Roseburg

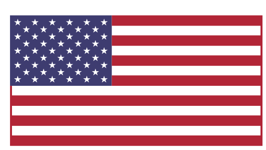
Engineered Wood Products

Residential Design & Installation Guide

ROSEBURG FRAMING SYSTEM®

RigidLam® LVL • RigidLam® LVL Studs • RigidLam® LVL Columns
RigidLam® LVL Stair Stringers • RigidRim® Rimboard • RFPI®-Joist

USA - ALLOWABLE STRESS DESIGN



Conscientious Stewards Of Our Environment.

These five words are the foundation for every action Roseburg takes in its interactions with the environment. The phrase means not just taking care of the lands, but making them better for future generations. Harvesting a tree is easy; studying how our harvest activity impacts everything around it and finding ways to improve upon the environment is more difficult.

We have been up to the task.

We are not only in the business of producing quality wood products, but also in the business of conserving and enhancing the wonderful natural resources that each of us enjoys. Visit any of our harvest sites, and you'll see these words in action.

While using tractors and skidders may often be the easiest and least expensive alternative for removing logs, we look at other, more environmentally-friendly harvesting options such as helicopter logging to protect the soils that grow our trees. Often, you'll find us placing large, woody debris in streams to enhance the fish spawning habitat, or replacing old culverts with larger, better-placed culverts to provide better fish passage.

Roseburg was among the first in the industry to set aside some of its own land in order to study and improve upon fish habitat. Several years ago, we began working with Oregon State University and other agencies on a company-owned area near the Hinkle Creek Watershed to gain current research on the effects of logging on fish. We are now lobbying other companies to replicate the study on their own lands.

Finally, it's important to note that we are a highly self-sufficient manufacturer. We now own more than 600,000 acres of timberland, which supply the majority of wood fiber we need to produce our products. The ability to rely on our own forests gives us the flexibility to match our resources to our product mix. We take a great deal of pride in our partnership with the natural world. However, we don't go to all of this effort and expense simply because it makes us feel good; we do it because it's the right thing to do.

- We manage our natural resources in a responsible manner
- Our EWP products enable builders to use timber resources more efficiently
- We offer composite panels and plywood products that have no added urea formaldehyde
- We have biomass cogeneration plants which use wood waste material from our mills to produce clean energy for our plants and nearby communities
- We produce a broad array of products that are SCS and EPP certified
- Our integrated manufacturing facilities dramatically reduce vehicle carbon emissions
- We plant over 5 million tree seedlings annually
- We are progressively involved in stream research and enhancement

Design Support

The various charts and tables in this literature are based on accepted, typical loading conditions, on center spacing, deflection criteria and/or spans. **This printed information allows the end user to identify and install properly sized RFP engineered wood products without the need for specific design or engineering calculations.** Design software; however, such as Simpson Strong-Tie® Component Solutions™, allows the user to input project specific information into the software which may give a less restrictive solution than the generic information in the printed literature. Rest assured that both the literature and the Component Solutions™ software are based on the appropriate design properties listed in the current code reports.

For additional assistance with specific product design questions, product availability, and Roseburg representative locations, please visit our website at www.Roseburg.com, or contact Roseburg Forest Products at 1-800-347-7260, or at the address listed on the back cover.

Important

All Roseburg Engineered Wood Products are intended and warranted for use in dry-service conditions (i.e. where the average equilibrium moisture content of solid-sawn lumber is less than 16%).

Roseburg Engineered Wood Products

ENGINEERED WOOD PRODUCTS

Roseburg's engineered wood plants are located in Riddle, Oregon and Chester, South Carolina. These state-of-the-art facilities are focused on ensuring the highest quality standards are maintained.

Roseburg's signature trademarks of vertical integration capabilities and cutting-edge manufacturing practices help ensure that quality Engineered Wood Products are produced. Our production capacity, complete product offering, focus on service and product availability, commitment to the EWP business, and acceptability of the product by builders and homeowners all translate into significant advantages for our clients.

ROSEBURG FRAMING SYSTEM®

The Roseburg Framing System® consists of: RFPI® Joists used in floor and roof construction; RigidLam® LVL which is used for headers, beams, studs, columns, stair stringers, and RigidRim® Rimboard. All of the components are engineered to the industry's highest standards to help contractors build solid, durable, and better performing framing systems compared to ordinary dimension lumber.

As an acting member of APA–The Engineered Wood Association, Roseburg has adopted the Performance Standard for wood I-Joists, the Performance Standard for rimboard and the Performance Standard for laminated veneer lumber (LVL). Adherence to the strict APA quality standards assures Roseburg engineered wood product quality and consistency for the market. All engineered wood products described in this document meet the APA standards.

This guide emphasizes residential applications, including technical information on span ratings, installation details, cantilever designs, architectural specifications and engineering design properties. However, much of the basic information can be used for other construction applications. Review by a design professional is required for applications beyond the scope of this document. The Roseburg Framing System®, combined with other wood components produced by Roseburg, offers one of the most complete framing packages available from a single manufacturing supplier today.

