLE 1

REFERENCE DESIGN VALUES FOR STRUCTURAL GLUED LAMINATED SOFTWOOD TIMBER
(Members stressed primarily in bending)

(Tabulated design values are for normal load duration and dry service conditions.)

Stress Class	Bending About X-X Axis Loaded Perpendicular to Wide Faces of Laminations						
	Extreme Fiber in Bending		Compression Perpendicular to Grain	Shear Parallel to Grain	Modulus of Elasticity		
	Bottom of Beam Stressed in Tension (Positive Bending)	Top of Beam Stressed in Tension (Negative Bending)			For Deflection Calculations		For Stability Calculations
	F_{bx}^+ (psi)	$F_{bx}^-^a$ (psi)	F_{cLx} (psi)	F_{vx}^d (psi)	$E_{x\ true}$ (10^6 psi)	$E_{x\ app}$ (10^6 psi)	$E_{x\ min}$ (10^6 psi)
16F-1.3E	1600	925	315	195	1.4	1.3	0.69
20F-1.5E	2000	1100	425	195 ^f	1.6	1.5	0.79
24F-1.7E	2400	1450	500	210 ^f	1.8	1.7	0.90
24F-1.8E	2400	1850 ^b	650	265 ^c	1.9	1.8	0.95
26F-1.9E ^g	2600	1950	650	265 ^c	2.0	1.9	1.00
28F-2.1E SP ^g	2800	2300	805	300	2.2 ⁱ	2.1 ⁱ	1.09
30F-2.1E SP ^{g,h}	3000	2400	805	300	2.2 ⁱ	2.1 ⁱ	1.09

- a. For balanced layups, F_{bx}^- shall be equal to F_{bx}^+ for the stress class. Designer shall specify when balanced layout is required.
- b. Negative bending stress, F_{bx}^- , is permitted to be increased to 1950 psi for southern pine for specific combinations. Designer shall specify when these increased stresses are required.
- c. For structural glued laminated timber of southern pine, the basic shear design values, F_{vx} and F_{vy} , are permitted to be increased to 300 psi and 260 psi, respectively.
- d. The design values for shear, F_{vx} and F_{vy} , shall be decreased by multiplying by a factor of 0.72 for non-prismatic members, notched members, and for all members subject to impact or cyclic loading. The reduced design value shall be used for design of members at connections that transfer shear by mechanical fasteners. The reduced design value shall also be used for determination of design values for radial tension and torsion.
- e. Design values are for timbers with laminations made from a single piece of lumber across the width or multiple pieces that have been edge-bonded. For timbers manufactured from multiple piece laminations (across width) that are not edge-bonded, value shall be multiplied by 0.4 for members with 5, 7, or 9 laminations or by 0.5 for all other members. This reduction shall be cumulative with the adjustment in footnote d.

Continued on next page

TABLE 1 (Continued)

REFERENCE DESIGN VALUES FOR STRUCTURAL GLUED LAMINATED SOFTWOOD TIMBER
(Members stressed primarily in bending)

(Tabulated design values are for normal load duration and dry service conditions.)

Stress Class	Bending About Y-Y Axis Loaded Parallel to Wide Faces of Laminations						Axially Loaded		Fasteners
	Modulus of Elasticity			For Deflection Calculations		For Stability Calculations	Tension Parallel to Grain	Compression Parallel to Grain	Specific Gravity for Fastener Design
	Extreme Fiber in Bending F_{by} (psi)	Compression Perpendicular to Grain $F_{c\perp y}$ (psi)	Shear Parallel to Grain F_{vy} (psi)	$E_{y\text{ true}}$ (10^6 psi)	$E_{y\text{ app}}$ (10^6 psi)	$E_{y\text{ min}}$ (10^6 psi)	F_t (psi)	F_c (psi)	G
16F-1.3E	800	315	170	1.2	1.1	0.58	675	925	0.41
20F-1.5E	800	315	170	1.3	1.2	0.63	725	925	0.41
24F-1.7E	1050	315	185	1.4	1.3	0.69	775	1000	0.42
24F-1.8E	1450	560	230 ^c	1.7	1.6	0.85	1100	1600	0.50 ^j
26F-1.9E ^a	1600	560	230 ^c	1.7	1.6	0.85	1150	1600	0.50 ^j
28F-2.1E SP ^a	1600	650	260	1.8	1.7	0.90	1250	1750	0.55
30F-2.1E SP ^{a,h}	1750	650	260	1.8	1.7	0.90	1250	1750	0.55

f. Certain southern pine combinations may contain lumber with wane. If lumber with wane is used, the design value for shear parallel to grain, F_{vx} , shall be multiplied by 0.67 if wane is allowed on both sides. If wane is limited to one side, F_{vx} shall be multiplied by 0.83. This reduction shall be cumulative with the adjustment in footnote d.

g. 26F, 28F, and 30F beams are not produced by all manufacturers, therefore, availability may be limited. Contact supplier or manufacturer for details.

h. 30F combinations are restricted to a maximum 6 in. nominal width unless the manufacturer has qualified for wider widths based on full-scale tests subject to approval by an accredited inspection agency.

i. For 28F and 30F members with more than 15 laminations, $E_{x\text{ true}} = 2.1 \times 10^6$ psi and $E_{x\text{ app}} = 2.0 \times 10^6$ psi.

j. For structural glued laminated timber of southern pine, specific gravity for fastener design is permitted to be increased to 0.55.

Design values in this table represent design values for groups of similar glued laminated timber combinations. Higher design values for some properties may be obtained by specifying a particular combination in APA Data File: Glulam Design Specification, Form Y117, and ANSI 117-2015. Design values are for members with 4 or more laminations. Some stress classes are not available in all species. Contact manufacturer for availability.

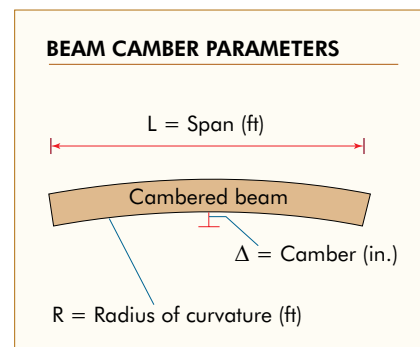
Section Properties and Capacities

When selecting a glulam member, the builder, designer or specifier must use a member with the required section properties and the applicable design values to satisfy the load carrying requirements. Different load capacities are possible for different stress level combinations of glulam. Tables giving the load carrying capacities for glulam are included in the APA Data File: *Glued Laminated Beam Design Tables*, Form S475.

Camber

Camber is curvature built into a fabricated member (see figure at right) that is opposite in direction and magnitude to the calculated deflection that will occur under gravity loads.

The glulam industry recommends that roof beams be cambered for 1-1/2 times the calculated dead load deflection. This will generally be sufficient to ensure that the beam will not visibly sag over a period of many years of loading, as may occur with non-cambered wood products. To achieve a level profile, it is recommended that floor beams be only cambered for 1.0 times the calculated dead load deflection.



Camber for glulam beams is specified as either “inches of camber” or as a radius of curvature that is to be used in the manufacturing process.

Most residential applications require very little or no camber, which, in turn, makes glulam the ideal choice. Stock beams are typically supplied with a relatively flat camber radius of 5,000 feet, as shown in Table 2, or zero camber. Thus they have just the right camber for residential construction. If, however, more camber is required, such as for a long-span roof beam, custom beams are available through manufacturers to meet the most exacting specifications.

TABLE 2

Camber for 5,000-Foot Radius

Span in feet:	10	12	14	16	18	20	22	24	26	28
Camber in inch:	.03	.04	.06	.08	.10	.12	.15	.17	.20	.24

For additional information on cambering glulam beams, refer to *APA Technical Note: Glulam Beam Camber*, Form S550, which provides a camber table for various beam spans and radii of curvature.

Trademarks and Acceptances

Glulam beams manufactured by APA members are certified with the APA trademark. The mark (as shown at right) signifies that the manufacturer is committed to a rigorous program of quality verification and testing and that products are manufactured in conformance with ANSI A190.1-2017, *American National Standard for Structural Glued Laminated Timber*. The APA trademark is recognized by all major model building codes.

APA
24F-V4
ARCH UNBALANCED DF/L ANSI 117-2015
PROOF LOADED END JOINTS
PLANT 0000 ANSI A190.1-2017

1. Combination symbol.
2. Unbalanced layup.
3. The species or species group of lumber in the timber.
4. Designation of appearance grade.
5. Applicable design and manufacturing specification.
6. Indicates the member has the required laminations proof loaded.
7. Mill number.
8. Identification of ANSI A190.1, the American National Standard for Structural Glued Laminated Timber.

Moisture

Equilibrium Moisture Content

The average moisture content of glulam is significantly lower (approximately 12 percent) compared to that of green lumber (20–30 percent) and dry lumber (19 percent or less). Once installed, the moisture content of glulam beams will equilibrate to approximately 7 to 10 percent in most geographic areas. The time it takes for glulam beams to reach moisture equilibrium will depend on local environmental conditions and whether they pick up additional moisture due to rain during the construction cycle. Once they reach equilibrium, they will undergo little additional shrinkage or swelling during the life of the structure and will be dimensionally stable. Refer to *Technical Note: Dimensional Changes in Structural Glued Laminated Timber*, Form Y260, for more information.

Use of Sealers

Moisture is difficult to regulate and control during shipping, storage and erection of engineered wood products. Protective sealers, applied at the mill *if specified* or at the jobsite, protect glulam from moisture intrusion. By minimizing moisture movement into and out of the glulam, surface sealants help control checking and grain raising on the surfaces of the beam. Sealers applied to the ends of beams prevent excessive end grain checking.

Checking

Compared to sawn timbers of similar sizes, glulam typically has fewer and less severe checks because of its low moisture content at the time of manufacture. While checks usually do not affect the structural performance of a member, they can impact appearance when glulam is used in exposed applications. Cosmetic repairs, such as applying elastomeric fillers, may help mask checks and improve beams' appearance but are typically not required. Since there are no limitations on the number of checks which may appear on the surface of a glulam, the use of cosmetic repairs is a contractor/owner decision. Further information can be found in *Technical Note: Evaluation of Check Size in Glued Laminated Timber Beams*, Form R475.

Moisture Effect on Fastener Design

Since glulam is manufactured from kiln-dried lumber, it provides better fastener-holding capability and minimizes nail popping and floor squeaks. Proper connection detailing, as related to potential shrinkage and swelling of any wood member, is essential to ensure good structural performance. An improperly designed or installed connection detail can lead to failure. Although dimensional changes due to moisture cycling in glulam will be minimal, as compared to sawn lumber, it is always important to allow for any such changes by properly positioning the mechanical fasteners. Further details can be found in *Technical Note: Glulam Connection Details*, Form T300.

Pressure Treatment

In residential construction, glulam beams can be used for outdoor deck supports, unprotected cantilevered roof extensions, exterior stair framing, foot bridges and other exposed or outdoor applications. When glulam members are directly exposed to the elements, they should be protected with a pressure impregnated preservative treatment to avoid decay and insect attack. These treatments do not affect the strength of the glulam. As an alternative to using preservative treatments, the glulam can be specified to be manufactured using the heartwood of naturally durable species such as Alaska Yellow Cedar or Western Red Cedar.

Treatments approved for use with glulam under the provisions of the American Wood Protection Association (AWPA) standards are creosote, pentachlorophenol in a wide variety of carriers and water-borne salts, such as CCA. Water-borne salts are typically specified for beams that will come in direct contact with humans. When it is important to minimize migration of moisture and the resulting checks, one of the oil-borne treatments, such as pentachlorophenol, should be considered.

Regardless of the treatment specified, it provides a protective shell of chemicals rather than penetrating throughout the beam. Therefore, all fabrication, drilling and cutting should be completed before treatment to ensure that all surfaces are treated and that untreated “white wood” is not exposed to the elements. If a treated glulam is cut in the field, brush the cut area with a heavy coat of approved wood preservative.

Check with your supplier to determine the availability of preservative-treated glulam or glulam manufactured using naturally durable species before specifying a particular treatment. Further information can be found in *Technical Note: Preservative Treatment of Glulam Beams*, Form S580.

Fire Resistance

APA-trademarked glulam performs very well in the intense heat of a fire. Large timber members, such as glulam, retain their strength and stability when exposed to fire by building up a layer of char that acts as an insulator to the wood, delaying or preventing structural failure. If sufficient structural capacity remains, it is often possible to salvage glulam after a fire by removing the charred material and refinishing the surface. Steel beams, in contrast, are likely to buckle and collapse under the same circumstances and must be completely replaced. If required, glulam can be specified in one-hour fire-rated layouts. This does require a special layout and must be specified before manufacture. Refer to *Technical Note: Calculating Fire Resistance of Glulam Beams and Columns*, Form Y245, for more information.

HEADERS

Glulam headers can span long distances and are available in many sizes to accommodate spanning both the openings and the adjacent wall framing for windows, doors and garage doors. Stock glulam beams are cut to length when purchased, eliminating jobsite waste and expense.

Garage Door Headers

Glulam can span distances long enough to allow garage door openings for up to three cars. Full-length glulam headers that span the opening and extend over the adjacent end walls also provide an excellent surface for heavy nailing of structural wood panels. This increases the rigidity of the wall and adds shear and racking resistance to the structure.

Sliding Door & Window Opening Headers

In window and sliding glass door headers, glulam beams provide high dimensional stability and high strength values. A single long length piece of glulam, supplied to the jobsite with the other glulam framing members, can easily be cut to length to provide headers for all major window and door openings.

Interior Wall Opening Headers

In homes requiring large interior openings between rooms, glulam headers are an ideal choice to span these openings. Their dimensional stability minimizes problems with warping or twisting, and they can fit the size and design load requirements of a wide variety of openings. In most cases, glulam can be specified to fit the dimensions of other wood wall framing components. Attachments to the other wood components or framing are simple wood-to-wood connections that do not require the use of special tools that are normally required when steel beams are used in the same application.

See *Data File: Glued Laminated Beam Design Tables*, Form S475, for a comprehensive tabulation of beam sizes which can be used for this application, and *Glulam Beams Offer Simple Solutions for Garage Door Headers*, Form Q725.

FLOOR BEAMS

Glulam floor beams are easier to work with than comparable steel beams. It is easy to connect other wood floor framing components to glulam because the wood-to-wood connections can be made with standard carpentry tools and fasteners. Nailers are not needed, as with steel beams, and nail-on joist hangers can easily be accommodated. Unlike large solid sawn or built-up timber beams, glulam will exhibit minimal shrinkage and warping, which ensures a level floor surface. In addition, due to the excellent fastener-holding capability of glulam, floors have minimal nail popping and fewer squeaks.

Concealed or Exposed

Glulam floor beams can be installed within the floor joist cavity if a concealed application is desired. Many stocking distributors inventory glulam in I-joist compatible depths (IJC) for use with I-joist framing systems but most standard depth stock beams can easily be used in a concealed floor application with minimal furring. They can also be partially concealed in the floor joist cavity or left completely exposed below the floor framing, adding increased aesthetic value to the room below. Refer to *Glulam and the New Home*, Form Q720, for more information.

ROOF BEAMS

Ridge Beams

In ridge beams, the long span capability of glulam allows for more open and airy designs, fewer walls and the high ceilings often desired in modern residential construction. Glulam's high load and long span capacities minimize the need for interior wall and column supports. Because glulam can be supplied with an architectural appearance, it can be left exposed to add to the aesthetic value of the house.

Rafter Beams

Glulam can also be specified for exposed rafter beams that span from the ridge beam to the perimeter wall framing of the room. These beams can extend past the wall to create a covered roof overhang, if required. These beam extensions should not be directly exposed to the elements and should be covered by an extension of the roof. End caps or fascia members should be used to cover the beam ends. As with ridge beams, interior exposed glulam rafters add the warm, natural appeal of wood to the aesthetic value of a house.

ALLOWABLE LOADS FOR SIMPLE-SPAN STOCK GLULAM BEAMS

When selecting a glulam member, the builder, designer or specifier must use a member with the required section properties and the applicable design values to satisfy the load carrying requirements. Different load capacities are possible for different stress level combinations of glulam. Tables 3 through 8 provide the allowable loads for nominal 4x and 6x stock Douglas-fir glulam simple-span beams at three load durations: floor beams, roof beams under snow loads and roof beams under construction loads. Tables 9 through 14 provide the allowable loads for southern pine glulam simple-span beams under the same three load durations. I-joist compatible sizes are denoted within the tables.