WHAT DOES ROSEBURG'S EWP PROGRAM HAVE TO OFFER?

- Dependable supply of engineered wood
- Experienced sales, technical, engineering and customer service teams
- A commitment to quality and predictable performance
- A complete framing package with RFPI-Joists, RigidLam LVL, and RigidRim Rimboard.

THE COMPANY

Since 1936, Roseburg has served the industry providing quality products for residential, commercial, industrial applications. Our natural resource base, state-of-the-art manufacturing facilities, talented and experienced associates, and reputation for quality products and service have been keys to our clients' success.

Integrated manufacturing, wide variety of wood products, and over 600,000 acres of forestlands throughout Southern Oregon, North Carolina and Virginia are assets that will support our strategic growth plans well into the 21st Century.

Software Tools

Roseburg offers a software tool that will aid you in generating accurate, professional layout drawings and member calculations. This software tool includes the Component Solutions™ (CS) EWP Studio Software Suite provided by Simpson Strong-Tie®.

As a supplier of connectors for engineered wood products, Simpson Strong-Tie has been involved in the structural building industry for decades. This experience has provided invaluable insights into the needs of designers and suppliers, resulting in the latest addition to the Simpson Strong-Tie® software product line for light-frame construction. Choose Simpson Strong-Tie® Component Solutions™ EWP Studio™ for your EWP design needs.

COMPONENT SOLUTIONS™ EWP STUDIO™

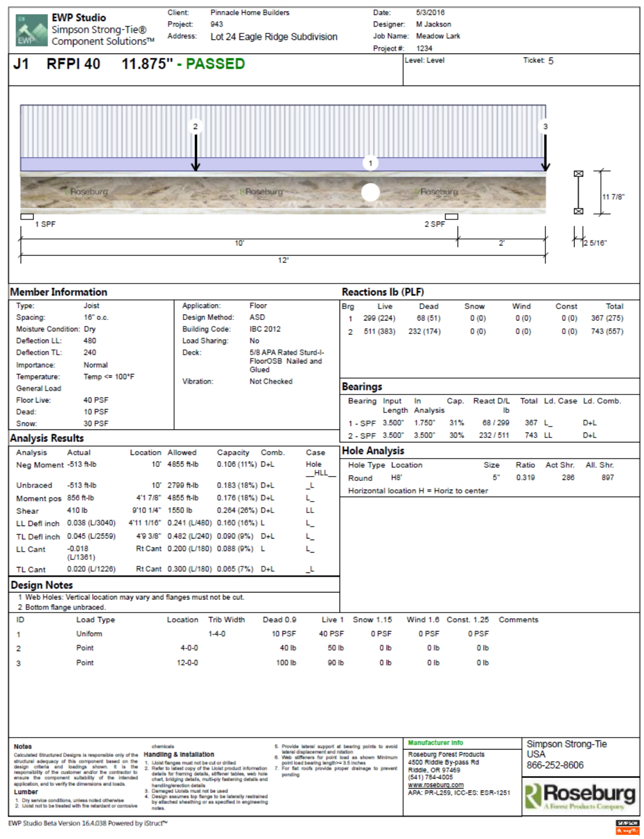
CS EWP Studio is a state-of-the art EWP analysis program. Whether you are looking for a single-member sizing utility or a robust layout and design solution, CS EWP Studio offers a wide range of tools and functions to meet your design, supply and reporting needs.

DESIGN TOOL

The Design tool is a powerful yet easy-to-use single-member sizing feature that enables you to size Roseburg engineered wood products for almost any structural condition. You provide a description of the spans, supports and loads of a specific sizing problem, and CS EWP Studio will deliver pass/fail information and even present you with a list of multiple product solutions. After selecting a product, you can print out a professional, easy-to-read calc sheet.

The program designs RFPI®-Joists at their optimum on-center spacing and RigidLam® LVL beams at their optimum depth. Rectangular or circular holes can be analyzed for RFPI Joists and circular holes can be analyzed for RigidLam® LVL at a given size and location. Cantilever reinforcements can be utilized for RFPI®-Joists used in load-bearing cantilever applications.

RigidLam® LVL columns and studs can be sized using any combination of axial and lateral loading and a variety of default and custom bracing conditions for individual stud and column members.

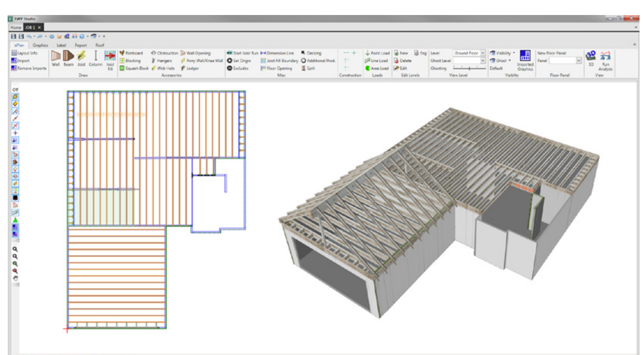


PLAN TOOL

The Plan tool is the complete automation system for Roseburg engineered wood products. The Plan tool software is available to qualified users who use the software to promote and support the sale of Roseburg engineered wood products. The Plan tool includes all of the analysis functionality within the Design tool as well as additional features for creating a 3D model, defining floor and roof systems, generating layouts, and reporting. With this effective tool, the designer describes the building geometry and specifies the framing layout while the software does the analysis, including the following:

- Developing loads throughout the structure
- Sizing all framing members for Roseburg engineered wood products
- Specifying hangers
- Generating placement plans
- Generating material cut lists and hanger schedules

Simpson Strong-Tie provides all training and software support necessary to successfully learn and implement these software programs. To obtain the single-member sizing software, "EWP Studio – Design Tool," or the layout and design software, "EWP Studio – Plan Tool", please contact your local Roseburg representative.



Explanation Of Important EWP Terms

1. **Live Load, Dead Load & Total Load:** Most people would feel very uncomfortable in buildings if there were no consideration to deflection or sag even though they were designed to safely support their total design load. That's because all structures (buildings, bridges, floors, etc.) can safely deflect well beyond the limits that make us feel uncomfortable. Limiting deflection is considered a "serviceability" requirement because it is independent of strength. In floor design, limiting sag is also necessary to prevent cracking in the sheet rock (on the bottom of the joists) due to load being applied and removed during the day.

   To do this, it is necessary to define that portion of the load that varies and that portion of the load that is always present. By definition, Live Load is people, furniture and pets etc. that can be moved on and off the floor. Dead Load is defined as the weight of the floor system itself or any other load that is permanently attached to the floor. Together, the dead load and the live load make up the total load.

2. **L/360, L/480:** A method used to limit the maximum allowable deflection (or sag) when designing joists and beams. Specifically, the term L is the span of the joist or beam expressed in inches and the ratio L/360 would be the maximum building code allowable deflection the joist would be expected to deflect. It does not represent what the actual deflection of the joist is in the field, just the maximum value it would be allowed to deflect under full design load. L/480 is an industry standard ratio for floor systems which exceeds building code requirements.

   The "L over" ratio is always associated with either live load or total load. The most common values are:

Floors:	Live Load – L/480 (or L/360)	Total Load – L/240
Roofs:	Live Load – L/240	Total Load – L/180

   For example, a typical residential floor (40 psf LL / 10 psf DL) with RFPI-Joists would be designed to an L/480 Live Load limit and an L/240 Total Load limit. For an 18' span, this would be equivalent to:

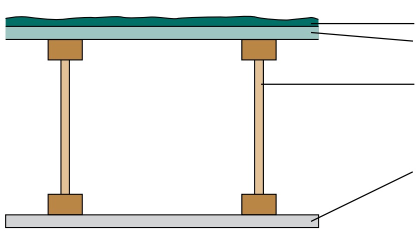
   $\frac{L}{480} = \frac{18' \times 12}{480} = \frac{216}{480} = 0.45''$ Allowable Live Load Deflection *And* $\frac{L}{240} = \frac{18' \times 12}{240} = \frac{216}{240} = 0.90''$ Allowable Total Load Deflection

   The actual Live Load deflection of the floor system would be determined with a surveyor's transit taking readings before and after a true 40 psf load (i.e., cinder blocks) was applied. The deflection reading obtained in the field must be less than (or equal to) the 0.45". The same applies to the 0.9" under a true 50 psf load.

3. **PSF Load:** This is the design load, in pounds per square foot that is "applied" to the entire floor or roof area. By code, most residential floors must be designed to support a live load of 40 psf. The live load for roofs is determined by local code and depends on the amount of annual snow expected for that region where the house is.

   The design dead load psf is determined by the weight of each component of the floor or roof. A typical residential floor will have a dead load of 10 psf but depending on the components used, it can be as high as 20–24 psf. Dead load psf is based on standard material weights found in any of the National Model Building Codes. A typical method for calculating dead load is shown below:

DEAD LOAD CALCULATION FOR TYPICAL RESIDENTIAL FLOOR



CARPET & PAD	= 1.2 psf
T&G SUB-FLOOR	= 2.7 psf
Assume 11-7/8" **RFPI-20 I-Joist** @16" o.c. (2.37 plf ÷ 1.33 ft)	= 1.8 psf
5/8" Sheet Rock **CEILING**	= 2.8 psf
MISCELLANEOUS (ductwork, wiring, etc.)	= 1.5 psf
TOTAL DEAD LOAD	**= 10 psf**

TYPICAL BUILDING MATERIAL WEIGHTS

Floors		
Hardwood - 1" thick	4.0	psf
Concrete - 1" thick		
Regular	12.0	psf
Lightweight	8.0-12.0	psf
Gypcrete - 3/4" thick	6.5	psf
Sheet vinyl	0.5	psf
Carpet and pad	1.0	psf
3/4" ceramic or quarry tile	10.0	psf
Linoleum or soft tile	1.5	psf
1/2" mortar bed	6.0	psf
1" mortar bed	12.0	psf