TABLE 3

NOMINAL 4X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (JIC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_v = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{CL} = 650 \text{ psi}$; Load Duration Factor $C_D = 1.0$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
3 1/8 x 7 1/2	Total Load (plf)	727	434	249	154	102	70	-	-	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	572	293	170	107	72	50	-	-	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-	-
3 1/8 x 9	Total Load (plf)	1,048	668	433	270	179	123	88	-	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	989	506	293	184	124	87	63	-	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.1	1.7	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-
μC 3 1/2 x 9 1/4	Total Load (plf)	1,240	791	526	329	218	150	108	79	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	1,202	616	356	224	150	106	77	58	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-
μC 3 1/2 x 9 1/2	Total Load (plf)	1,308	834	571	356	236	163	117	86	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	1,302	667	386	243	163	114	83	63	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.3	1.9	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-
3 1/8 x 10 1/2	Total Load (plf)	1,428	911	630	431	286	199	143	105	79	-	-	-	-	-	-	-	-	-
	Live Load (plf)	804	465	293	196	138	100	75	58	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.8	2.3	1.9	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-
μC 3 1/2 x 11 1/4	Total Load (plf)	1,836	1,172	811	593	396	275	198	146	111	85	66	-	-	-	-	-	-	-
	Live Load (plf)	1,107	641	404	270	190	138	104	80	63	50	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.2	2.6	2.2	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
μC 3 1/2 x 11 7/8	Total Load (plf)	2,046	1,306	904	661	467	325	234	173	131	101	79	-	-	-	-	-	-	-
	Live Load (plf)	1,302	754	475	318	223	163	122	94	74	59	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.6	2.9	2.4	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
3 1/8 x 12	Total Load (plf)	1,866	1,191	824	603	430	300	216	160	121	93	73	-	-	-	-	-	-	-
	Live Load (plf)	694	437	293	206	150	113	87	68	55	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.7	3.0	2.5	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
3 1/8 x 13 1/2	Total Load (plf)	2,363	1,508	1,044	765	583	429	310	230	175	136	106	85	68	-	-	-	-	-
	Live Load (plf)	989	623	417	293	214	160	124	97	78	63	52	-	-	-	-	-	-	-
	Min. End Bearing (in.)	4.7	3.7	3.1	2.7	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-

TABLE 3 (Continued)
NOMINAL 4X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (JIC) SIZES
 $F_{bx} = 2,400 \text{ psi}; F_v = 265 \text{ psi}; E_x = 1.8 \times 10^6 \text{ psi}; F_{c-L} = 650 \text{ psi}; \text{Load Duration Factor } C_D = 1.0$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
JIC 3 1/2 x 14	Total Load (plf)	2,846	1,817	1,258	921	703	537	388	289	220	170	134	107	86	70	-	-	-	-
	Live Load (plf)			1,235	778	521	366	267	200	154	121	97	79	65	54	-	-	-	-
	Min. End Bearing (in.)	5.0	4.0	3.4	2.9	2.5	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
	Total Load (plf)	2,918	1,864	1,291	945	721	567	428	319	243	189	149	119	96	78	64	-	-	-
3 1/8 x 15	Live Load (plf)				854	572	402	293	220	170	133	107	87	72	60	50	-	-	-
	Min. End Bearing (in.)	5.8	4.6	3.8	3.3	2.9	2.6	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
	Total Load (plf)	3,696	2,376	1,646	1,205	920	724	584	435	332	258	204	163	132	108	89	73	-	-
	Live Load (plf)				1,161	778	546	398	299	230	181	145	118	97	81	68	58	-	-
JIC 3 1/2 x 16	Min. End Bearing (in.)	6.5	5.3	4.4	3.8	3.3	2.9	2.6	2.2	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5	-	-
	Total Load (plf)	3,458	2,256	1,563	1,145	874	688	555	427	326	254	201	161	130	107	88	73	-	-
	Live Load (plf)				1,137	762	535	390	293	226	177	142	116	95	79	67	57	-	-
	Min. End Bearing (in.)	6.8	5.6	4.7	4.0	3.5	3.1	2.8	2.4	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	-	-
3 1/8 x 18	Total Load (plf)	3,961	2,686	1,861	1,364	1,041	820	661	544	426	332	263	211	172	141	117	97	81	68
	Live Load (plf)				989	694	506	380	293	230	184	150	124	103	87	74	63	55	55
	Min. End Bearing (in.)	7.8	6.6	5.5	4.7	4.2	3.7	3.3	3.0	2.6	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5	1.5
	Total Load (plf)	4,437	3,009	2,085	1,528	1,166	918	741	605	477	372	295	237	192	158	131	109	91	77
JIC 3 1/2 x 18	Live Load (plf)				1,107	778	567	426	328	258	207	168	138	115	97	83	71	61	61
	Min. End Bearing (in.)	7.8	6.6	5.5	4.7	4.2	3.7	3.3	3.0	2.6	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5	1.5
	Total Load (plf)	4,518	3,154	2,186	1,602	1,223	963	777	637	529	425	337	271	221	182	151	126	106	89
	Live Load (plf)						883	644	484	372	293	235	191	157	131	110	94	80	70
3 1/8 x 19 1/2	Min. End Bearing (in.)	8.9	7.8	6.5	5.6	4.9	4.3	3.9	3.5	3.2	2.8	2.4	2.1	1.9	1.6	1.5	1.5	1.5	1.5
	Total Load (plf)	5,283	3,693	2,576	1,888	1,441	1,135	909	741	614	514	408	329	268	220	183	153	129	109
	Live Load (plf)						1,067	778	584	450	354	283	230	190	158	133	113	97	84
	Min. End Bearing (in.)	9.3	8.2	6.8	5.9	5.1	4.6	4.1	3.7	3.3	3.0	2.6	2.3	2.0	1.8	1.6	1.5	1.5	1.5
3 1/8 x 21	Total Load (plf)	5,137	3,551	2,536	1,859	1,420	1,118	901	735	610	513	424	341	278	229	191	160	135	114
	Live Load (plf)						1,103	804	604	465	366	293	238	196	164	138	117	100	87
	Min. End Bearing (in.)	10.1	8.8	7.5	6.5	5.7	5.0	4.5	4.1	3.7	3.4	3.0	2.6	2.3	2.1	1.8	1.6	1.5	1.5

TABLE 3 (Continued)

NOMINAL 4X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}; F_{vx} = 265 \text{ psi}; E_x = 1.8 \times 10^6 \text{ psi}; F_{cL} = 650 \text{ psi}; \text{Load Duration Factor } C_D = 1.0$

Width x Depth (in.)	Load Type	Span (ft)																		
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	
μC 3 1/2 x 22	Total Load (plf)	6,260	4,277	3,118	2,286	1,746	1,366	1,091	890	738	621	529	441	360	297	248	208	175	149	
	Live Load (plf)							1,035	778	599	471	377	307	253	211	178	151	129	112	
	Min. End Bearing (in.)	11.0	9.4	8.3	7.1	6.2	5.5	4.9	4.4	4.0	3.7	3.4	3.0	2.7	2.4	2.1	1.9	1.7	1.5	
	Total Load (plf)	5,828	3,958	2,913	2,135	1,631	1,285	1,029	839	696	586	499	422	345	285	237	199	168	143	
3 1/8 x 22 1/2	Live Load (plf)							989	743	572	450	360	293	241	201	170	144	124	107	
	Min. End Bearing (in.)	11.5	9.8	8.7	7.4	6.5	5.8	5.1	4.6	4.2	3.9	3.6	3.2	2.9	2.5	2.3	2.0	1.8	1.7	
	Total Load (plf)	6,607	4,398	3,294	2,431	1,857	1,457	1,164	950	788	663	565	486	421	348	290	244	207	176	
3 1/8 x 24	Live Load (plf)								902	694	546	437	356	293	244	206	175	150	130	
	Min. End Bearing (in.)	13.0	10.9	9.8	8.4	7.4	6.5	5.8	5.2	4.8	4.4	4.0	3.7	3.5	3.1	2.7	2.5	2.2	2.0	
	Total Load (plf)	7,400	4,926	3,690	2,722	2,071	1,613	1,289	1,051	872	734	625	538	467	390	325	274	232	197	
μC 3 1/2 x 24	Live Load (plf)									1,010	778	612	490	398	328	274	230	196	168	145
	Min. End Bearing (in.)	13.0	10.9	9.8	8.4	7.4	6.5	5.8	5.2	4.7	4.3	4.0	3.7	3.4	3.1	2.7	2.5	2.2	2.0	

Assumptions:

1. Span is the on-center distance between supports and is valid for simple-span applications.
2. These tables assume full lateral support of the compression side.
3. The values represent the load carrying capacity of the beam in pounds per lineal foot (plf) of the beam length.
4. The values are based on uniform loads and a deflection limit of L/360 under design live load and L/240 under design total load in dry-use conditions.
5. The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 35 pcf).
6. The designers must check both the total load and live load.
7. Where the live load is blank, the total load governs the design.
8. Do not use a product where designated "N" without further analysis by a design professional.

To Use:

1. Select the on-center span required.
2. Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
3. Select a product that meets or exceeds both the design total and live loads.

TABLE 4

NOMINAL 4X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER SNOW LOADS—LEGEND: μC = I-JOIST COMPATIBLE (μC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_v = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; *Load Duration Factor $C_D = 1.15$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
3 1/8 x 7 1/2	Total Load (plf)	837	533	333	208	137	95	68	-	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	439	254	160	107	75	55	-	-	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.7	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-
3 1/8 x 9	Total Load (plf)	1,206	769	532	362	240	167	120	88	66	-	-	-	-	-	-	-	-	-
	Live Load (plf)	759	439	277	185	130	95	71	55	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.4	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-
μC 3 1/2 x 9 1/4	Total Load (plf)	1,427	911	630	441	293	203	146	108	81	62	-	-	-	-	-	-	-	-
	Live Load (plf)	534	337	225	158	115	87	67	53	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.5	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
μC 3 1/2 x 9 1/2	Total Load (plf)	1,505	961	665	478	318	221	159	117	88	68	-	-	-	-	-	-	-	-
	Live Load (plf)	579	365	244	172	125	94	72	57	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.7	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
3 1/8 x 10 1/2	Total Load (plf)	1,643	1,049	726	531	385	268	193	143	108	84	65	-	-	-	-	-	-	-
	Live Load (plf)	698	439	294	207	151	113	87	69	55	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.3	2.6	2.2	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
μC 3 1/2 x 11 1/4	Total Load (plf)	2,113	1,349	934	684	521	370	267	198	151	116	91	72	58	-	-	-	-	-
	Live Load (plf)	605	406	285	208	156	120	95	76	62	51	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.7	3.0	2.5	2.1	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
μC 3 1/2 x 11 7/8	Total Load (plf)	2,355	1,503	1,041	762	581	437	316	235	178	138	109	86	69	-	-	-	-	-
	Live Load (plf)	712	477	335	244	183	141	111	89	72	60	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	4.2	3.3	2.8	2.4	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
3 1/8 x 12	Total Load (plf)	2,147	1,371	949	695	530	402	291	216	164	127	100	80	64	-	-	-	-	-
	Live Load (plf)	656	439	309	225	169	130	102	82	67	55	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	4.2	3.4	2.8	2.4	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
3 1/8 x 13 1/2	Total Load (plf)	2,719	1,736	1,203	881	672	529	417	311	237	184	145	116	94	77	63	-	-	-
	Live Load (plf)	626	439	320	241	185	146	117	95	78	65	55	-	-	-	-	-	-	-
	Min. End Bearing (in.)	5.4	4.3	3.6	3.1	2.7	2.4	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-

TABLE 4 (Continued)

NOMINAL 4X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER SNOW LOADS—LEGEND: μ_C = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; *Load Duration Factor $C_D = 1.15$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
μC 3 1/2 x 14	Total Load (plf)	3,275	2,092	1,449	1,061	810	637	514	389	297	231	183	146	118	97	80	66	55	-
	Live Load (plf)					782	549	400	301	232	182	146	119	98	81	69	58	50	-
	Min. End Bearing (in.)	5.8	4.6	3.9	3.3	2.9	2.6	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-
	Total Load (plf)	3,358	2,145	1,486	1,089	831	654	528	429	328	255	202	162	132	108	89	74	62	-
3 1/8 x 15	Live Load (plf)					603	439	330	254	200	160	130	107	89	75	64	55	-	-
	Min. End Bearing (in.)	6.6	5.3	4.4	3.8	3.3	2.9	2.7	2.4	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-
	Total Load (plf)	4,253	2,734	1,895	1,388	1,060	834	673	554	447	349	277	222	181	148	123	103	86	72
	Live Load (plf)					819	597	449	346	272	218	177	146	122	102	87	75	64	64
μC 3 1/2 x 16	Min. End Bearing (in.)	7.5	6.0	5.0	4.3	3.8	3.4	3.0	2.7	2.4	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5
	Total Load (plf)	3,978	2,597	1,799	1,319	1,007	793	640	527	439	342	272	219	178	146	121	101	85	72
	Live Load (plf)						585	439	338	266	213	173	143	119	100	85	73	63	63
	Min. End Bearing (in.)	7.9	6.4	5.4	4.6	4.0	3.6	3.2	2.9	2.7	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5
3 1/8 x 18	Total Load (plf)	4,558	3,091	2,143	1,571	1,199	945	763	628	523	440	355	286	234	192	160	134	113	96
	Live Load (plf)						759	571	439	346	277	225	185	155	130	111	95	82	82
	Min. End Bearing (in.)	9.0	7.6	6.4	5.5	4.8	4.2	3.8	3.5	3.2	2.9	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5
	Total Load (plf)	5,104	3,462	2,400	1,759	1,343	1,058	854	698	579	487	398	321	262	216	179	150	126	107
μC 3 1/2 x 18	Live Load (plf)						851	639	492	387	310	252	208	173	146	124	106	92	92
	Min. End Bearing (in.)	9.0	7.6	6.4	5.5	4.8	4.2	3.8	3.4	3.1	2.9	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5
	Total Load (plf)	5,198	3,629	2,516	1,844	1,409	1,110	896	735	610	513	437	367	299	247	206	173	146	124
	Live Load (plf)								725	559	439	352	286	236	197	166	141	121	104
3 1/8 x 19 1/2	Min. End Bearing (in.)	10.3	9.0	7.5	6.4	5.6	5.0	4.5	4.1	3.7	3.4	3.1	2.8	2.5	2.2	2.0	1.8	1.6	1.5
	Total Load (plf)	6,078	4,249	2,964	2,173	1,660	1,308	1,048	855	709	597	508	437	363	300	250	210	177	151
	Live Load (plf)									675	531	425	346	285	237	200	170	146	126
	Min. End Bearing (in.)	10.7	9.4	7.9	6.7	5.9	5.2	4.7	4.2	3.8	3.5	3.2	3.0	2.7	2.4	2.1	1.9	1.7	1.6
3 1/8 x 21	Total Load (plf)	5,910	4,086	2,919	2,140	1,635	1,288	1,039	848	703	592	504	434	377	311	260	218	185	158
	Live Load (plf)									698	549	439	357	294	245	207	176	151	130
	Min. End Bearing (in.)	11.7	10.1	8.7	7.4	6.5	5.8	5.2	4.7	4.2	3.9	3.6	3.3	3.1	2.7	2.4	2.2	2.0	1.8

TABLE 4 (Continued)

NOMINAL 4X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER SNOW LOADS—LEGEND: $\square_{JC}$ = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; *Load Duration Factor $C_D = 1.15$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
JC 3 1/2 x 22	Total Load (plf)	7,202	4,921	3,589	2,632	2,011	1,573	1,257	1,026	851	717	611	526	457	400	336	283	240	205
	Live Load (plf)									707	566	460	379	316	266	226	194	168	
	Min. End Bearing (in.)	12.7	10.9	9.5	8.2	7.1	6.3	5.6	5.1	4.6	4.2	3.9	3.6	3.3	3.1	2.8	2.5	2.3	2.1
	Total Load (plf)	6,705	4,554	3,352	2,458	1,878	1,480	1,186	967	803	676	576	496	431	378	322	271	230	196
3 1/8 x 22 1/2	Live Load (plf)									675	541	439	362	302	254	216	185	160	
	Min. End Bearing (in.)	13.2	11.3	10.0	8.5	7.5	6.6	5.9	5.3	4.8	4.4	4.1	3.8	3.5	3.3	3.0	2.7	2.4	2.2
	Total Load (plf)	7,601	5,061	3,791	2,798	2,138	1,678	1,341	1,095	909	765	652	562	488	428	377	332	282	241
	Live Load (plf)												533	439	366	309	262	225	194
3 1/8 x 24	Min. End Bearing (in.)	15.0	12.5	11.3	9.7	8.5	7.5	6.7	6.0	5.5	5.0	4.6	4.3	4.0	3.7	3.5	3.3	3.0	2.7
	Total Load (plf)	8,513	5,668	4,246	3,134	2,385	1,858	1,485	1,212	1,006	847	722	622	541	474	418	371	316	270
	Live Load (plf)												597	492	410	346	294	252	218
	Min. End Bearing (in.)	15.0	12.5	11.3	9.7	8.5	7.4	6.6	6.0	5.4	5.0	4.6	4.2	3.9	3.7	3.5	3.3	3.0	2.7

Assumptions:

1. Span is the on-center distance between supports and is valid for simple-span applications.
2. These tables assume full lateral support of the compression side.
3. The values represent the load carrying capacity of the beam in pounds per lineal foot (plf) of the beam length.
4. The values are based on uniform loads and a deflection limit of L/240 under design live load and L/180 under design total load in dry-use conditions.
5. The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 35 pcf).
6. The designers must check both the total load and live load.
7. Where the live load is blank, the total load governs the design.
8. Do not use a product where designated " " without further analysis by a design professional.

To Use:

1. Select the on-center span required.
2. Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
3. Select a product that meets or exceeds both the design total and live loads.

TABLE 5

NOMINAL 4X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: μ C = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_v = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; Load Duration Factor $C_D = 1.25$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
3 1/8 x 7 1/2	Total Load (plf)	910	580	333	208	137	95	68	-	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	858	439	254	160	107	75	55	-	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.8	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-
3 1/8 x 9	Total Load (plf)	1,312	837	579	362	240	167	120	88	66	-	-	-	-	-	-	-	-	-
	Live Load (plf)	759	439	277	185	130	95	71	55	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.6	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-
UC 3 1/2 x 9 1/4	Total Load (plf)	1,552	990	685	441	293	203	146	108	81	62	-	-	-	-	-	-	-	-
	Live Load (plf)	923	534	337	225	158	115	87	67	53	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.7	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
UC 3 1/2 x 9 1/2	Total Load (plf)	1,637	1,045	723	478	318	221	159	117	88	68	-	-	-	-	-	-	-	-
	Live Load (plf)	1,000	579	365	244	172	125	94	72	57	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.9	2.3	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
3 1/8 x 10 1/2	Total Load (plf)	1,786	1,140	790	578	385	268	193	143	108	84	65	-	-	-	-	-	-	-
	Live Load (plf)	698	439	294	207	151	113	87	69	55	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.5	2.8	2.4	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
UC 3 1/2 x 11 1/4	Total Load (plf)	2,298	1,467	1,016	744	531	370	267	198	151	116	91	72	58	-	-	-	-	-
	Live Load (plf)	961	605	406	285	208	156	120	95	76	62	51	-	-	-	-	-	-	-
	Min. End Bearing (in.)	4.1	3.2	2.7	2.3	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
UC 3 1/2 x 11 7/8	Total Load (plf)	2,560	1,635	1,132	829	626	437	316	235	178	138	109	86	69	-	-	-	-	-
	Live Load (plf)	1,131	712	477	335	244	183	141	111	89	72	60	-	-	-	-	-	-	-
	Min. End Bearing (in.)	4.5	3.6	3.0	2.6	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
3 1/8 x 12	Total Load (plf)	2,335	1,491	1,033	756	577	402	291	216	164	127	100	80	64	-	-	-	-	-
	Live Load (plf)	656	439	309	225	169	130	102	82	67	55	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	4.6	3.7	3.1	2.6	2.3	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
3 1/8 x 13 1/2	Total Load (plf)	2,956	1,888	1,308	958	731	576	417	311	237	184	145	116	94	77	63	-	-	-
	Live Load (plf)	934	626	439	320	241	185	146	117	95	78	65	55	-	-	-	-	-	-
	Min. End Bearing (in.)	5.8	4.7	3.9	3.3	2.9	2.6	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-

TABLE 5 (Continued)

NOMINAL 4X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: $\mu E = I$ -JOIST COMPATIBLE (JJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; *Load Duration Factor $C_D = 1.25$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
JJC 3 1/2 x 14	Total Load (plf)	3,561	2,275	1,576	1,155	881	694	522	389	297	231	183	146	118	97	80	66	55	-
	Live Load (plf)					782	549	400	301	232	182	146	119	98	81	69	58	50	-
	Min. End Bearing (in.)	6.3	5.0	4.2	3.6	3.1	2.8	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-
	Total Load (plf)	3,651	2,332	1,616	1,184	904	712	575	429	328	255	202	162	132	108	89	74	62	-
3 1/8 x 15	Live Load (plf)					858	603	439	330	254	200	160	130	107	89	75	64	55	-
	Min. End Bearing (in.)	7.2	5.8	4.8	4.1	3.6	3.2	2.9	2.4	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-
	Total Load (plf)	4,624	2,973	2,060	1,510	1,153	908	733	585	447	349	277	222	181	148	123	103	86	72
JJC 3 1/2 x 16	Live Load (plf)						819	597	449	346	272	218	177	146	122	102	87	75	64
	Min. End Bearing (in.)	8.2	6.6	5.5	4.7	4.1	3.6	3.3	2.9	2.4	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5
	Total Load (plf)	4,325	2,823	1,957	1,434	1,095	863	696	573	439	342	272	219	178	146	121	101	85	72
3 1/8 x 16 1/2	Live Load (plf)						802	585	439	338	266	213	173	143	119	100	85	73	63
	Min. End Bearing (in.)	8.5	7.0	5.8	5.0	4.4	3.9	3.5	3.2	2.7	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5
	Total Load (plf)	4,955	3,361	2,330	1,708	1,305	1,028	830	684	570	447	355	286	234	192	160	134	113	96
3 1/8 x 18	Live Load (plf)							759	571	439	346	277	225	185	155	130	111	95	82
	Min. End Bearing (in.)	9.8	8.3	6.9	5.9	5.2	4.6	4.2	3.8	3.4	2.9	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5
	Total Load (plf)	5,550	3,765	2,610	1,913	1,461	1,151	930	760	631	501	398	321	262	216	179	150	126	107
JJC 3 1/2 x 18	Live Load (plf)							851	639	492	387	310	252	208	173	146	124	106	92
	Min. End Bearing (in.)	9.8	8.3	6.9	5.9	5.2	4.6	4.2	3.7	3.4	2.9	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5
	Total Load (plf)	5,651	3,946	2,736	2,006	1,532	1,208	975	801	664	559	454	367	299	247	206	173	146	124
3 1/8 x 19 1/2	Live Load (plf)							965	725	559	439	352	286	236	197	166	141	121	104
	Min. End Bearing (in.)	11.2	9.8	8.1	7.0	6.1	5.4	4.9	4.4	4.0	3.7	3.2	2.8	2.5	2.2	2.0	1.8	1.6	1.5
	Total Load (plf)	6,608	4,620	3,224	2,364	1,806	1,423	1,140	930	772	650	550	444	363	300	250	210	177	151
JJC 3 1/2 x 20	Live Load (plf)								877	675	531	425	346	285	237	200	170	146	126
	Min. End Bearing (in.)	11.6	10.2	8.5	7.3	6.4	5.7	5.1	4.6	4.2	3.8	3.5	3.0	2.7	2.4	2.1	1.9	1.7	1.6
	Total Load (plf)	6,425	4,443	3,174	2,328	1,778	1,402	1,131	923	766	645	550	460	377	311	260	218	185	158
3 1/8 x 21	Live Load (plf)								906	698	549	439	357	294	245	207	176	151	130
	Min. End Bearing (in.)	12.7	11.0	9.4	8.1	7.1	6.3	5.6	5.1	4.6	4.2	3.9	3.5	3.1	2.7	2.4	2.2	2.0	1.8

TABLE 5 (Continued)

NOMINAL 4X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: μ = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; *Load Duration Factor $C_D = 1.25$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
UC 3 1/2 x 22	Total Load (plf)	7,829	5,351	3,903	2,862	2,187	1,712	1,368	1,117	927	781	666	573	487	403	336	283	240	205
	Live Load (plf)									899	707	566	460	379	316	266	226	194	168
	Min. End Bearing (in.)	13.8	11.8	10.3	8.9	7.8	6.8	6.1	5.5	5.0	4.6	4.2	3.9	3.6	3.1	2.8	2.5	2.3	2.1
3 1/8 x 22 1/2	Total Load (plf)	7,290	4,952	3,645	2,673	2,043	1,611	1,290	1,053	874	736	628	541	466	385	322	271	230	196
	Live Load (plf)									858	675	541	439	362	302	254	216	185	160
	Min. End Bearing (in.)	14.4	12.2	10.8	9.3	8.1	7.2	6.4	5.8	5.3	4.8	4.4	4.1	3.8	3.4	3.0	2.7	2.4	2.2
3 1/8 x 24	Total Load (plf)	8,263	5,503	4,122	3,043	2,326	1,825	1,459	1,191	989	834	711	612	533	467	393	332	282	241
	Live Load (plf)									819	656	533	439	366	309	262	225	194	
	Min. End Bearing (in.)	16.3	13.6	12.2	10.5	9.2	8.2	7.3	6.6	6.0	5.5	5.0	4.7	4.3	4.1	3.6	3.3	3.0	2.7
UC 3 1/2 x 24	Total Load (plf)	9,255	6,163	4,617	3,408	2,594	2,021	1,616	1,319	1,095	923	787	678	589	517	440	371	316	270
	Live Load (plf)									918	735	597	492	410	346	294	252	218	
	Min. End Bearing (in.)	16.3	13.6	12.2	10.5	9.2	8.1	7.2	6.5	5.9	5.4	5.0	4.6	4.3	4.0	3.6	3.3	3.0	2.7

Assumptions:

1. Span is the on-center distance between supports and is valid for simple-span applications.
2. These tables assume full lateral support of the compression side.
3. The values represent the load carrying capacity of the beam in pounds per lineal foot (plf) of the beam length.
4. The values are based on uniform loads and a deflection limit of L/240 under design live load and L/180 under design total load in dry-use conditions.
5. The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 35 pcf).
6. The designers must check both the total load and live load.
7. Where the live load is blank, the total load governs the design.
8. Do not use a product where designated " " without further analysis by a design professional.

To Use:

1. Select the on-center span required.
2. Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
3. Select a product that meets or exceeds both the design total and live loads.

TABLE 6

NOMINAL 6X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; *Load Duration Factor $C_D = 1.0$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
5 1/8 x 7 1/2	Total Load (plf)	1,192	711	408	253	167	114	81	-	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	938	480	278	175	117	82	60	-	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-
5 1/8 x 9	Total Load (plf)	1,718	1,096	709	443	293	202	144	106	79	-	-	-	-	-	-	-	-	-
	Live Load (plf)	1,622	830	480	303	203	142	104	78	60	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-
IJC 5 1/2 x 9 1/4	Total Load (plf)	1,948	1,243	827	516	342	236	169	124	93	70	-	-	-	-	-	-	-	-
	Live Load (plf)	1,889	967	560	353	236	166	121	91	70	55	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
IJC 5 1/2 x 9 1/2	Total Load (plf)	2,056	1,311	897	560	371	257	184	135	101	77	-	-	-	-	-	-	-	-
	Live Load (plf)	2,047	1,048	606	382	256	180	131	98	76	60	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.3	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
5 1/8 x 10 1/2	Total Load (plf)	2,341	1,494	1,033	708	470	326	234	173	130	99	77	-	-	-	-	-	-	-
	Live Load (plf)	1,318	763	480	322	226	165	124	95	75	60	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.8	2.3	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
IJC 5 1/2 x 11 1/4	Total Load (plf)	2,885	1,841	1,274	932	622	433	311	230	174	133	104	82	65	-	-	-	-	-
	Live Load (plf)	1,740	1,007	634	425	298	218	163	126	99	79	64	53	-	-	-	-	-	-
	Min. End Bearing (in.)	3.2	2.6	2.2	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
IJC 5 1/2 x 11 7/8	Total Load (plf)	3,216	2,052	1,420	1,039	734	511	368	272	206	159	124	98	78	62	-	-	-	-
	Live Load (plf)	2,047	1,184	746	500	351	256	192	148	116	93	76	62	52	-	-	-	-	-
	Min. End Bearing (in.)	3.6	2.9	2.4	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
5 1/8 x 12	Total Load (plf)	3,060	1,953	1,352	989	706	491	354	262	199	153	120	94	75	60	-	-	-	-
	Live Load (plf)	1,139	717	480	337	246	185	142	112	90	73	60	50	-	-	-	-	-	-
	Min. End Bearing (in.)	3.7	3.0	2.5	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
5 1/8 x 15 1/2	Total Load (plf)	3,875	2,474	1,713	1,254	956	704	509	378	287	222	175	139	111	90	73	60	-	-
	Live Load (plf)	1,622	1,021	684	480	350	263	203	159	128	104	86	71	60	51	-	-	-	-
	Min. End Bearing (in.)	4.7	3.7	3.1	2.7	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-

TABLE 6 (Continued)

NOMINAL 6X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (JIC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; Load Duration Factor $C_D = 1.0$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
μC 5 1/2 x 14	Total Load (plf)	4,473	2,856	1,978	1,448	1,104	844	610	454	345	268	210	168	135	109	89	73	60	-
	Live Load (plf)		1,941	1,222	819	575	419	315	243	191	153	124	102	85	72	61	52	-	-
	Min. End Bearing (in.)	5.0	4.0	3.4	2.9	2.5	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-
5 1/8 x 15	Total Load (plf)	4,786	3,056	2,117	1,550	1,182	924	702	523	398	309	244	195	157	128	105	86	71	59
	Live Load (plf)				1,401	938	659	480	361	278	219	175	142	117	98	82	70	60	52
	Min. End Bearing (in.)	5.8	4.6	3.8	3.3	2.9	2.5	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
μC 5 1/2 x 16	Total Load (plf)	5,809	3,733	2,586	1,894	1,433	1,114	889	684	522	406	321	257	208	170	140	115	96	80
	Live Load (plf)				1,824	1,222	858	626	470	362	285	228	185	153	127	107	91	78	68
	Min. End Bearing (in.)	6.5	5.3	4.4	3.8	3.3	2.9	2.5	2.2	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 16 1/2	Total Load (plf)	5,671	3,700	2,563	1,878	1,426	1,109	885	700	535	416	329	264	214	175	144	119	99	83
	Live Load (plf)				1,864	1,249	877	640	480	370	291	233	189	156	130	110	93	80	69
	Min. End Bearing (in.)	6.8	5.6	4.7	4.0	3.5	3.1	2.7	2.4	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 18	Total Load (plf)	6,497	4,406	3,053	2,237	1,684	1,310	1,046	852	698	544	431	347	282	231	191	159	133	112
	Live Load (plf)				1,622	1,139	830	624	480	378	303	246	203	169	142	121	104	90	78
	Min. End Bearing (in.)	7.8	6.6	5.5	4.7	4.1	3.6	3.2	2.9	2.6	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5	1.5
μC 5 1/2 x 18	Total Load (plf)	6,972	4,728	3,276	2,383	1,795	1,396	1,114	908	749	584	463	372	302	248	205	171	143	120
	Live Load (plf)				1,740	1,222	891	669	516	406	325	264	218	181	153	130	111	96	83
	Min. End Bearing (in.)	7.8	6.6	5.5	4.7	4.1	3.6	3.2	2.9	2.6	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 19 1/2	Total Load (plf)	7,410	5,172	3,585	2,606	1,963	1,527	1,219	994	824	693	553	445	362	298	247	207	174	147
	Live Load (plf)					1,448	1,056	793	611	480	385	313	258	215	181	154	132	114	96
	Min. End Bearing (in.)	8.9	7.8	6.5	5.5	4.8	4.2	3.7	3.4	3.1	2.8	2.4	2.1	1.9	1.6	1.5	1.5	1.5	1.5
μC 5 1/2 x 20	Total Load (plf)	8,302	5,803	4,038	2,914	2,195	1,708	1,364	1,112	922	775	641	516	421	346	288	241	202	171
	Live Load (plf)					1,677	1,222	918	707	556	445	362	298	249	210	178	153	132	114
	Min. End Bearing (in.)	9.3	8.2	6.8	5.8	5.0	4.4	3.9	3.5	3.2	2.9	2.6	2.3	2.0	1.8	1.6	1.5	1.5	1.5
5 1/8 x 21	Total Load (plf)	8,424	5,824	4,159	3,002	2,261	1,760	1,406	1,146	950	799	680	560	457	376	313	262	221	187
	Live Load (plf)							1,318	991	763	600	480	391	322	268	226	192	165	142
	Min. End Bearing (in.)	10.1	8.8	7.5	6.4	5.5	4.8	4.3	3.9	3.5	3.2	3.0	2.6	2.3	2.1	1.8	1.6	1.5	1.5

TABLE 6 (Continued)

NOMINAL 6X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: μ_c = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; *Load Duration Factor $C_D = 1.0$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
UC 5 1/2 x 22	Total Load (plf)	9,837	6,721	4,843	3,495	2,633	2,050	1,637	1,335	1,107	931	793	682	566	467	389	326	276	234
	Live Load (plf)							1,627	1,222	941	740	593	482	397	331	279	237	203	176
	Min. End Bearing (in.)	11.0	9.4	8.2	6.9	6.0	5.2	4.7	4.2	3.8	3.5	3.2	3.0	2.7	2.4	2.1	1.9	1.7	1.5
	Total Load (plf)	9,559	6,491	4,744	3,424	2,580	2,008	1,604	1,308	1,085	913	777	669	566	467	389	327	276	235
5 1/8 x 22 1/2	Live Load (plf)								1,218	938	738	591	480	396	330	278	236	203	175
	Min. End Bearing (in.)	11.5	9.8	8.6	7.3	6.3	5.5	4.9	4.4	4.0	3.7	3.4	3.1	2.9	2.5	2.3	2.0	1.8	1.7
	Total Load (plf)	10,835	7,213	5,364	3,873	2,918	2,272	1,815	1,481	1,228	1,034	880	758	658	571	476	400	339	289
	Live Load (plf)								1,479	1,139	896	717	583	480	401	337	287	246	213
5 1/8 x 24	Min. End Bearing (in.)	13.0	10.9	9.7	8.2	7.1	6.2	5.5	5.0	4.5	4.2	3.8	3.5	3.3	3.1	2.7	2.5	2.2	2.0
	Total Load (plf)	11,628	7,741	5,716	4,126	3,110	2,421	1,934	1,578	1,309	1,101	938	807	701	613	511	430	364	310
	Live Load (plf)									1,222	961	770	626	516	430	362	308	264	228
	Min. End Bearing (in.)	13.0	10.9	9.6	8.1	7.0	6.2	5.5	5.0	4.5	4.1	3.8	3.5	3.3	3.1	2.7	2.5	2.2	2.0

Assumptions:

- Span is the on-center distance between supports and is valid for simple-span applications.
- These tables assume full lateral support of the compression side.
- The values represent the load carrying capacity of the beam in pounds per lineal foot (plf) of the beam length.
- The values are based on uniform loads and a deflection limit of L/360 under design live load and L/240 under design total load in dry-use conditions.
- The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 35 pcf).
- The designers must check both the total load and live load.
- Where the live load is blank, the total load governs the design.
- Do not use a product where designated " " without further analysis by a design professional.