Ceilings		
Acoustical fiber tile	1.0	psf
1/2" gypsum board	2.2	psf
5/8" gypsum board	2.8	psf
Plaster - 1" thick	8.0	psf
Metal suspension system (including tile)	1.8	psf

Insulation - 1" Thick		
Polystyrene foam & Styrofoam	0.2	psf
Foamglass	0.8	psf
Rigid fiberglass	1.5	psf
Glass wool	0.1	psf
Rock wool	0.2	psf

Douglas-fir Sheathing		
1/2" plywood	1.5	psf
5/8" plywood	1.8	psf
3/4" plywood	2.3	psf
1/2" OSB	1.7	psf
5/8" OSB	2.0	psf
3/4" OSB	2.5	psf
7/8" OSB	2.9	psf

Miscellaneous		
Mechanical ducts	2.0-4.0	psf
Stucco - 1" thick	10.0	psf

Roofing Materials		
Asphalt shingles	2.5	psf
Wood shingles	2.0	psf
Clay tile	9.0-14.0	psf
Slate - 3/8" thick	15.0	psf

Weights of Douglas-fir Framing - PSF

Nominal Size	Joist Spacing 12"	16"	19.2"	24"
2x4	1.4	1.1	0.9	0.7
2x6	2.2	1.7	1.4	1.1
2x8	2.9	2.2	1.8	1.5

Weights of Sprinkler Lines

Pipe Size	Schedule 40		Schedule 10	
	Dry (plf)	Wet (plf)	Dry (plf)	Wet (plf)
1"	1.7	2.1	1.4	1.8
1-1/2"	2.7	3.6	2.1	3.1
2"	3.7	5.2	2.7	4.2

Floor System Performance

It is always a good idea to consider the performance (i.e., vibration, bounce etc.) of **any floor system**. Currently, there are no true industry standard guidelines to use for I-joists but there are several practical aids that have shown to be useful. Some are design aids, some are installation aids and some are retrofit aids. They are offered as tools to help you minimize complaints about floor performance but cannot be guaranteed to eliminate all floor performance problems.

Begin by using the concepts of **fundamental natural frequency** and **damping** when designing floor systems. The **fundamental natural frequency** (FNF) is a measure of how the floor vibrates when you walk on it and is measured in cycles per second (called a Hertz or Hz). **Damping** is a measure of how quickly a floor stops vibrating and is expressed as a percent between 1 and 100 (most residential floors have a range between 5% – 25% damping).

Our bodies are extremely sensitive to vibrations below 9 Hz so the ideal floor would have a high FNF with high damping. Most problem floors have a combination of a low FNF (below 9 Hz) and a low damping (around 5%). The following list will help you determine the effect of different parameters on floor performance. **It is the combination and interaction of these parameters that determines how the floor "feels".**

DESIGN PARAMETERS	EFFECT ON FNF	EFFECT ON DAMPING
Longer Spans	**significantly lowers**	little or no effect
Higher "L over" deflection limit (L/480 vs. Code Minimum L/360)	**significantly increases**	little or no effect
Using an absolute upper limit on live load deflection (Usually between 1/3" to 1/2" max)	**significantly increases**	little or no effect
Using deeper I-joists	increases	little or no effect
Reduced on-center spacing	increases	little or no effect
Adding perpendicular partition walls	little or no effect	**significantly increases**
Increasing overall weight of floor	**significantly lowers**	**significantly increases**
INSTALLATION PARAMETERS		
Unlevel bearings (walls, beams & hangers)	**significantly lowers**	**significantly lowers**
Direct applied sheet-rock ceiling	**significantly increases**	**significantly increases**
Thicker sub-floor	increases	increases
Screw & Glued sub-floor	increases	increases
T&G sub-floor	increases	increases
RETROFIT PARAMETERS		
I-joist mid span blocking (one row)	little or no effect	increases
2x4 flat on I-joist bottom (perpendicular)	little or no effect	increases
2x4 strong back on I-joist bottom (2x4 nailed to side of flat perpendicular)	increases	**significantly increases**

2x10 & 2x12 Floor Joist Comparison

RFPI®-JOIST SUBSTITUTION GUIDE FOR SOLID-SAWN LUMBER[1]

2x10 No. 2 Solid-Sawn Live Load Deflection = L/360		**Simple Span** **9-1/2" RFPI Joist** Live Load Deflection = L/480			**Multiple Span** **9-1/2" RFPI Joist** Live Load Deflection = L/480		
Species	**Maximum Simple Span @16" o.c.[2]**	**16" o.c.**	**19.2" o.c.**	**24" o.c.**	**16" o.c.**	**19.2" o.c.**	**24" o.c.**
Spruce-Pine-Fir	15'-5"	RFPI 20	RFPI 40S/400	RFPI 70	RFPI 20	RFPI 20	RFPI 400/40
Hem-Fir	15'-2"	RFPI 20	RFPI 40S/400	RFPI 60S/70	RFPI 20	RFPI 20	RFPI 400/40
Douglas-fir-Larch	15'-7"	RFPI 20	RFPI 40/60S	RFPI 70	RFPI 20	RFPI 20	RFPI 400/40
Southern Pine	14'-0"	RFPI 20	RFPI 20	RFPI 40S/400	RFPI 20	RFPI 20	RFPI 20