To Use:

- Select the on-center span required.
- Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
- Select a product that meets or exceeds both the design total and live loads.

TABLE 7

NOMINAL 6X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER SNOW LOADS—LEGEND: μC = I-JOIST COMPATIBLE (μC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_v = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; *Load Duration Factor $C_D = 1.15$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
5 1/8 x 7 1/2	Total Load (plf)	1,372	875	547	341	225	155	111	81	60	-	-	-	-	-	-	-	-	-
	Live Load (plf)	721	417	263	176	124	90	68	52	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-
5 1/8 x 9	Total Load (plf)	1,978	1,262	873	594	394	274	196	145	109	83	64	-	-	-	-	-	-	-
	Live Load (plf)	1,245	721	454	304	214	156	117	90	71	57	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.4	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
μC 5 1/2 x 9 1/4	Total Load (plf)	2,243	1,431	990	693	460	319	229	169	128	98	76	59	-	-	-	-	-	-
	Live Load (plf)	840	529	354	249	181	136	105	83	66	54	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.5	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-
μC 5 1/2 x 9 1/2	Total Load (plf)	2,366	1,510	1,044	751	499	347	249	184	139	107	83	65	-	-	-	-	-	-
	Live Load (plf)	910	573	384	270	196	148	114	89	72	58	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.7	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-
5 1/8 x 10 1/2	Total Load (plf)	2,694	1,720	1,190	871	631	439	317	235	178	137	107	85	67	54	-	-	-	-
	Live Load (plf)	1,144	721	483	339	247	186	143	113	90	73	60	50	-	-	-	-	-	-
	Min. End Bearing (in.)	3.3	2.6	2.2	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
μC 5 1/2 x 11 1/4	Total Load (plf)	3,320	2,120	1,467	1,074	819	582	420	312	237	183	144	114	91	74	60	-	-	-
	Live Load (plf)	951	637	448	326	245	189	149	119	97	80	66	56	-	-	-	-	-	-
	Min. End Bearing (in.)	3.7	3.0	2.5	2.1	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-
μC 5 1/2 x 11 7/8	Total Load (plf)	3,700	2,363	1,636	1,198	913	686	496	369	280	217	171	136	109	88	72	59	-	-
	Live Load (plf)	1,119	750	526	384	288	222	175	140	114	94	78	66	56	-	-	-	-	-
	Min. End Bearing (in.)	4.2	3.3	2.8	2.4	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-
5 1/8 x 12	Total Load (plf)	3,521	2,248	1,557	1,140	869	660	477	355	270	209	164	131	105	85	69	57	-	-
	Live Load (plf)	1,076	721	506	369	277	214	168	134	109	90	75	63	54	-	-	-	-	-
	Min. End Bearing (in.)	4.2	3.4	2.8	2.4	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-
5 1/8 x 15 1/2	Total Load (plf)	4,459	2,848	1,972	1,445	1,102	867	684	509	389	302	238	191	154	126	103	85	71	59
	Live Load (plf)	1,026	721	525	395	304	239	191	156	128	107	90	77	66	57	-	-	-	-
	Min. End Bearing (in.)	5.4	4.3	3.6	3.1	2.7	2.4	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

TABLE 7 (Continued)

NOMINAL 6X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER SNOW LOADS—LEGEND: μ_c = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; *Load Duration Factor $C_D = 1.15$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
μC 5 1/2 x 14	Total Load (plf)	5,147	3,287	2,277	1,668	1,273	994	793	611	466	363	287	230	186	152	125	104	86	72
	Live Load (plf)				1,228	863	629	472	364	286	229	186	154	128	108	92	79	68	
	Min. End Bearing (in.)	5.8	4.6	3.9	3.3	2.9	2.6	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	Total Load (plf)	5,507	3,518	2,437	1,786	1,363	1,065	850	693	537	419	332	266	216	177	146	121	101	85
5 1/8 x 15	Live Load (plf)					989	721	541	417	328	263	214	176	147	124	105	90	78	
	Min. End Bearing (in.)	6.6	5.3	4.4	3.8	3.3	2.9	2.6	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	Total Load (plf)	6,683	4,296	2,977	2,182	1,651	1,284	1,025	835	692	548	435	349	284	233	193	161	135	114
	Live Load (plf)						939	705	543	427	342	278	229	191	161	137	117	101	
μC 5 1/2 x 16	Min. End Bearing (in.)	7.5	6.0	5.0	4.3	3.7	3.3	2.9	2.6	2.4	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5
	Total Load (plf)	6,524	4,258	2,951	2,163	1,643	1,279	1,021	832	689	562	446	358	292	240	199	166	139	118
	Live Load (plf)						959	721	555	437	350	284	234	195	164	140	120	104	
	Min. End Bearing (in.)	7.9	6.4	5.4	4.6	4.0	3.5	3.1	2.8	2.6	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 18	Total Load (plf)	7,474	5,070	3,514	2,576	1,940	1,510	1,206	983	815	686	583	470	383	316	262	220	185	157
	Live Load (plf)						936	721	567	454	369	304	253	214	182	156	134		
	Min. End Bearing (in.)	9.0	7.6	6.4	5.5	4.7	4.1	3.7	3.3	3.0	2.8	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5
	Total Load (plf)	8,021	5,441	3,771	2,744	2,067	1,609	1,285	1,048	869	730	622	504	411	339	281	236	199	168
μC 5 1/2 x 18	Live Load (plf)						1,004	773	608	487	396	326	272	229	195	167	144		
	Min. End Bearing (in.)	9.0	7.6	6.4	5.4	4.7	4.1	3.7	3.3	3.0	2.7	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5
	Total Load (plf)	8,525	5,952	4,126	3,001	2,261	1,760	1,406	1,146	951	800	681	586	491	405	338	284	240	204
	Live Load (plf)							916	721	577	469	387	322	271	231	198	171		
5 1/8 x 19 1/2	Min. End Bearing (in.)	10.3	9.0	7.5	6.4	5.5	4.8	4.3	3.9	3.5	3.2	3.0	2.7	2.5	2.2	2.0	1.8	1.6	1.5
	Total Load (plf)	9,551	6,678	4,648	3,355	2,528	1,968	1,572	1,282	1,064	895	762	656	569	471	392	330	279	237
	Live Load (plf)							1,061	834	668	543	448	373	314	267	229	198		
	Min. End Bearing (in.)	10.7	9.4	7.8	6.6	5.7	5.0	4.5	4.0	3.7	3.4	3.1	2.9	2.7	2.4	2.1	1.9	1.7	1.6
5 1/8 x 21	Total Load (plf)	9,692	6,702	4,787	3,456	2,605	2,028	1,620	1,322	1,097	923	786	677	587	511	426	358	303	259
	Live Load (plf)									900	721	586	483	403	339	288	247	214	
	Min. End Bearing (in.)	11.7	10.1	8.7	7.3	6.3	5.5	4.9	4.5	4.0	3.7	3.4	3.2	2.9	2.7	2.4	2.2	2.0	1.8

TABLE 7 (Continued)

NOMINAL 6X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER SNOW LOADS—LEGEND: μ_C = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_v = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $E_y = 650 \text{ psi}$; $F_{c\perp} = 650 \text{ psi}$; $\text{Load Duration Factor } C_D = 1.15$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
UC 5 1/2 x 22	Total Load (plf)	11,317	7,734	5,574	4,024	3,033	2,362	1,887	1,540	1,278	1,075	916	789	685	600	528	445	377	322
	Live Load (plf)											889	723	596	497	418	356	305	263
	Min. End Bearing (in.)	12.7	10.9	9.4	7.9	6.9	6.0	5.4	4.8	4.4	4.0	3.7	3.4	3.2	3.0	2.8	2.5	2.3	2.1
	Total Load (plf)	10,997	7,469	5,459	3,942	2,971	2,314	1,849	1,509	1,252	1,054	898	773	672	588	518	445	377	322
5 1/8 x 22 1/2	Live Load (plf)											886	721	594	495	417	355	304	263
	Min. End Bearing (in.)	13.2	11.3	9.9	8.3	7.2	6.3	5.6	5.1	4.6	4.2	3.9	3.6	3.4	3.1	3.0	2.7	2.4	2.2
	Total Load (plf)	12,465	8,300	6,173	4,458	3,360	2,618	2,092	1,707	1,417	1,193	1,017	876	761	666	588	521	462	395
	Live Load (plf)												875	721	601	506	430	369	319
5 1/8 x 24	Min. End Bearing (in.)	15.0	12.5	11.2	9.4	8.1	7.2	6.4	5.7	5.2	4.8	4.4	4.1	3.8	3.6	3.3	3.1	3.0	2.7
	Total Load (plf)	13,377	8,907	6,578	4,750	3,581	2,789	2,229	1,819	1,510	1,271	1,083	933	811	710	626	555	495	424
	Live Load (plf)																		
	Min. End Bearing (in.)	15.0	12.5	11.1	9.4	8.1	7.1	6.3	5.7	5.2	4.7	4.4	4.0	3.8	3.5	3.3	3.1	3.0	2.7

Assumptions:

- Span is the on-center distance between supports and is valid for simple-span applications.
- These tables assume full lateral support of the compression side.
- The values represent the load carrying capacity of the beam in pounds per lined foot (plf) of the beam length.
- The values are based on uniform loads and a deflection limit of L/240 under design live load and L/180 under design total load in dry-use conditions.
- The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 35 pcf).
- The designers must check both the total load and live load.
- Where the live load is blank, the total load governs the design.
- Do not use a product where designated "-" without further analysis by a design professional.

To Use:

- Select the on-center span required.
- Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
- Select a product that meets or exceeds both the design total and live loads.

TABLE 8

NOMINAL 6X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (JIC) SIZES
 $F_{bx} = 2,400 \text{ psi}; F_{vx} = 265 \text{ psi}; E_x = 1.8 \times 10^6 \text{ psi}; F_{c-L} = 650 \text{ psi}; \text{Load Duration Factor } C_D = 1.25$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
5 1/8 x 7 1/2	Total Load (plf)	1,492	952	547	341	225	155	111	81	60	-	-	-	-	-	-	-	-	-
	Live Load (plf)	1,408	721	417	263	176	124	90	68	52	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-
	Total Load (plf)	2,151	1,373	950	594	394	274	196	145	109	83	64	-	-	-	-	-	-	-
5 1/8 x 9	Live Load (plf)	1,245	721	454	304	214	156	117	90	71	57	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.6	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
	Total Load (plf)	2,439	1,556	1,077	693	460	319	229	169	128	98	76	59	-	-	-	-	-	-
	Live Load (plf)	1,451	840	529	354	249	181	136	105	83	66	54	-	-	-	-	-	-	-
JIC 5 1/2 x 9 1/4	Min. End Bearing (in.)	2.7	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-
	Total Load (plf)	2,573	1,642	1,136	751	499	347	249	184	139	107	83	65	-	-	-	-	-	-
	Live Load (plf)	1,572	910	573	384	270	196	148	114	89	72	58	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.9	2.3	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-
5 1/8 x 10 1/2	Total Load (plf)	2,930	1,870	1,295	948	631	439	317	235	178	137	107	85	67	54	-	-	-	-
	Live Load (plf)	1,144	721	483	339	247	186	143	113	90	73	60	50	-	-	-	-	-	-
	Min. End Bearing (in.)	3.5	2.8	2.4	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
	Total Load (plf)	3,610	2,305	1,596	1,169	835	582	420	312	237	183	144	114	91	74	60	-	-	-
JIC 5 1/2 x 11 1/4	Live Load (plf)	1,511	951	637	448	326	245	189	149	119	97	80	66	56	-	-	-	-	-
	Min. End Bearing (in.)	4.1	3.2	2.7	2.3	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
	Total Load (plf)	4,024	2,569	1,779	1,303	983	686	496	369	280	217	171	136	109	88	72	59	-	-
	Live Load (plf)	1,777	1,119	750	526	384	288	222	175	140	114	94	78	66	56	-	-	-	-
JIC 5 1/2 x 11 7/8	Min. End Bearing (in.)	4.5	3.6	3.0	2.6	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-
	Total Load (plf)	3,829	2,445	1,693	1,240	946	660	477	355	270	209	164	131	105	85	69	57	-	-
	Live Load (plf)	1,076	721	506	369	277	214	168	134	109	90	75	63	54	-	-	-	-	-
	Min. End Bearing (in.)	4.6	3.7	3.1	2.6	2.3	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-
5 1/8 x 15 1/2	Total Load (plf)	4,848	3,097	2,145	1,572	1,199	944	684	509	389	302	238	191	154	126	103	85	71	59
	Live Load (plf)	1,532	1,026	721	525	395	304	239	191	156	128	107	90	77	66	57	-	-	-
	Min. End Bearing (in.)	5.8	4.7	3.9	3.3	2.9	2.6	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

TABLE 8 (Continued)

NOMINAL 6X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: $\mu E = I$ -JOIST COMPATIBLE (JIC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 265 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 650 \text{ psi}$; *Load Duration Factor $C_D = 1.25$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
μC 5 1/2 x 14	Total Load (plf)	5,596	3,575	2,477	1,815	1,385	1,083	820	611	466	363	287	230	186	152	125	104	86	72
	Live Load (plf)					1,228	863	629	472	364	286	229	186	154	128	108	92	79	68
	Min. End Bearing (in.)	6.3	5.0	4.2	3.6	3.1	2.8	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 15	Total Load (plf)	5,987	3,825	2,651	1,942	1,483	1,160	926	703	537	419	332	266	216	177	146	121	101	85
	Live Load (plf)					1,408	989	721	541	417	328	263	214	176	147	124	105	90	78
	Min. End Bearing (in.)	7.2	5.8	4.8	4.1	3.6	3.2	2.8	2.4	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
μC 5 1/2 x 16	Total Load (plf)	7,266	4,672	3,238	2,373	1,796	1,398	1,116	910	703	548	435	349	284	233	193	161	135	114
	Live Load (plf)						1,288	939	705	543	427	342	278	229	191	161	137	117	101
	Min. End Bearing (in.)	8.2	6.6	5.5	4.7	4.1	3.6	3.2	2.9	2.4	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 16 1/2	Total Load (plf)	7,093	4,630	3,209	2,352	1,788	1,392	1,111	906	720	562	446	358	292	240	199	166	139	118
	Live Load (plf)						1,316	959	721	555	437	350	284	234	195	164	140	120	104
	Min. End Bearing (in.)	8.5	7.0	5.8	5.0	4.3	3.8	3.4	3.1	2.7	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 18	Total Load (plf)	8,126	5,513	3,821	2,802	2,111	1,644	1,313	1,071	888	733	583	470	383	316	262	220	185	157
	Live Load (plf)							1,245	936	721	567	454	369	304	253	214	182	156	134
	Min. End Bearing (in.)	9.8	8.3	6.9	5.9	5.1	4.5	4.0	3.6	3.3	2.9	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5
μC 5 1/2 x 18	Total Load (plf)	8,721	5,916	4,101	2,985	2,249	1,751	1,399	1,141	946	787	625	504	411	339	281	236	199	168
	Live Load (plf)							1,337	1,004	773	608	487	396	326	272	229	195	167	144
	Min. End Bearing (in.)	9.8	8.3	6.9	5.9	5.1	4.5	4.0	3.6	3.3	2.9	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5
5 1/8 x 19 1/2	Total Load (plf)	9,268	6,472	4,487	3,264	2,460	1,915	1,530	1,248	1,036	872	743	601	491	405	338	284	240	204
	Live Load (plf)								1,190	916	721	577	469	387	322	271	231	198	171
	Min. End Bearing (in.)	11.2	9.8	8.1	6.9	6.0	5.2	4.7	4.2	3.8	3.5	3.2	2.8	2.5	2.2	2.0	1.8	1.6	1.5
μC 5 1/2 x 20	Total Load (plf)	10,384	7,261	5,055	3,649	2,751	2,142	1,711	1,396	1,159	975	831	698	570	471	392	330	279	237
	Live Load (plf)								1,377	1,061	834	668	543	448	373	314	267	229	198
	Min. End Bearing (in.)	11.6	10.2	8.5	7.2	6.2	5.5	4.9	4.4	4.0	3.6	3.4	3.0	2.7	2.4	2.1	1.9	1.7	1.6
5 1/8 x 21	Total Load (plf)	10,537	7,287	5,206	3,759	2,833	2,207	1,763	1,439	1,194	1,005	857	738	618	511	426	358	303	259
	Live Load (plf)									1,144	900	721	586	483	403	339	288	247	214
	Min. End Bearing (in.)	12.7	11.0	9.4	8.0	6.9	6.0	5.4	4.8	4.4	4.0	3.7	3.4	3.1	2.7	2.4	2.2	2.0	1.8

TABLE 8 (Continued)

NOMINAL 6X 24F-V4 DOUGLAS-FIR GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}; F_{vx} = 265 \text{ psi}; E_x = 1.8 \times 10^6 \text{ psi}; F_{c\perp} = 650 \text{ psi}; \text{Load Duration Factor } C_D = 1.25$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
IJC 5 1/2 x 22	Total Load (plf)	12,303	8,409	6,061	4,377	3,299	2,570	2,054	1,676	1,391	1,171	998	860	747	633	528	445	377	322
	Live Load (plf)									1,111	889	723	596	497	418	356	305	263	
	Min. End Bearing (in.)	13.8	11.8	10.2	8.6	7.4	6.5	5.8	5.2	4.8	4.4	4.0	3.7	3.5	3.1	2.8	2.5	2.3	2.1
	Total Load (plf)	11,955	8,121	5,937	4,287	3,232	2,518	2,012	1,642	1,363	1,148	979	843	732	632	528	445	377	322
5 1/8 x 22 1/2	Live Load (plf)									1,107	886	721	594	495	417	355	304	263	
	Min. End Bearing (in.)	14.4	12.2	10.7	9.1	7.8	6.9	6.1	5.5	5.0	4.6	4.2	3.9	3.7	3.4	3.0	2.7	2.4	2.2
	Total Load (plf)	13,551	9,024	6,713	4,848	3,655	2,848	2,277	1,858	1,543	1,300	1,108	954	830	727	641	544	462	395
	Live Load (plf)										1,076	875	721	601	506	430	369	319	
5 1/8 x 24	Min. End Bearing (in.)	16.3	13.6	12.1	10.3	8.9	7.8	6.9	6.2	5.7	5.2	4.8	4.4	4.1	3.9	3.6	3.3	3.0	2.7
	Total Load (plf)	14,543	9,685	7,153	5,166	3,895	3,034	2,426	1,980	1,644	1,385	1,180	1,017	884	774	683	584	496	424
	Live Load (plf)										1,155	939	773	645	543	462	396	342	
	Min. End Bearing (in.)	16.3	13.6	12.1	10.2	8.8	7.7	6.9	6.2	5.6	5.2	4.7	4.4	4.1	3.8	3.6	3.3	3.0	2.7

Assumptions:

- Span is the on-center distance between supports and is valid for simple-span applications.
- These tables assume full lateral support of the compression side.
- The values represent the load carrying capacity of the beam in pounds per lineal foot (plf) of the beam length.
- The values are based on uniform loads and a deflection limit of L/240 under design live load and L/180 under design total load in dry-use conditions.
- The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 35 pcf).
- The designers must check both the total load and live load.
- Where the live load is blank, the total load governs the design.
- Do not use a product where designated "-" without further analysis by a design professional.

To Use:

- Select the on-center span required.
- Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
- Select a product that meets or exceeds both the design total and live loads.

TABLE 9

**NOMINAL 4X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: $\frac{100}{C}$ = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cL} = 740 \text{ psi}$; Load Duration Factor $C_D = 1.0$**

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
3 1/8 x 6 7/8	Total Load (plf)	610	333	191	118	77	-	-	-	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	441	226	131	82	55	-	-	-	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-
3 1/8 x 8 1/4	Total Load (plf)	880	561	332	207	136	94	-	-	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	762	390	226	142	95	67	-	-	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-	-
IJC 3 1/2 x 9 1/4	Total Load (plf)	1,240	790	526	328	217	150	107	79	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	1,202	616	356	224	150	106	77	58	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-
IJC 3 1/2 x 9 1/2	Total Load (plf)	1,308	834	571	356	236	163	117	86	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	1,302	667	386	243	163	114	83	63	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.0	1.6	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-
3 1/8 x 9 5/8	Total Load (plf)	1,199	764	529	331	219	152	109	80	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	619	358	226	151	106	77	58	58	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-
3 1/8 x 11	Total Load (plf)	1,567	1,000	692	497	330	229	165	122	92	70	-	-	-	-	-	-	-	-
	Live Load (plf)	924	535	337	226	158	116	87	67	53	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.7	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
IJC 3 1/2 x 11 1/4	Total Load (plf)	1,836	1,171	810	593	396	275	198	146	110	85	66	-	-	-	-	-	-	-
	Live Load (plf)	1,107	641	404	270	190	138	104	80	63	50	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.9	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
IJC 3 1/2 x 11 7/8	Total Load (plf)	2,046	1,306	904	661	467	325	234	173	131	101	79	-	-	-	-	-	-	-
	Live Load (plf)	1,302	754	475	318	223	163	122	94	74	59	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.2	2.5	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
3 1/8 x 12 3/8	Total Load (plf)	1,984	1,267	877	641	472	329	237	176	133	103	80	-	-	-	-	-	-	-
	Live Load (plf)	762	480	321	226	165	124	95	75	60	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.4	2.8	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-

TABLE 9 (Continued)

NOMINAL 4X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: μ = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cl} = 740 \text{ psi}$; Load Duration Factor $C_D = 1.0$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
3 1/8 x 13 3/4	Total Load (plf)	2,451	1,565	1,083	793	605	454	328	244	185	143	113	90	72	-	-	-	-	-
	Live Load (plf)			1,045	658	441	310	226	170	131	103	82	67	55	-	-	-	-	-
	Min. End Bearing (in.)	4.3	3.4	2.8	2.4	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
μC 3 1/2 x 14	Total Load (plf)	2,846	1,817	1,258	921	702	537	388	288	219	170	134	106	85	69	-	-	-	-
	Live Load (plf)			1,235	778	521	366	267	200	154	121	97	79	65	54	-	-	-	-
	Min. End Bearing (in.)	4.4	3.5	2.9	2.5	2.2	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
3 1/8 x 15 1/8	Total Load (plf)	2,967	1,895	1,312	961	733	577	439	327	249	193	152	122	98	80	65	-	-	-
	Live Load (plf)			876	587	412	300	226	174	137	109	89	73	61	52	-	-	-	-
	Min. End Bearing (in.)	5.2	4.1	3.4	2.9	2.6	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-
μC 3 1/2 x 16	Total Load (plf)	3,719	2,375	1,645	1,205	919	723	583	435	332	258	204	163	132	108	88	73	-	-
	Live Load (plf)			1,161	778	546	398	299	230	181	145	118	97	81	68	58	-	-	-
	Min. End Bearing (in.)	5.8	4.6	3.8	3.3	2.9	2.6	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-
3 1/8 x 16 1/2	Total Load (plf)	3,532	2,256	1,563	1,145	873	687	554	427	326	253	200	160	130	106	87	72	-	-
	Live Load (plf)			1,137	762	535	390	293	226	177	142	116	95	79	67	57	-	-	-
	Min. End Bearing (in.)	6.1	4.9	4.1	3.5	3.1	2.7	2.5	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-
3 1/8 x 17 7/8	Total Load (plf)	4,146	2,649	1,835	1,345	1,026	808	652	536	416	325	257	206	168	137	114	94	79	66
	Live Load (plf)				968	680	496	372	287	226	181	147	121	101	85	72	62	54	54
	Min. End Bearing (in.)	7.2	5.8	4.8	4.1	3.6	3.2	2.9	2.6	2.2	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5
μC 3 1/2 x 18	Total Load (plf)	4,709	3,008	2,084	1,527	1,166	918	740	607	476	371	294	236	192	157	130	108	91	76
	Live Load (plf)				1,107	778	567	426	328	258	207	168	138	115	97	83	71	61	61
	Min. End Bearing (in.)	7.3	5.8	4.9	4.2	3.6	3.2	2.9	2.6	2.3	1.9	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5
3 1/8 x 19 1/4	Total Load (plf)	4,810	3,073	2,129	1,560	1,191	938	757	622	518	408	323	260	212	174	144	120	101	85
	Live Load (plf)					849	619	465	358	282	226	183	151	126	106	90	77	67	67
	Min. End Bearing (in.)	8.3	6.7	5.6	4.8	4.2	3.7	3.3	3.0	2.8	2.4	2.0	1.8	1.6	1.5	1.5	1.5	1.5	1.5
μC 3 1/2 x 20	Total Load (plf)	5,816	3,716	2,575	1,887	1,441	1,135	912	747	622	514	408	328	267	220	183	153	128	108
	Live Load (plf)						1,067	778	584	450	354	283	230	190	158	133	113	97	84
	Min. End Bearing (in.)	9.0	7.2	6.0	5.1	4.5	4.0	3.6	3.2	3.0	2.7	2.3	2.0	1.8	1.6	1.5	1.5	1.5	1.5

TABLE 9 (Continued)

**NOMINAL 4X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: $\frac{b}{d} = 1$ = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cl} = 740 \text{ psi}$; Load Duration Factor $C_D = 1.0$**

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
3 1/8 x 20 5/8	Total Load (plf)	5,523	3,529	2,446	1,793	1,369	1,078	870	713	594	501	400	322	263	216	180	150	127	107
	Live Load (plf)						1,045	762	572	441	347	278	226	186	155	131	111	95	82
	Min. End Bearing (in.)	9.6	7.7	6.4	5.5	4.8	4.3	3.8	3.5	3.2	2.9	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5
3 1/8 x 22	Total Load (plf)	6,285	4,016	2,784	2,041	1,558	1,228	988	810	675	570	487	394	321	265	221	185	156	133
	Live Load (plf)							924	694	535	421	337	274	226	188	158	135	116	100
	Min. End Bearing (in.)	10.9	8.7	7.3	6.2	5.5	4.8	4.3	3.9	3.6	3.3	3.1	2.7	2.3	2.1	1.9	1.7	1.5	1.5
IJC 3 1/2 x 22	Total Load (plf)	7,039	4,498	3,118	2,286	1,745	1,370	1,100	902	751	635	542	441	360	297	247	207	175	148
	Live Load (plf)							1,035	778	599	471	377	307	253	211	178	151	129	112
	Min. End Bearing (in.)	10.9	8.7	7.3	6.2	5.5	4.8	4.3	3.9	3.6	3.3	3.0	2.7	2.3	2.1	1.9	1.7	1.5	1.5
3 1/8 x 23 3/8	Total Load (plf)	7,096	4,535	3,144	2,305	1,760	1,386	1,113	912	760	642	549	474	388	320	267	224	190	161
	Live Load (plf)							1,109	833	642	505	404	328	271	226	190	162	139	120
	Min. End Bearing (in.)	12.3	9.8	8.2	7.0	6.2	5.5	4.9	4.4	4.0	3.7	3.4	3.2	2.8	2.5	2.2	2.0	1.8	1.6
IJC 3 1/2 x 24	Total Load (plf)	8,379	5,355	3,712	2,722	2,075	1,625	1,305	1,070	892	754	644	557	471	389	325	273	231	197
	Live Load (plf)								1,010	778	612	490	398	328	274	230	196	168	145
	Min. End Bearing (in.)	13.0	10.4	8.6	7.4	6.5	5.7	5.1	4.6	4.2	3.9	3.6	3.3	3.0	2.7	2.4	2.2	1.9	1.8
3 1/8 x 24 3/4	Total Load (plf)	7,957	5,085	3,526	2,585	1,975	1,550	1,245	1,021	851	719	615	531	463	382	319	268	227	194
	Live Load (plf)								989	762	599	480	390	321	268	226	192	165	142
	Min. End Bearing (in.)	13.8	11.0	9.2	7.9	6.9	6.1	5.5	4.9	4.5	4.2	3.8	3.6	3.3	3.0	2.6	2.4	2.1	1.9

Assumptions:

- Span is the on-center distance between supports and is valid for simple-span applications.
- These tables assume full lateral support of the compression side.
- The values represent the load carrying capacity of the beam in pounds per linear foot (plf) of the beam length.
- The values are based on uniform loads and a deflection limit of L/360 under design live load and L/240 under design total load in dry-use conditions.
- The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 36 pcf).
- The designers must check both the total load and live load.
- Where the live load is blank, the total load governs the design.
- Do not use a product where designated "-" without further analysis by a design professional.

To Use:

- Select the on-center span required.
- Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
- Select a product that meets or exceeds both the design total and live loads.

TABLE 10

**NOMINAL 4X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER SNOW LOADS—LEGEND: μ_{JC} = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cL} = 740 \text{ psi}$; Load Duration Factor $C_D = 1.15$**

Width x Depth (in.)	Load Type	Span (ft)																42
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	
3 1/8 x 6 7/8	Total Load (plf)	702	446	256	159	105	72	-	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	661	338	196	123	83	58	-	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-
3 1/8 x 8 1/4	Total Load (plf)	1,013	646	445	278	184	127	91	67	-	-	-	-	-	-	-	-	-
	Live Load (plf)	585	338	213	143	100	73	55	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-
μ_{JC} 3 1/2 x 9 1/4	Total Load (plf)	1,427	910	630	441	292	203	146	108	81	62	-	-	-	-	-	-	-
	Live Load (plf)	534	337	225	158	115	87	67	53	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
μ_{JC} 3 1/2 x 9 1/2	Total Load (plf)	1,505	960	664	478	317	220	158	117	88	68	-	-	-	-	-	-	-
	Live Load (plf)	579	365	244	172	125	94	72	57	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
3 1/8 x 9 5/8	Total Load (plf)	1,380	880	609	444	295	205	147	109	82	63	-	-	-	-	-	-	-
	Live Load (plf)	538	338	227	159	116	87	67	53	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.4	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-
3 1/8 x 11	Total Load (plf)	1,803	1,151	797	583	443	308	222	165	125	97	76	60	-	-	-	-	-
	Live Load (plf)	505	338	238	173	130	100	79	63	51	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.1	2.5	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
μ_{JC} 3 1/2 x 11 1/4	Total Load (plf)	2,113	1,349	934	683	521	370	267	198	150	116	91	72	58	-	-	-	-
	Live Load (plf)	605	406	285	208	156	120	95	76	62	51	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.3	2.6	2.2	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
μ_{JC} 3 1/2 x 11 7/8	Total Load (plf)	2,355	1,503	1,041	762	581	436	315	234	178	138	108	86	69	-	-	-	-
	Live Load (plf)	712	477	335	244	183	141	111	89	72	60	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.7	2.9	2.4	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
3 1/8 x 12 3/8	Total Load (plf)	2,283	1,458	1,009	739	564	442	319	238	181	140	110	88	71	57	-	-	-
	Live Load (plf)	719	482	338	247	185	143	112	90	73	60	50	-	-	-	-	-	-
	Min. End Bearing (in.)	4.0	3.2	2.6	2.3	2.0	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-

TABLE 10 (Continued)

NOMINAL 4X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: μC = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cL} = 740 \text{ psi}$; *Load Duration Factor* $C_D = 1.15$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
3 1/8 x 13 3/4	Total Load (plf)	2,820	1,801	1,247	914	697	548	441	328	250	195	154	123	99	81	67	-	-	-
	Live Load (plf)				661	464	338	254	196	154	123	100	83	69	58	-	-	-	-
	Min. End Bearing (in.)	4.9	3.9	3.3	2.8	2.4	2.2	2.0	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-
μC 3 1/2 x 14	Total Load (plf)	3,275	2,091	1,449	1,061	810	637	514	389	297	231	182	146	118	96	79	66	54	-
	Live Load (plf)				782	549	400	301	232	182	146	119	98	81	69	58	50	-	-
	Min. End Bearing (in.)	5.1	4.1	3.4	2.9	2.5	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-
3 1/8 x 15 1/8	Total Load (plf)	3,414	2,181	1,511	1,107	845	665	536	440	336	262	207	166	135	110	91	76	63	-
	Live Load (plf)					618	451	338	261	205	164	133	110	92	77	66	56	-	-
	Min. End Bearing (in.)	5.9	4.7	4.0	3.4	3.0	2.6	2.4	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-
μC 3 1/2 x 16	Total Load (plf)	4,279	2,734	1,894	1,388	1,059	834	673	554	447	349	276	222	180	148	123	102	86	72
	Live Load (plf)					819	597	449	346	272	218	177	146	122	102	87	75	64	-
	Min. End Bearing (in.)	6.6	5.3	4.4	3.8	3.3	2.9	2.7	2.4	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5
3 1/8 x 16 1/2	Total Load (plf)	4,064	2,596	1,799	1,318	1,006	792	639	526	438	342	271	218	178	146	121	101	85	71
	Live Load (plf)						585	439	338	266	213	173	143	119	100	85	73	63	-
	Min. End Bearing (in.)	7.1	5.6	4.7	4.0	3.5	3.1	2.8	2.6	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5
3 1/8 x 17 7/8	Total Load (plf)	4,770	3,048	2,112	1,548	1,182	931	752	619	517	436	347	280	228	188	156	131	110	93
	Live Load (plf)						744	559	430	338	271	220	182	151	128	108	93	80	-
	Min. End Bearing (in.)	8.3	6.6	5.5	4.7	4.1	3.7	3.3	3.0	2.8	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5
μC 3 1/2 x 18	Total Load (plf)	5,418	3,462	2,399	1,759	1,343	1,058	854	700	583	493	398	320	261	215	179	150	126	107
	Live Load (plf)						851	639	492	387	310	252	208	173	146	124	106	92	-
	Min. End Bearing (in.)	8.4	6.7	5.6	4.8	4.2	3.7	3.4	3.0	2.8	2.6	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5
3 1/8 x 19 1/4	Total Load (plf)	5,534	3,536	2,451	1,797	1,372	1,081	873	718	598	505	432	352	287	237	197	166	140	119
	Live Load (plf)						698	538	423	338	275	227	189	159	135	116	100	-	-
	Min. End Bearing (in.)	9.6	7.7	6.4	5.5	4.8	4.3	3.8	3.5	3.2	2.9	2.7	2.4	2.1	1.9	1.7	1.5	1.5	1.5
μC 3 1/2 x 20	Total Load (plf)	6,691	4,276	2,964	2,173	1,660	1,308	1,052	862	718	607	519	443	362	299	249	209	177	150
	Live Load (plf)								675	531	425	346	285	237	200	170	146	126	-
	Min. End Bearing (in.)	10.4	8.3	6.9	5.9	5.2	4.6	4.1	3.7	3.4	3.1	2.9	2.7	2.3	2.1	1.9	1.7	1.5	1.5