2x12 No. 2 Solid-Sawn Live Load Deflection = L/360		**Simple Span** **11-7/8" RFPI Joist** Live Load Deflection = L/480			**Multiple Span** **11-7/8" RFPI Joist** Live Load Deflection = L/480		
Species	**Maximum Simple Span @16" o.c.[2]**	**16" o.c.**	**19.2" o.c.**	**24" o.c.**	**16" o.c.**	**19.2" o.c.**	**24" o.c.**
Spruce-Pine-Fir	17'-10"	RFPI 20	RFPI 40S/400	RFPI 60S/70	RFPI 20	RFPI 40S	RFPI 40/60S
Hem-Fir	17'-7"	RFPI 20	RFPI 20	RFPI 40/60S	RFPI 20	RFPI 40S	RFPI 400
Douglas-fir-Larch	18'-1"	RFPI 20	RFPI 40S/400	RFPI 60S/70	RFPI 20	RFPI 40S	RFPI 40/60S
Southern Pine	16'-6"	RFPI 20	RFPI 20	RFPI 20	RFPI 20	RFPI 20	RFPI 40S

(1) Comparison chart based on uniform loads (Live load = 40 psf, Dead load = 10 psf).
(2) Spans taken from 2021 International Residential Code.

Safety & Construction Precautions

WARNING: I-joists and LVL beams are not stable until completely installed, and will not carry any load until fully braced and sheathed.

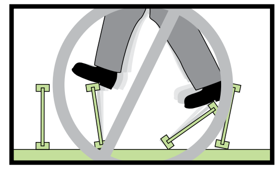
AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rimboard, and/or cross-bridging at joist ends.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
3. Temporary bracing or struts must be 1 x 4 inch minimum, at least eight feet long, spaced no more than eight feet on center, and must be secured with a minimum of two 8d nails fastened to the top surface of each I-joist. Nail bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.

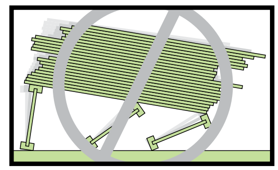
   Or, sheathing (temporary or permanent) can be nailed to the top flange of the first four feet of I-joists at the end of the bay.
4. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rimboard, or cross-bridging.
5. Install and nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only. See APA Technical Note number J735C "Temporary Construction Loads Over I-Joist Roofs and Floors" for additional information regarding proper stacking of building materials.
6. **NEVER INSTALL A DAMAGED I-JOIST OR LVL MEMBER.**

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for RFPI®-Joists or RigidLam® LVL, failure to properly use allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

These are general recommendations and in some cases additional precautions may be required.



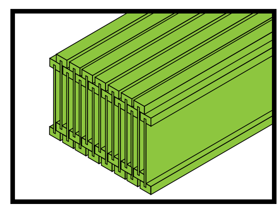
Do not allow workers to walk on I-joists or LVL beams until they are fully installed and braced, or serious injuries can result.

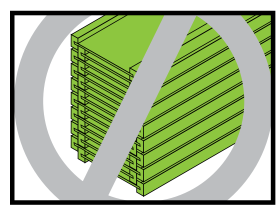


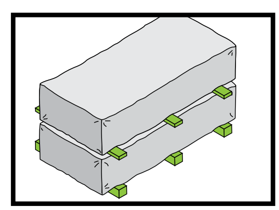
Never stack building materials over unsheathed I-joists. Stack only over braced beams or walls.

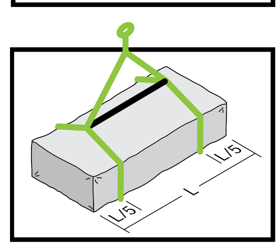
Storage & Handling Guidelines

- Do not drop I-joists or LVL off the delivery truck. Best practice is use of a forklift or boom.
- Store bundles upright on a smooth, level, well-drained supportive surface.
- Do not store I-joists or LVL in direct contact with the ground. Bundles should be a minimum of 6" off the ground and supported every 10' or less.
- Always stack and handle I-joists in their upright position only.
- Place 2x or LVL spacers (at a maximum of 10' apart) between bundles stored on top of one another. Spacers above should be lined up with spacers below.
- Bundles should remain wrapped, strapped, and protected from the weather until time of installation.
- Do not lift I-joist bundles by top flange.
- Avoid excessive bowing or twisting of I-joists or LVL during all phases of handling and installation (i.e. measuring, sawing or placement). Never load I-joists in the flat-wise orientation.
- Take care to avoid forklift damage. Reduce forklift speed to avoid "bouncing" the load.
- When handling I-joists with a crane ("picking"), take a few simple precautions to prevent damage to the I-joists and injury to your work crew:
  - Pick I-joists in the bundles as shipped by the supplier.
  - Orient the bundles so that the webs of the I-joists are vertical.
  - Pick the bundles at the 5th points, using a spreader bar if necessary.
- Do not stack LVL bundles on top of I-Joist bundles.
- All field repairs must be approved by a Design Professional.
- **NEVER USE A DAMAGED I-JOIST OR LVL.**









Engineered to Make the Job Easier

RFPIs are the ideal choice for designers and builders who want to provide their customers with high-quality floor systems. They provide consistent performance for the most demanding residential applications.