TABLE 10 (Continued)

NOMINAL 4X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: μ = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cL} = 740 \text{ psi}$; *Load Duration Factor $C_D = 1.15$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
3 1/8 x 20 5/8	Total Load (plf)	6,354	4,061	2,815	2,064	1,576	1,242	1,003	822	685	579	495	428	356	294	245	206	174	148
	Live Load (plf)									661	520	416	338	279	233	196	167	143	123
	Min. End Bearing (in.)	11.0	8.8	7.3	6.3	5.5	4.9	4.4	4.0	3.6	3.3	3.1	2.9	2.6	2.3	2.0	1.8	1.6	1.5
3 1/8 x 22	Total Load (plf)	7,230	4,621	3,204	2,349	1,795	1,414	1,139	934	778	658	563	486	424	359	300	252	214	182
	Live Load (plf)									631	505	411	338	282	238	202	173	150	
	Min. End Bearing (in.)	12.5	10.0	8.4	7.2	6.3	5.6	5.0	4.5	4.1	3.8	3.5	3.3	3.1	2.8	2.5	2.2	2.0	1.8
μ 3 1/2 x 22	Total Load (plf)	8,098	5,176	3,588	2,631	2,010	1,578	1,268	1,040	867	733	627	541	472	402	336	283	240	204
	Live Load (plf)									707	566	460	379	316	266	226	194	168	
	Min. End Bearing (in.)	12.5	10.0	8.4	7.2	6.3	5.6	5.0	4.5	4.1	3.8	3.5	3.2	3.0	2.8	2.5	2.2	2.0	1.8
3 1/8 x 23 3/8	Total Load (plf)	8,163	5,218	3,618	2,653	2,027	1,596	1,283	1,052	877	742	634	548	478	420	362	305	259	221
	Live Load (plf)											606	493	406	338	285	242	208	180
	Min. End Bearing (in.)	14.2	11.3	9.4	8.1	7.1	6.3	5.6	5.1	4.6	4.3	4.0	3.7	3.4	3.2	3.0	2.7	2.4	2.2
μ 3 1/2 x 24	Total Load (plf)	9,639	6,161	4,272	3,133	2,389	1,872	1,504	1,234	1,029	870	744	643	561	493	436	371	315	269
	Live Load (plf)											735	597	492	410	346	294	252	218
	Min. End Bearing (in.)	14.9	11.9	9.9	8.5	7.4	6.6	5.9	5.3	4.9	4.5	4.1	3.8	3.6	3.4	3.2	2.9	2.6	2.4
3 1/8 x 24 3/4	Total Load (plf)	9,153	5,851	4,057	2,976	2,274	1,786	1,435	1,177	982	830	710	614	536	471	417	364	310	265
	Live Load (plf)												585	482	402	338	288	247	213
	Min. End Bearing (in.)	15.9	12.7	10.6	9.1	7.9	7.0	6.3	5.7	5.2	4.8	4.4	4.1	3.8	3.6	3.4	3.2	2.8	2.6

Assumptions:

- Span is the on-center distance between supports and is valid for simple-span applications.
- These tables assume full lateral support of the compression side.
- The values represent the load carrying capacity of the beam in pounds per linear foot (plf) of the beam length.
- The values are based on uniform loads and a deflection limit of L/240 under design live load and L/180 under design total load in dry-use conditions.
- The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 36 pcf).
- The designers must check both the total load and live load.
- Where the live load is blank, the total load governs the design.
- Do not use a product where designated " " without further analysis by a design professional.

To Use:

- Select the on-center span required.
- Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
- Select a product that meets or exceeds both the design total and live loads.

TABLE 11

NOMINAL 4X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: $\square$ = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cl} = 740 \text{ psi}$; Load Duration Factor $C_D = 1.25$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
3 1/8 x 6 7/8	Total Load (plf)	764	446	256	159	105	72	-	-	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	661	338	196	123	83	58	-	-	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-	-
3 1/8 x 8 1/4	Total Load (plf)	1,101	703	445	278	184	127	91	67	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	585	338	213	143	100	73	55	-	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-
UC 3 1/2 x 9 1/4	Total Load (plf)	1,552	990	685	441	292	203	146	108	81	62	-	-	-	-	-	-	-	-
	Live Load (plf)	923	534	337	225	158	115	87	67	53	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.4	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
UC 3 1/2 x 9 1/2	Total Load (plf)	1,637	1,045	723	478	317	220	158	117	88	68	-	-	-	-	-	-	-	-
	Live Load (plf)	1,000	579	365	244	172	125	94	72	57	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.5	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
3 1/8 x 9 5/8	Total Load (plf)	1,500	957	663	444	295	205	147	109	82	63	-	-	-	-	-	-	-	-
	Live Load (plf)	929	538	338	227	159	116	87	67	53	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.6	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
3 1/8 x 11	Total Load (plf)	1,961	1,252	867	634	443	308	222	165	125	97	76	60	-	-	-	-	-	-
	Live Load (plf)	802	505	338	238	173	130	100	79	63	51	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.4	2.7	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-
UC 3 1/2 x 11 1/4	Total Load (plf)	2,297	1,467	1,016	744	531	370	267	198	150	116	91	72	58	-	-	-	-	-
	Live Load (plf)	961	605	406	285	208	156	120	95	76	62	51	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.6	2.9	2.4	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
UC 3 1/2 x 11 7/8	Total Load (plf)	2,560	1,635	1,132	829	626	436	315	234	178	138	108	86	69	-	-	-	-	-
	Live Load (plf)	1,131	712	477	335	244	183	141	111	89	72	60	-	-	-	-	-	-	-
	Min. End Bearing (in.)	4.0	3.2	2.6	2.3	2.0	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
3 1/8 x 12 3/8	Total Load (plf)	2,483	1,586	1,098	804	613	442	319	238	181	140	110	88	71	57	-	-	-	-
	Live Load (plf)	719	482	338	247	185	143	112	90	73	60	50	-	-	-	-	-	-	-
	Min. End Bearing (in.)	4.3	3.4	2.9	2.5	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-

TABLE 11 (Continued)

NOMINAL 4X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: μC = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cl} = 740 \text{ psi}$; Load Duration Factor $C_D = 1.25$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
3 1/8 x 13 3/4	Total Load (plf)	3,066	1,959	1,357	994	759	597	441	328	250	195	154	123	99	81	67	-	-	-
	Live Load (plf)				987	661	464	338	254	196	154	123	100	83	69	58	-	-	-
	Min. End Bearing (in.)	5.3	4.3	3.5	3.0	2.7	2.4	2.0	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-
μC 3 1/2 x 14	Total Load (plf)	3,561	2,274	1,576	1,154	881	694	521	389	297	231	182	146	118	96	79	66	54	-
	Live Load (plf)					782	549	400	301	232	182	146	119	98	81	69	58	50	-
	Min. End Bearing (in.)	5.5	4.4	3.7	3.2	2.8	2.5	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-
3 1/8 x 15 1/8	Total Load (plf)	3,712	2,371	1,643	1,204	919	724	584	440	336	262	207	166	135	110	91	76	63	-
	Live Load (plf)					880	618	451	338	261	205	164	133	110	92	77	66	56	-
	Min. End Bearing (in.)	6.4	5.2	4.3	3.7	3.2	2.9	2.6	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-
μC 3 1/2 x 16	Total Load (plf)	4,653	2,973	2,060	1,510	1,153	908	733	584	447	349	276	222	180	148	123	102	86	72
	Live Load (plf)						819	597	449	346	272	218	177	146	122	102	87	75	64
	Min. End Bearing (in.)	7.2	5.8	4.8	4.1	3.6	3.2	2.9	2.5	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5
3 1/8 x 16 1/2	Total Load (plf)	4,418	2,823	1,957	1,434	1,095	862	696	573	438	342	271	218	178	146	121	101	85	71
	Live Load (plf)						802	585	439	338	266	213	173	143	119	100	85	73	63
	Min. End Bearing (in.)	7.7	6.1	5.1	4.4	3.8	3.4	3.1	2.8	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5
3 1/8 x 17 7/8	Total Load (plf)	5,186	3,314	2,297	1,684	1,286	1,013	818	674	560	437	347	280	228	188	156	131	110	93
	Live Load (plf)							744	559	430	338	271	220	182	151	128	108	93	80
	Min. End Bearing (in.)	9.0	7.2	6.0	5.1	4.5	4.0	3.6	3.3	3.0	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5
μC 3 1/2 x 18	Total Load (plf)	5,891	3,764	2,609	1,913	1,461	1,151	929	762	635	500	398	320	261	215	179	150	126	107
	Live Load (plf)							851	639	492	387	310	252	208	173	146	124	106	92
	Min. End Bearing (in.)	9.1	7.3	6.1	5.2	4.6	4.1	3.6	3.3	3.0	2.6	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5
3 1/8 x 19 1/4	Total Load (plf)	6,016	3,845	2,666	1,954	1,493	1,176	950	782	651	549	436	352	287	237	197	166	140	119
	Live Load (plf)							929	698	538	423	338	275	227	189	159	135	116	100
	Min. End Bearing (in.)	10.4	8.3	7.0	6.0	5.2	4.6	4.2	3.8	3.5	3.2	2.7	2.4	2.1	1.9	1.7	1.5	1.5	1.5
μC 3 1/2 x 20	Total Load (plf)	7,274	4,649	3,223	2,363	1,805	1,423	1,144	938	782	661	549	443	362	299	249	209	177	150
	Live Load (plf)								877	675	531	425	346	285	237	200	170	146	126
	Min. End Bearing (in.)	11.3	9.0	7.5	6.4	5.6	5.0	4.5	4.1	3.7	3.4	3.1	2.7	2.3	2.1	1.9	1.7	1.5	1.5

TABLE 11 (Continued)

**NOMINAL 4X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: $\text{IJC} = \text{I-JOIST COMPATIBLE (IJC) SIZES}$
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{c-L} = 740 \text{ psi}$; *Load Duration Factor $C_D = 1.25$***

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
3 1/8 x 20 5/8	Total Load (plf)	6,908	4,415	3,061	2,245	1,715	1,352	1,092	895	746	631	539	435	356	294	245	206	174	148
	Live Load (plf)								858	661	520	416	338	279	233	196	167	143	123
	Min. End Bearing (in.)	12.0	9.6	8.0	6.8	6.0	5.3	4.8	4.3	4.0	3.6	3.4	2.9	2.6	2.3	2.0	1.8	1.6	1.5
3 1/8 x 22	Total Load (plf)	7,860	5,024	3,484	2,555	1,952	1,539	1,239	1,016	847	717	613	530	434	359	300	252	214	182
	Live Load (plf)									802	631	505	411	338	282	238	202	173	150
	Min. End Bearing (in.)	13.6	10.9	9.1	7.8	6.8	6.1	5.4	4.9	4.5	4.1	3.8	3.5	3.1	2.8	2.5	2.2	2.0	1.8
IJC 3 1/2 x 22	Total Load (plf)	8,804	5,627	3,902	2,862	2,186	1,717	1,380	1,132	944	798	683	590	486	402	336	283	240	204
	Live Load (plf)									899	707	566	460	379	316	266	226	194	168
	Min. End Bearing (in.)	13.6	10.9	9.1	7.8	6.8	6.0	5.4	4.9	4.5	4.1	3.8	3.5	3.1	2.8	2.5	2.2	2.0	1.8
3 1/8 x 23 3/8	Total Load (plf)	8,875	5,673	3,934	2,886	2,205	1,737	1,396	1,145	955	808	691	598	521	433	362	305	259	221
	Live Load (plf)										757	606	493	406	338	285	242	208	180
	Min. End Bearing (in.)	15.4	12.3	10.3	8.8	7.7	6.8	6.1	5.5	5.0	4.6	4.3	4.0	3.7	3.3	3.0	2.7	2.4	2.2
IJC 3 1/2 x 24	Total Load (plf)	10,479	6,699	4,646	3,408	2,599	2,037	1,637	1,343	1,120	947	811	701	612	526	440	371	315	269
	Live Load (plf)										918	735	597	492	410	346	294	252	218
	Min. End Bearing (in.)	16.2	13.0	10.8	9.3	8.1	7.2	6.4	5.8	5.3	4.9	4.5	4.2	3.9	3.6	3.2	2.9	2.6	2.4
3 1/8 x 24 3/4	Total Load (plf)	9,951	6,362	4,412	3,236	2,473	1,943	1,562	1,281	1,069	904	774	669	584	513	432	364	310	265
	Live Load (plf)										899	719	585	482	402	338	288	247	213
	Min. End Bearing (in.)	17.2	13.8	11.5	9.9	8.6	7.6	6.8	6.2	5.6	5.2	4.8	4.5	4.2	3.9	3.5	3.2	2.8	2.6

Assumptions:

- Span is the on-center distance between supports and is valid for simple-span applications.
- These tables assume full lateral support of the compression side.
- The values represent the load carrying capacity of the beam in pounds per lineal foot (plf) of the beam length.
- The values are based on uniform loads and a deflection limit of L/240 under design live load and L/180 under design total load in dry-use conditions.
- The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 36 pcf).
- The designers must check both the total load and live load.
- Where the live load is blank, the total load governs the design.
- Do not use a product where designated " " without further analysis by a design professional.

To Use:

- Select the on-center span required.
- Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
- Select a product that meets or exceeds both the design total and live loads.