SIMPLE TO INSTALL

I-joists save builders time, and money. I-joists are typically precut and shipped to the jobsite ready to install. This minimizes jobsite cutting and material waste. I-joists can be cut and fastened with traditional framing tools and fasteners – no special tools are required. Since I-joists can typically be used at greater joist spacings than lumber, fewer pieces must be cut and handled on the jobsite, making I-joist installation less costly and less wasteful for the builder.

DESIGN FLEXIBILITY

The availability of long lengths allows multiple span installations thus speeding construction by eliminating the need to lap joists over bearing walls or support beams. This also means fewer pieces to handle. The availability of long lengths and relatively deep joists also gives designers the freedom to create more open spaces and reduces the need for supporting walls, columns, or beams.

LIGHTWEIGHT

Because I-joists typically weigh less than half of comparable conventional framing lumber, they can be installed quickly and efficiently.

DIMENSIONALLY STABLE

I-joists will not warp, twist, or shrink, and are more uniform in their dimensions than sawn lumber joists. The floor vibration criteria combined with their straightness and uniformity provides a stiffer, more uniform floor with fewer squeaks, and higher customer satisfaction.

WEB HOLES

The OSB webs in Roseburg's I-joists permit holes to be easily cut on the jobsite to permit the passage of electrical wiring, plumbing and ductwork. This cannot always be accomplished with sawn lumber joists where the mechanical systems must be passed under the joist system. Roseburg also provides knockout holes along the length of the joists to facilitate the installation of electrical wiring or light plumbing lines. These knockouts can easily be removed with a hammer as needed.

APA QUALITY ASSURED

The APA trademark ensures superior I-joist quality and consistent performance. All products are subject to the proven quality assurance program of APA.

RESOURCE FRIENDLY

Wood I-joists use up to 50% less wood fiber in their production than conventional lumber joists, allowing more efficient use of our natural resources.

Installation Notes

1. Engineered lumber must not remain in direct contact with concrete or masonry construction and must be used in dry use conditions only.
2. Except for cutting to length, top and bottom flanges of RFPI-Joists shall not be cut, drilled or notched.
3. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist web.
4. Any fastening, resistance to uplift or application not specifically detailed is subject to local approval.
5. I-joist end bearing length must be at least 1-3/4". Intermediate bearings of multiple span joists must be at least 3-1/2".
6. RFPI-Joists must be restrained against rotation at the ends of joists by use of rimboard, rim joists, blocking panels, or cross-bracing. To laterally support cantilevered joists, blocking panels must also be installed over supports nearest the cantilever.
7. Additionally, rimboard, rim joists, blocking panels, or squash blocks must be provided under all exterior walls and interior load bearing walls to transfer loads from above to the supports below.
8. Plywood or OSB subfloor fastened to the top flange of an RFPI-Joist is adequate to provide lateral support.
9. Install I-joists so that top and bottom flanges are straight and remain within 1/2 inch of true alignment.
10. Roseburg does not require mid-span blocking or bridging in RFPI floor applications.
11. RFPI-Joists are produced without camber so either flange can be the top or bottom flange; however, orienting the floor I-joists so the pre-scored knockouts are on the bottom may ease installation of electrical wiring or residential sprinkler systems.
12. See table below for recommended sheathing attachment with nails. If sheathing is to be attached with screws, the screw size should be equal to or only slightly larger than the recommended nail size. Space the screws the same as the required nail spacing. The unthreaded shank of the screw should extend beyond the thickness of the panel to assure that the panel is pulled securely against the I-joist flange. Use screws intended for structural assembly of wood structures. It is recommended to use screws from a manufacturer that can provide an ICC-ES Report (or similar) with approved application specifications and design values. Drywall screws can be brittle and should not be used.

RECOMMENDED NAIL SIZE & SPACING[a]

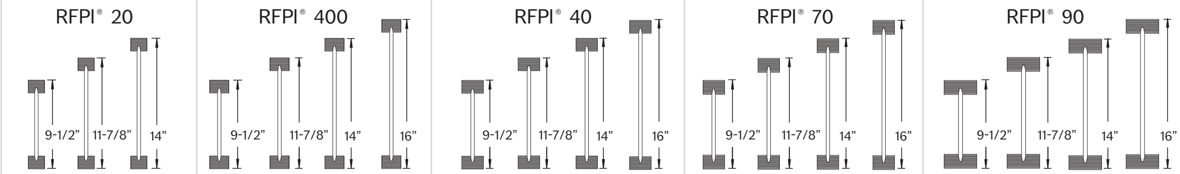
		Flange Face Nailing (in)[b][c]		Flange Edge Nailing (in)		
Flange Material	**Fastener Diameter[d][e]**	**End Distance**	**Nail Spacing**	**End Distance**	**Nailed to one flange edge**	**Nailed to both flange edges[f]**
LVL Flange I-Joist	dia. ≤ 0.128" (8d box or sinker, 10d box or sinker, 12d box)	3	2	3	3	6
	0.128"≤ dia. ≤ 0.148" (8d com, 10d com, 12d sinker or com, 16d box or sinker)	3	3	3	3[g]	6[g]
Solid Sawn Flange I-Joist	dia. ≤ 0.128" (8d box or sinker, 10d box or sinker, 12d box)	2	2	2	2	4
	0.128" ≤ dia. ≤ 0.148" (8d com, 10d com, 12d sinker or com, 16d box or sinker)	2	3	2	3	6

Nailing Notes:

a. Nail spacings shown are guidelines for RFPI®-Joists used in conventional framing applications. For cases where horizontal diaphragm load capacity is required, refer to Table 4 of APA Product Report® PR-L259 for allowable diaphragm loads and the applicable RFPI-Joist series, panel grade and thickness, and nail size and spacing.
b. For conventional framing, attach sheathing to RFPI-Joists in accordance with applicable building code or approved building plan. However, do not use nails larger or spaced closer than shown in the table above.
c. If more than one row of nails is required, rows must be offset by at least 1/2" and staggered.
d. 14 gauge staples may be substituted for 8d (2-1/2") nails if staples penetrate the joist at least 1".
e. 10d (3") box nails may be substituted for 8d (2-1/2") common nails.
f. Nails on opposing flange edges must be offset one-half the minimum spacing.
g. Maximum of 0.131" diameter (8d common).

RFPI®-Joist Design Properties

LVL FLANGE I-JOIST DIMENSIONS



RFPI® 20: 1-3/4" wide x 1-3/8" LVL Flange, 3/8" OSB Web

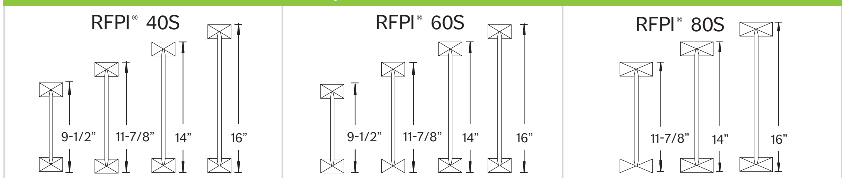
RFPI® 400: 2-1/16" wide x 1-3/8" LVL Flange, 3/8" OSB Web

RFPI® 40: 2-5/16" wide x 1-3/8" LVL Flange, 3/8" OSB Web

RFPI® 70: 2-5/16" wide x 1-1/2" LVL Flange, 3/8" OSB Web

RFPI® 90: 3-1/2" wide x 1-1/2" LVL Flange, 7/16" OSB Web

SOLID SAWN FLANGE I-JOIST DIMENSIONS



RFPI® 40S: 2-1/2" wide x 1-1/2" Solid Sawn Flange, 3/8" OSB Web

RFPI® 60S: 2-1/2" wide x 1-1/2" Solid Sawn Flange, 3/8" OSB Web

RFPI® 80S: 3-1/2" wide x 1-1/2" Solid Sawn Flange, 3/8" OSB Web

DESIGN PROPERTIES FOR RFPI®-JOISTS[1]