TABLE 12

**NOMINAL 6X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: $\frac{100}{C}$ = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cl} = 740 \text{ psi}$; Load Duration Factor $C_D = 1.0$**

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
5 1/8 x 6 7/8	Total Load (plf)	1,001	546	312	193	127	86	-	-	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	723	370	214	135	90	63	-	-	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-	-	-
5 1/8 x 8 1/4	Total Load (plf)	1,443	920	545	339	224	154	109	80	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	1,249	640	370	233	156	110	80	60	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-
IJC 5 1/2 x 9 1/4	Total Load (plf)	1,948	1,242	827	516	342	236	169	124	92	70	-	-	-	-	-	-	-	-
	Live Load (plf)	1,889	967	560	353	236	166	121	91	70	55	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
IJC 5 1/2 x 9 1/2	Total Load (plf)	2,055	1,311	897	560	371	256	183	135	101	76	-	-	-	-	-	-	-	-
	Live Load (plf)	2,047	1,048	606	382	256	180	131	98	76	60	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.0	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
5 1/8 x 9 5/8	Total Load (plf)	1,966	1,254	867	543	360	249	178	131	98	74	-	-	-	-	-	-	-	-
	Live Load (plf)	1,016	588	370	248	174	127	95	73	58	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
5 1/8 x 11	Total Load (plf)	2,570	1,640	1,134	815	541	376	270	199	150	115	89	70	-	-	-	-	-	-
	Live Load (plf)	1,516	877	552	370	260	189	142	110	86	69	56	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.7	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-
IJC 5 1/2 x 11 1/4	Total Load (plf)	2,885	1,841	1,274	932	622	432	311	230	173	133	103	81	64	-	-	-	-	-
	Live Load (plf)	1,740	1,007	634	425	298	218	163	126	99	79	64	53	-	-	-	-	-	-
	Min. End Bearing (in.)	2.9	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-
IJC 5 1/2 x 11 7/8	Total Load (plf)	3,215	2,052	1,420	1,039	733	510	367	272	206	158	124	97	77	62	-	-	-	-
	Live Load (plf)	2,047	1,184	746	500	351	256	192	148	116	93	76	62	52	-	-	-	-	-
	Min. End Bearing (in.)	3.2	2.5	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
5 1/8 x 12 3/8	Total Load (plf)	3,254	2,077	1,438	1,052	775	539	389	288	218	168	132	104	83	67	-	-	-	-
	Live Load (plf)	1,249	787	527	370	270	203	156	123	98	80	66	55	-	-	-	-	-	-
	Min. End Bearing (in.)	3.4	2.8	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-

TABLE 12 (Continued)

NOMINAL 6X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: μ = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cl} = 740 \text{ psi}$; *Load Duration Factor $C_D = 1.0$*

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
5 1/8 x 13 3/4	Total Load (plf)	4,020	2,566	1,777	1,301	992	744	538	399	304	235	185	147	118	95	78	63	-	-
	Live Load (plf)			1,713	1,079	723	508	370	278	214	168	135	110	90	75	63	54	-	-
	Min. End Bearing (in.)	4.3	3.4	2.8	2.4	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-
μ 5 1/2 x 14	Total Load (plf)	4,472	2,855	1,977	1,447	1,104	843	610	453	345	267	210	167	134	109	89	72	59	-
	Live Load (plf)			1,941	1,222	819	575	419	315	243	191	153	124	102	85	72	61	52	-
	Min. End Bearing (in.)	4.4	3.5	2.9	2.5	2.2	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-
5 1/8 x 15 1/8	Total Load (plf)	4,866	3,107	2,152	1,576	1,202	942	719	536	408	317	250	200	161	131	107	88	73	60
	Live Load (plf)			1,436	962	676	493	370	285	224	180	146	120	100	84	72	62	53	53
	Min. End Bearing (in.)	5.2	4.1	3.4	2.9	2.6	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
μ 5 1/2 x 16	Total Load (plf)	5,845	3,733	2,585	1,894	1,438	1,125	902	683	521	405	320	256	207	169	139	115	95	79
	Live Load (plf)			1,824	1,222	858	626	470	362	285	228	185	153	127	107	91	78	68	68
	Min. End Bearing (in.)	5.8	4.6	3.8	3.3	2.9	2.5	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 16 1/2	Total Load (plf)	5,793	3,700	2,563	1,877	1,429	1,118	897	700	534	415	328	263	213	174	143	119	99	82
	Live Load (plf)			1,864	1,249	877	640	480	370	291	233	189	156	130	110	93	80	69	69
	Min. End Bearing (in.)	6.1	4.9	4.1	3.5	3.1	2.7	2.4	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 17 7/8	Total Load (plf)	6,800	4,344	3,010	2,205	1,672	1,308	1,050	859	683	532	422	338	275	225	186	155	130	109
	Live Load (plf)				1,588	1,115	813	611	471	370	296	241	199	165	139	119	102	88	88
	Min. End Bearing (in.)	7.2	5.8	4.8	4.1	3.6	3.2	2.8	2.6	2.2	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5
μ 5 1/2 x 18	Total Load (plf)	7,400	4,727	3,275	2,391	1,813	1,418	1,138	932	749	584	462	371	302	247	204	170	142	120
	Live Load (plf)				1,740	1,222	891	669	516	406	325	264	218	181	153	130	111	96	96
	Min. End Bearing (in.)	7.3	5.8	4.9	4.2	3.6	3.2	2.9	2.6	2.3	1.9	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 19 1/4	Total Load (plf)	7,888	5,040	3,492	2,551	1,934	1,514	1,215	995	828	669	530	427	347	285	237	197	166	140
	Live Load (plf)						1,393	1,016	763	588	462	370	301	248	207	174	148	127	110
	Min. End Bearing (in.)	8.3	6.7	5.6	4.8	4.1	3.7	3.3	3.0	2.7	2.4	2.0	1.8	1.6	1.5	1.5	1.5	1.5	1.5
μ 5 1/2 x 20	Total Load (plf)	9,139	5,839	4,042	2,939	2,229	1,745	1,401	1,147	955	807	641	516	420	346	287	240	202	170
	Live Load (plf)						1,677	1,222	918	707	556	445	362	298	249	210	178	153	132
	Min. End Bearing (in.)	9.0	7.2	6.0	5.1	4.4	3.9	3.5	3.2	2.9	2.7	2.3	2.0	1.8	1.6	1.5	1.5	1.5	1.5

TABLE 12 (Continued)

**NOMINAL 6X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN FLOOR BEAMS—LEGEND: μ_c = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cl} = 740 \text{ psi}$; Load Duration Factor $C_D = 1.0$**

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
5 1/8 x 20 5/8	Total Load (plf)	9,057	5,787	4,011	2,920	2,214	1,733	1,392	1,140	949	802	656	529	431	355	295	247	208	176
	Live Load (plf)						1,713	1,249	938	723	569	455	370	305	254	214	182	156	135
	Min. End Bearing (in.)	9.6	7.7	6.4	5.4	4.7	4.2	3.7	3.4	3.1	2.8	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5
5 1/8 x 22	Total Load (plf)	10,307	6,586	4,555	3,313	2,513	1,968	1,580	1,295	1,078	911	779	646	527	435	362	303	256	217
	Live Load (plf)						1,516	1,139	877	690	552	449	370	309	260	221	189	164	164
	Min. End Bearing (in.)	10.9	8.7	7.3	6.2	5.4	4.7	4.2	3.8	3.5	3.2	3.0	2.7	2.3	2.1	1.9	1.7	1.5	1.5
μc 5 1/2 x 22	Total Load (plf)	11,061	7,068	4,871	3,543	2,687	2,104	1,690	1,384	1,153	974	833	693	565	466	388	326	275	233
	Live Load (plf)							1,627	1,222	941	740	593	482	397	331	279	237	203	176
	Min. End Bearing (in.)	10.9	8.7	7.2	6.1	5.3	4.7	4.2	3.8	3.5	3.2	3.0	2.7	2.3	2.1	1.9	1.7	1.5	1.5
5 1/8 x 23 3/8	Total Load (plf)	11,638	7,437	5,128	3,730	2,830	2,216	1,780	1,459	1,216	1,027	878	758	636	525	438	368	311	265
	Live Load (plf)								1,366	1,052	828	663	539	444	370	312	265	227	196
	Min. End Bearing (in.)	12.3	9.8	8.2	6.9	6.0	5.3	4.8	4.3	3.9	3.6	3.4	3.1	2.8	2.5	2.2	2.0	1.8	1.6
μc 5 1/2 x 24	Total Load (plf)	13,167	8,406	5,774	4,201	3,187	2,496	2,005	1,643	1,369	1,157	989	855	740	612	510	429	363	309
	Live Load (plf)								1,587	1,222	961	770	626	516	430	362	308	264	228
	Min. End Bearing (in.)	13.0	10.4	8.6	7.3	6.3	5.6	5.0	4.5	4.1	3.8	3.5	3.3	3.0	2.7	2.4	2.2	1.9	1.8
5 1/8 x 24 3/4	Total Load (plf)	13,049	8,340	5,734	4,172	3,165	2,480	1,992	1,633	1,361	1,150	983	850	740	627	523	440	373	318
	Live Load (plf)								1,622	1,249	982	787	640	527	439	370	315	270	233
	Min. End Bearing (in.)	13.8	11.0	9.1	7.8	6.7	6.0	5.3	4.8	4.4	4.1	3.7	3.5	3.3	3.0	2.6	2.4	2.1	1.9

Assumptions:

- Span is the on-center distance between supports and is valid for simple-span applications.
- These tables assume full lateral support of the compression side.
- The values represent the load carrying capacity of the beam in pounds per linear foot (plf) of the beam length.
- The values are based on uniform loads and a deflection limit of L/360 under design live load and L/240 under design total load in dry-use conditions.
- The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 36 pcf).
- The designers must check both the total load and live load.
- Where the live load is blank, the total load governs the design.
- Do not use a product where designated " " without further analysis by a design professional.

To Use:

- Select the on-center span required.
- Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
- Select a product that meets or exceeds both the design total and live loads.

TABLE 13

NOMINAL 6X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER SNOW LOADS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_v = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cL} = 740 \text{ psi}$; Load Duration Factor $C_D = 1.15$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
5 1/8 x 6 7/8	Total Load (plf)	1,152	731	420	261	172	118	84	61	-	-	-	-	-	-	-	-	-	-
	Live Load (plf)	1,084	555	321	202	136	95	69	52	-	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-
5 1/8 x 8 1/4	Total Load (plf)	1,661	1,059	730	456	302	209	149	110	82	62	-	-	-	-	-	-	-	-
	Live Load (plf)	959	555	350	234	164	120	90	69	55	-	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-
IJC 5 1/2 x 9 1/4	Total Load (plf)	2,242	1,430	989	692	460	319	229	169	127	97	75	59	-	-	-	-	-	-
	Live Load (plf)	840	529	354	249	181	136	105	83	66	54	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-
IJC 5 1/2 x 9 1/2	Total Load (plf)	2,365	1,509	1,044	751	499	346	249	184	139	106	82	65	-	-	-	-	-	-
	Live Load (plf)	910	573	384	270	196	148	114	89	72	58	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-
5 1/8 x 9 5/8	Total Load (plf)	2,263	1,444	999	728	484	336	242	178	135	103	80	63	-	-	-	-	-	-
	Live Load (plf)	882	555	372	261	190	143	110	87	69	56	-	-	-	-	-	-	-	-
	Min. End Bearing (in.)	2.4	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-
5 1/8 x 11	Total Load (plf)	2,957	1,888	1,307	956	726	506	365	271	205	158	124	98	78	63	-	-	-	-
	Live Load (plf)	829	555	390	284	214	164	129	104	84	69	58	-	-	-	-	-	-	-
	Min. End Bearing (in.)	3.1	2.5	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-
IJC 5 1/2 x 11 1/4	Total Load (plf)	3,320	2,119	1,467	1,074	818	581	420	311	236	183	143	113	91	73	59	-	-	-
	Live Load (plf)	951	637	448	326	245	189	149	119	97	80	66	56	-	-	-	-	-	-
	Min. End Bearing (in.)	3.3	2.6	2.2	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-
IJC 5 1/2 x 11 7/8	Total Load (plf)	3,700	2,362	1,635	1,197	913	686	495	368	280	217	170	135	109	88	71	58	-	-
	Live Load (plf)	1,119	750	526	384	288	222	175	140	114	94	78	66	56	-	-	-	-	-
	Min. End Bearing (in.)	3.7	2.9	2.4	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-
5 1/8 x 12 3/8	Total Load (plf)	3,745	2,391	1,656	1,212	924	724	524	390	296	230	181	144	116	94	77	63	52	-
	Live Load (plf)	1,180	790	555	405	304	234	184	147	120	99	82	69	59	51	-	-	-	-
	Min. End Bearing (in.)	4.0	3.2	2.6	2.3	2.0	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-

TABLE 13 (Continued)

NOMINAL 6X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER SNOW LOADS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (JJC) SIZES
 $F_{bx} = 2,400 \text{ psi}; F_{vx} = 300 \text{ psi}; E_x = 1.8 \times 10^6 \text{ psi}; F_{cl} = 740 \text{ psi}; \text{Load Duration Factor } C_D = 1.15$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
5 1/8 x 13 3/4	Total Load (plf)	4,625	2,954	2,046	1,498	1,143	899	722	538	411	319	252	202	163	133	109	90	75	62
	Live Load (plf)					1,084	761	555	417	321	253	202	164	136	113	95	81	69	60
	Min. End Bearing (in.)	4.9	3.9	3.3	2.8	2.4	2.2	2.0	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
μC 5 1/2 x 14	Total Load (plf)	5,146	3,287	2,276	1,667	1,272	997	800	611	466	362	286	229	185	151	125	103	86	71
	Live Load (plf)					1,228	863	629	472	364	286	229	186	154	128	108	92	79	68
	Min. End Bearing (in.)	5.1	4.1	3.4	2.9	2.5	2.2	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 15 1/8	Total Load (plf)	5,598	3,576	2,477	1,815	1,385	1,086	871	713	551	429	340	273	221	181	150	124	104	87
	Live Load (plf)					1,014	739	555	428	336	269	219	180	150	127	108	92	80	80
	Min. End Bearing (in.)	5.9	4.7	4.0	3.4	3.0	2.6	2.3	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
μC 5 1/2 x 16	Total Load (plf)	6,725	4,296	2,977	2,181	1,657	1,297	1,041	852	702	548	434	349	284	233	193	160	134	113
	Live Load (plf)					1,288	939	705	543	427	342	278	229	191	161	137	117	101	101
	Min. End Bearing (in.)	6.6	5.3	4.4	3.8	3.3	2.9	2.6	2.4	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 16 1/2	Total Load (plf)	6,665	4,258	2,950	2,162	1,646	1,289	1,034	847	705	561	445	358	291	239	198	165	139	117
	Live Load (plf)						959	721	555	437	350	284	234	195	164	140	120	104	104
	Min. End Bearing (in.)	7.1	5.6	4.7	4.0	3.5	3.1	2.8	2.5	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 17 7/8	Total Load (plf)	7,824	4,999	3,464	2,539	1,926	1,508	1,211	992	826	698	570	459	374	308	256	214	180	153
	Live Load (plf)								916	706	555	444	361	298	248	209	178	152	132
	Min. End Bearing (in.)	8.3	6.6	5.5	4.7	4.1	3.6	3.3	2.9	2.7	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5
μC 5 1/2 x 18	Total Load (plf)	8,514	5,440	3,770	2,754	2,088	1,635	1,313	1,075	896	756	625	503	410	338	281	235	198	168
	Live Load (plf)								1,004	773	608	487	396	326	272	229	195	167	144
	Min. End Bearing (in.)	8.4	6.7	5.6	4.8	4.2	3.7	3.3	3.0	2.7	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5
5 1/8 x 19 1/4	Total Load (plf)	9,075	5,799	4,020	2,937	2,228	1,744	1,401	1,148	956	808	690	577	471	389	324	271	229	195
	Live Load (plf)								1,144	882	693	555	451	372	310	261	222	190	164
	Min. End Bearing (in.)	9.6	7.7	6.4	5.5	4.8	4.2	3.8	3.4	3.1	2.9	2.6	2.4	2.1	1.9	1.7	1.5	1.5	1.5
μC 5 1/2 x 20	Total Load (plf)	10,514	6,719	4,653	3,385	2,567	2,011	1,615	1,323	1,103	932	796	688	569	470	392	329	278	236
	Live Load (plf)									1,061	834	668	543	448	373	314	267	229	198
	Min. End Bearing (in.)	10.4	8.3	6.9	5.9	5.1	4.5	4.0	3.7	3.3	3.1	2.8	2.6	2.3	2.1	1.9	1.7	1.5	1.5

TABLE 13 (Continued)

NOMINAL 6X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER SNOW LOADS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}; F_{vx} = 300 \text{ psi}; E_x = 1.8 \times 10^6 \text{ psi}; F_{cl} = 740 \text{ psi}; \text{Load Duration Factor } C_D = 1.15$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
5 1/8 x 20 5/8	Total Load (plf)	10,420	6,659	4,616	3,362	2,550	1,997	1,604	1,315	1,096	926	792	684	583	482	402	338	286	243
	Live Load (plf)								1,084	853	683	555	457	381	321	273	234	202	
	Min. End Bearing (in.)	11.0	8.8	7.3	6.3	5.4	4.8	4.3	3.9	3.6	3.3	3.0	2.8	2.6	2.3	2.0	1.8	1.6	1.5
5 1/8 x 22	Total Load (plf)	11,858	7,579	5,242	3,814	2,894	2,267	1,821	1,493	1,244	1,052	900	777	677	589	492	414	351	299
	Live Load (plf)								1,035	829	674	555	463	390	332	284	246		
	Min. End Bearing (in.)	12.5	10.0	8.3	7.1	6.2	5.4	4.9	4.4	4.0	3.7	3.4	3.2	3.0	2.8	2.5	2.2	2.0	1.8
μC 5 1/2 x 22	Total Load (plf)	12,725	8,133	5,606	4,079	3,095	2,424	1,948	1,597	1,331	1,125	962	831	724	632	528	444	376	321
	Live Load (plf)								1,111	889	723	596	497	418	356	305	263		
	Min. End Bearing (in.)	12.5	10.0	8.3	7.1	6.1	5.4	4.9	4.4	4.0	3.7	3.4	3.2	3.0	2.8	2.5	2.2	2.0	1.8
5 1/8 x 23 3/8	Total Load (plf)	13,388	8,557	5,902	4,295	3,259	2,553	2,052	1,682	1,402	1,186	1,014	877	764	671	594	500	425	363
	Live Load (plf)											994	808	666	555	468	398	341	294
	Min. End Bearing (in.)	14.2	11.3	9.4	8.0	6.9	6.1	5.5	5.0	4.5	4.2	3.9	3.6	3.4	3.1	3.0	2.7	2.4	2.2
μC 5 1/2 x 24	Total Load (plf)	15,147	9,672	6,645	4,836	3,670	2,876	2,311	1,895	1,580	1,336	1,143	988	861	757	669	583	495	423
	Live Load (plf)												939	773	645	543	462	396	342
	Min. End Bearing (in.)	14.9	11.9	9.8	8.4	7.3	6.4	5.8	5.2	4.8	4.4	4.0	3.8	3.5	3.3	3.1	2.9	2.6	2.4
5 1/8 x 24 3/4	Total Load (plf)	15,011	9,596	6,599	4,803	3,645	2,856	2,295	1,882	1,570	1,327	1,136	982	856	752	666	593	508	434
	Live Load (plf)												959	790	659	555	472	405	350
	Min. End Bearing (in.)	15.9	12.7	10.5	8.9	7.8	6.9	6.1	5.6	5.1	4.7	4.3	4.0	3.7	3.5	3.3	3.1	2.8	2.6

Assumptions:

- Span is the on-center distance between supports and is valid for simple-span applications.
- These tables assume full lateral support of the compression side.
- The values represent the load carrying capacity of the beam in pounds per linear foot (plf) of the beam length.
- The values are based on uniform loads and a deflection limit of L/240 under design live load and L/180 under design total load in dry-use conditions.
- The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 36 pcf).
- The designers must check both the total load and live load.
- Where the live load is blank, the total load governs the design.
- Do not use a product where designated " " without further analysis by a design professional.

To Use:

- Select the on-center span required.
- Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
- Select a product that meets or exceeds both the design total and live loads.

TABLE 14

NOMINAL 6X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (JC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cl} = 740 \text{ psi}$; *Load Duration Factor* $C_D = 1.25$

Width x Depth (in.)	Load Type	Span (ft)																		
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	
5 1/8 x 6 7/8	Total Load (plf)	1,253	731	420	261	172	118	84	61	-	-	-	-	-	-	-	-	-	-	
	Live Load (plf)	1,084	555	321	202	136	95	69	52	-	-	-	-	-	-	-	-	-	-	
	Min. End Bearing (in.)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	-	-	
5 1/8 x 8 1/4	Total Load (plf)	1,806	1,152	730	456	302	209	149	110	82	62	-	-	-	-	-	-	-	-	
	Live Load (plf)	959	555	350	234	164	120	90	69	55	-	-	-	-	-	-	-	-	-	
	Min. End Bearing (in.)	1.9	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	-	-	
μC 5 1/2 x 9 1/4	Total Load (plf)	2,438	1,556	1,077	692	460	319	229	169	127	97	75	59	-	-	-	-	-	-	
	Live Load (plf)	1,451	840	529	354	249	181	136	105	83	66	54	-	-	-	-	-	-	-	
	Min. End Bearing (in.)	2.4	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	
μC 5 1/2 x 9 1/2	Total Load (plf)	2,572	1,642	1,136	751	499	346	249	184	139	106	82	65	-	-	-	-	-	-	
	Live Load (plf)	1,572	910	573	384	270	196	148	114	89	72	58	-	-	-	-	-	-	-	
	Min. End Bearing (in.)	2.5	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	
5 1/8 x 9 5/8	Total Load (plf)	2,460	1,570	1,087	728	484	336	242	178	135	103	80	63	-	-	-	-	-	-	
	Live Load (plf)	1,523	882	555	372	261	190	143	110	87	69	56	-	-	-	-	-	-	-	
	Min. End Bearing (in.)	2.6	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	-	-	
5 1/8 x 11	Total Load (plf)	3,216	2,053	1,421	1,041	726	506	365	271	205	158	124	98	78	63	-	-	-	-	
	Live Load (plf)	1,316	829	555	390	284	214	164	129	104	84	69	58	-	-	-	-	-	-	
	Min. End Bearing (in.)	3.4	2.7	2.3	1.9	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	-	
μC 5 1/2 x 11 1/4	Total Load (plf)	3,610	2,305	1,596	1,168	834	581	420	311	236	183	143	113	91	73	59	-	-	-	
	Live Load (plf)	1,511	951	637	448	326	245	189	149	119	97	80	66	56	-	-	-	-	-	
	Min. End Bearing (in.)	3.6	2.9	2.4	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	-	
μC 5 1/2 x 11 7/8	Total Load (plf)	4,023	2,569	1,779	1,303	983	686	495	368	280	217	170	135	109	88	71	58	-	-	
	Live Load (plf)	1,777	1,119	750	526	384	288	222	175	140	114	94	78	66	56	-	-	-	-	
	Min. End Bearing (in.)	4.0	3.2	2.6	2.3	2.0	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	-	
5 1/8 x 12 3/8	Total Load (plf)	4,072	2,600	1,801	1,319	1,006	724	524	390	296	230	181	144	116	94	77	63	52	-	
	Live Load (plf)	1,180	790	555	405	304	234	184	147	120	99	82	69	59	51	-	-	-	-	
	Min. End Bearing (in.)	4.3	3.4	2.9	2.5	2.2	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	-	

TABLE 14 (Continued)

NOMINAL 6X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: $\mu C = I$ -JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}; F_{vx} = 300 \text{ psi}; E_x = 1.8 \times 10^6 \text{ psi}; F_{cl} = 740 \text{ psi}; \text{Load Duration Factor } C_D = 1.25$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
5 1/8 x 13 3/4	Total Load (plf)	5,029	3,212	2,225	1,630	1,244	979	723	538	411	319	252	202	163	133	109	90	75	62
	Live Load (plf)				1,618	1,084	761	555	417	321	253	202	164	136	113	95	81	69	60
	Min. End Bearing (in.)	5.3	4.3	3.5	3.0	2.7	2.4	2.0	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
μC 5 1/2 x 14	Total Load (plf)	5,595	3,574	2,476	1,814	1,384	1,086	819	611	466	362	286	229	185	151	125	103	86	71
	Live Load (plf)				1,228	863	629	472	364	286	229	186	154	128	108	92	79	68	
	Min. End Bearing (in.)	5.5	4.4	3.7	3.2	2.8	2.4	2.1	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 15 1/8	Total Load (plf)	6,087	3,889	2,695	1,975	1,507	1,182	949	721	551	429	340	273	221	181	150	124	104	87
	Live Load (plf)				1,443	1,014	739	555	428	336	269	219	180	150	127	108	92	80	
	Min. End Bearing (in.)	6.4	5.2	4.3	3.7	3.2	2.9	2.6	2.1	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
μC 5 1/2 x 16	Total Load (plf)	7,311	4,671	3,237	2,373	1,803	1,412	1,133	918	702	548	434	349	284	233	193	160	134	113
	Live Load (plf)						1,288	939	705	543	427	342	278	229	191	161	137	117	101
	Min. End Bearing (in.)	7.2	5.8	4.8	4.1	3.6	3.2	2.8	2.5	2.1	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 16 1/2	Total Load (plf)	7,246	4,630	3,209	2,352	1,791	1,403	1,126	922	719	561	445	358	291	239	198	165	139	117
	Live Load (plf)						1,316	959	721	555	437	350	284	234	195	164	140	120	104
	Min. End Bearing (in.)	7.7	6.1	5.1	4.4	3.8	3.4	3.0	2.7	2.3	2.0	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5 1/8 x 17 7/8	Total Load (plf)	8,506	5,435	3,768	2,762	2,096	1,641	1,318	1,080	900	717	570	459	374	308	256	214	180	153
	Live Load (plf)							1,220	916	706	555	444	361	298	248	209	178	152	132
	Min. End Bearing (in.)	9.0	7.2	6.0	5.1	4.5	3.9	3.5	3.2	2.9	2.5	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5
μC 5 1/2 x 18	Total Load (plf)	9,257	5,915	4,100	2,995	2,272	1,779	1,429	1,171	976	786	625	503	410	338	281	235	198	168
	Live Load (plf)							1,337	1,004	773	608	487	396	326	272	229	195	167	144
	Min. End Bearing (in.)	9.1	7.3	6.1	5.2	4.5	4.0	3.6	3.2	2.9	2.6	2.2	1.9	1.7	1.5	1.5	1.5	1.5	1.5
5 1/8 x 19 1/4	Total Load (plf)	9,867	6,306	4,371	3,194	2,423	1,898	1,525	1,250	1,042	880	716	577	471	389	324	271	229	195
	Live Load (plf)						1,523	1,144	882	693	555	451	372	310	261	222	190	164	
	Min. End Bearing (in.)	10.4	8.3	7.0	5.9	5.2	4.6	4.1	3.7	3.4	3.1	2.7	2.4	2.1	1.9	1.7	1.5	1.5	1.5
μC 5 1/2 x 20	Total Load (plf)	11,431	7,306	5,060	3,681	2,793	2,188	1,758	1,441	1,201	1,015	863	697	569	470	392	329	278	236
	Live Load (plf)							1,377	1,061	834	668	543	448	373	314	267	229	198	
	Min. End Bearing (in.)	11.3	9.0	7.5	6.4	5.5	4.9	4.4	4.0	3.6	3.3	3.1	2.7	2.3	2.1	1.9	1.7	1.5	1.5

TABLE 14 (Continued)

NOMINAL 6X 24F-V3 SOUTHERN PINE GLULAM SIMPLE-SPAN ROOF BEAMS UNDER CONSTRUCTION LOADS—LEGEND: μC = I-JOIST COMPATIBLE (IJC) SIZES
 $F_{bx} = 2,400 \text{ psi}$; $F_{vx} = 300 \text{ psi}$; $E_x = 1.8 \times 10^6 \text{ psi}$; $F_{cl} = 740 \text{ psi}$; *Load Duration Factor* $C_D = 1.25$

Width x Depth (in.)	Load Type	Span (ft)																	
		8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
5 1/8 x 20 5/8	Total Load (plf)	11,328	7,241	5,020	3,656	2,774	2,173	1,746	1,432	1,193	1,009	863	714	583	482	402	338	286	243
	Live Load (plf)								1,408	1,084	853	683	555	457	381	321	273	234	202
	Min. End Bearing (in.)	12.0	9.6	8.0	6.8	5.9	5.2	4.7	4.2	3.9	3.5	3.3	2.9	2.6	2.3	2.0	1.8	1.6	1.5
5 1/8 x 22	Total Load (plf)	12,891	8,240	5,700	4,148	3,148	2,467	1,982	1,625	1,355	1,146	980	847	712	589	492	414	351	299
	Live Load (plf)								1,316	1,035	829	674	555	463	390	332	284	246	246
	Min. End Bearing (in.)	13.6	10.9	9.1	7.7	6.7	5.9	5.3	4.8	4.4	4.0	3.7	3.5	3.1	2.8	2.5	2.2	2.0	1.8
μC 5 1/2 x 22	Total Load (plf)	13,834	8,843	6,096	4,436	3,366	2,638	2,120	1,738	1,449	1,225	1,048	906	764	632	528	444	376	321
	Live Load (plf)								1,412	1,111	889	723	596	497	418	356	305	263	263
	Min. End Bearing (in.)	13.6	10.9	9.0	7.7	6.7	5.9	5.3	4.8	4.4	4.0	3.7	3.5	3.1	2.8	2.5	2.2	2.0	1.8
5 1/8 x 23 3/8	Total Load (plf)	14,555	9,304	6,417	4,671	3,545	2,778	2,233	1,831	1,527	1,291	1,105	955	833	710	594	500	425	363
	Live Load (plf)									1,241	994	808	666	555	468	398	341	294	294
	Min. End Bearing (in.)	15.4	12.3	10.2	8.7	7.5	6.7	6.0	5.4	4.9	4.5	4.2	3.9	3.6	3.3	3.0	2.7	2.4	2.2
μC 5 1/2 x 24	Total Load (plf)	16,467	10,515	7,226	5,259	3,992	3,128	2,514	2,062	1,720	1,455	1,245	1,076	939	825	691	583	495	423
	Live Load (plf)									1,442	1,155	939	773	645	543	462	396	342	342
	Min. End Bearing (in.)	16.2	13.0	10.7	9.1	7.9	7.0	6.3	5.7	5.2	4.8	4.4	4.1	3.8	3.6	3.2	2.9	2.6	2.4
5 1/8 x 24 3/4	Total Load (plf)	16,319	10,433	7,176	5,223	3,965	3,107	2,498	2,049	1,709	1,445	1,237	1,070	933	821	708	598	508	434
	Live Load (plf)										1,180	959	790	659	555	472	405	350	350
	Min. End Bearing (in.)	17.2	13.8	11.4	9.7	8.4	7.4	6.7	6.0	5.5	5.1	4.7	4.4	4.1	3.8	3.5	3.2	2.8	2.6

Assumptions:

- Span is the on-center distance between supports and is valid for simple-span applications.
- These tables assume full lateral support of the compression side.
- The values represent the load carrying capacity of the beam in pounds per linear foot (plf) of the beam length.
- The values are based on uniform loads and a deflection limit of L/240 under design live load and L/180 under design total load in dry-use conditions.
- The values are based on the design properties listed in ANSI 117-2015 and are in addition to the beam weight (assumed 36 pcf).
- The designers must check both the total load and live load.
- Where the live load is blank, the total load governs the design.
- Do not use a product where designated " " without further analysis by a design professional.

To Use:

- Select the on-center span required.
- Compare the design total load to the tabulated total load and compare the design live load to the tabulated live load.
- Select a product that meets or exceeds both the design total and live loads.

STORAGE AND HANDLING

Jobsite storage

APA-trademarked glulam must be stored properly and handled with care to ensure optimum performance. Sealers, primer coats and water-resistant wrappings protect beams from exposure to moisture and can be specified to be applied before the beams leave the manufacturing plant. Apply sealants to the ends of any beams trimmed or cut in the field to minimize end grain moisture pick-up.

To facilitate unloading and handling, stack beams on lumber blocking or skids when loading them on trucks for transportation to the jobsite. Loads should be secured with straps to eliminate shifting and corners, and edges should be protected with blocking or “softeners” when securing the load.

Store glulam beams on a well-drained site and keep the beams off the ground with lumber blocking, skids or rack systems. If glulam beams are supplied with paper wrapping, leave the wrapping in place during jobsite storage to protect them from exposure to dirt, moisture, sunlight and surface scratches. Cut slits in the bottom of the wrapping to allow ventilation and drainage of any water entrapped in the wrapping. If glulam is to be stored at the jobsite for a long period of time and is not wrapped, cover it with an opaque covering to protect the surfaces.

Lifting

A forklift or other similar mechanical lifting device should be used to unload and handle glulam beams at the jobsite. For greater stability, the sides of the beams should rest on the forks. For very long beams, it may be necessary to use two forklifts working in tandem to avoid excessive deflection of the beam ends. If the beam is lifted with the narrow face against the forks, it should be tied off with “tag lines” to ensure stability. When lifting with a crane, use only nylon or other non-marring slings. Never use steel chokers. Provide adequate blocking to protect corners and edges of the glulam.

When removing wrapping during the installation process, remove all paper wraps to prevent uneven discoloration of the beams due to exposure to sunlight.

Field Cutting and Drilling

Field modifications such as notching, tapering or drilling can significantly affect the strength and serviceability of a glulam beam. These modifications reduce the section of the beam and remove wood fiber from the laminations with the highest strength. Any notching or drilling not shown on the design or shop drawings should be checked by a designer competent in engineered timber design. For more information, refer to *Technical Note: Field Notching and Drilling of Glued Laminated Timber Beams*, Form S560.

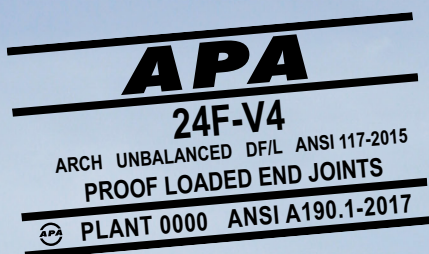
FOR MORE INFORMATION ON BUILDING WITH GLULAM

All titles are available at www.apawood.org/resource-library.

- Glulam Product Guide, Form X440
- Builder Tips: Proper Storage and Handling of Glulam Beams, Form R540
- Data File: Glued Laminated Beam Design Tables, Form S475
- Data File: Substitution of Glulam Beams for Steel and Solid-Sawn Lumber, Form S570
- Technical Note: Evaluation of Check Size in Glued Laminated Timber Beams, Form R475
- Technical Note: Glulam Beam Camber, Form S550
- Technical Note: Field Notching and Drilling of Glued Laminated Timber Beams, Form S560
- Technical Note: Preservative Treatment of Glulam Beams, Form S580
- Technical Note: Glulam Connection Details, Form T300
- APA Engineered Wood Construction Guide, Form E30
- Glulam and the New Home, Form Q720
- Glulam Beams Offer Simple Solutions for Garage Door Headers, Form Q725

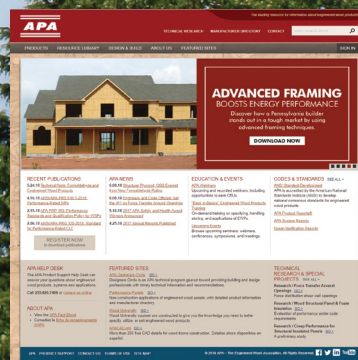
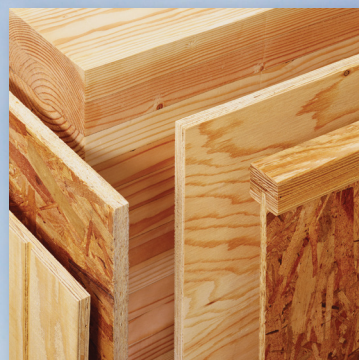
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APA HEADQUARTERS

7011 So. 19th St. ■ Tacoma, Washington 98466
(253) 565-6600 ■ Fax: (253) 565-7265

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