Joist Depth	Joist Series	APA Designation	EI[2] x10^6 lb-in^2	M[3] lb-ft	V[4] lbs	VLC[5] lbs/ft	K[6] x10^6 lb	Weight plf
9-1/2"	RFPI 20[7]	9-1/2" PRI 20	165	2,820	1,220	2,000	4.94	2.06
	RFPI 40S[7]	9-1/2" PRI 40	193	2,735	1,120	2,000	4.94	2.56
	RFPI 400	Not Applicable	193	3,345	1,220	2,000	4.94	2.29
	RFPI 40[7]	9-1/2" PRI 40	215	3,760	1,330	2,000	4.94	2.56
	RFPI 60S[7]	9-1/2" PRI 60	231	3,780	1,120	2,000	4.94	2.56
	RFPI 70	Not Applicable	266	5,130	1,330	2,000	4.94	2.57
	RFPI 90	Not Applicable	398	7,830	1,890	2,000	4.94	3.70
11-7/8"	RFPI 20[7]	11-7/8" PRI 20	283	3,640	1,420	2,000	6.18	2.37
	RFPI 40S[7]	11-7/8" PRI 40	330	3,545	1,420	2,000	6.18	2.83
	RFPI 400	Not Applicable	330	4,315	1,480	2,000	6.18	2.60
	RFPI 40[7]	11-7/8" PRI 40	366	4,855	1,550	2,000	6.18	2.81
	RFPI 60S[7]	11-7/8" PRI 60	396	4,900	1,420	2,000	6.18	2.83
	RFPI 70[7]	11-7/8" PRI 70	455	6,645	1,550	2,000	6.18	2.95
	RFPI 80S[7]	11-7/8" PRI 80	547	6,970	1,590	2,000	6.18	3.79
	RFPI 90[7]	11-7/8" PRI 90	676	10,145	2,050	2,000	6.18	4.17
14"	RFPI 20	Not Applicable	420	4,330	1,610	2,000	7.28	2.60
	RFPI 40S[7]	14" PRI 40	482	4,270	1,710	2,000	7.28	3.07
	RFPI 400	Not Applicable	486	5,140	1,710	2,000	7.28	2.98
	RFPI 40[7]	14" PRI 40	540	5,785	1,770	2,000	7.28	3.13
	RFPI 60S[7]	14" PRI 60	584	5,895	1,710	2,000	7.28	3.07
	RFPI 70[7]	14" PRI 70	672	7,925	1,770	2,000	7.28	3.21
	RFPI 80S[7]	14" PRI 80	802	8,390	1,835	2,000	7.28	4.03
	RFPI 90[7]	14" PRI 90	992	12,100	2,195	2,000	7.28	4.51
16"	RFPI 40S[7]	16" PRI 40	657	4,950	1,970	2,000	8.32	3.31
	RFPI 400	Not Applicable	665	5,880	1,970	2,000	8.32	3.19
	RFPI 40[7]	16" PRI 40	737	6,615	1,970	2,000	8.32	3.34
	RFPI 60S[7]	16" PRI 60	799	6,835	1,970	2,000	8.32	3.31
	RFPI 70[7]	16" PRI 70	918	9,080	1,970	2,000	8.32	3.48
	RFPI 80S[7]	16" PRI 80	1,092	9,730	2,070	2,000	8.32	4.26
	RFPI 90[7]	16" PRI 90	1,350	13,865	2,330	2,000	8.32	4.80

1. The tabulated values are design values for 100% duration of load. All values except for EI and K are permitted to be adjusted for other load durations as permitted by code, with the further exception that VLC shall not be increased for shorter durations of load. Design values listed are applicable for Allowable Stress Design (ASD).
2. Bending stiffness (EI) of the I-joist.
3. Moment capacity (M) of a single I-joist. **Moment capacity of the I-Joist shall not be increased by any repetitive member use factor.**
4. Shear capacity (V) with a minimum bearing length of 4 inches.
5. Vertical Load Capacity when continuously supported.
6. Coefficient of shear deflection (K), used to calculate deflections for I-joist applications. Equations 1 and 2 below are provided for uniform load and center point load conditions for simple spans.

Uniform Load:

$$[1] \quad \delta = \frac{5\omega\ell^4}{384EI} + \frac{\omega\ell^2}{K}$$

Center-Point Load:

$$[2] \quad \delta = \frac{P\ell^3}{48EI} + \frac{2P\ell}{K}$$

where:

δ = calculated deflection (in)
EI = bending stiffness of the I-joist (lb-in^2)
K = coefficient of shear deflection (lb)
ω = uniform load (lb/in)
ℓ = design span (in)
P = concentrated load (lb)

7. Design properties meet or exceed the requirements of the PRI-400 Performance Standard for APA I-Joists for the corresponding I-joist series and depth.

RFPI®-Joist Allowable Reaction Information

General Note: Determine the allowable reaction capacity from Table 1 and Table 2 and use the lesser of the two values (refer to the notes for each table).

TABLE 1: RFPI®-JOIST REACTION CAPACITIES WITH OR WITHOUT WEB STIFFENERS (W.S.)[1]

Joist Depth	Joist Series	End Reaction (lbs)				Intermediate Reaction (lbs)				Web Stiffener Nails [2]
		1-3/4" Bearing		4" Bearing		3-1/2" Bearing		5-1/4" Bearing		
		No W.S.	With W.S.	No W.S.	With W.S.	No W.S.	With W.S.	No W.S.	With W.S.	
9 -1/2"	RFPI-20	910	1,150	1,220	1,220	1,775	1,875	2,000	2,300	4-8d
	RFPI-40S	1,080	1,120	1,120	1,120	2,160	2,240	2,240	2,240	4-8d
	RFPI-400	1,025	1,220	1,220	1,220	2,150	2,250	2,300	2,440	4-8d
	RFPI-40	1,080	1,220	1,330	1,330	2,250	2,500	2,550	2,650	4-8d
	RFPI-60S	1,080	1,120	1,120	1,120	2,160	2,240	2,240	2,240	4-8d
	RFPI-70	1,120	1,330	1,330	1,330	2,335	2,500	2,550	2,650	4-8d
	RFPI-90	1,330	1,585	1,700	1,890	3,020	3,445	3,445	3,475	4-8d
11-7/8"	RFPI-20	950	1,225	1,420	1,420	1,935	2,035	2,135	2,435	4-8d
	RFPI-40S	1,200	1,340	1,420	1,420	2,500	2,625	2,660	2,840	4-8d
	RFPI-400	1,050	1,265	1,480	1,480	2,250	2,350	2,350	2,650	4-8d
	RFPI-40	1,200	1,400	1,550	1,550	2,500	2,625	2,660	2,870	4-8d
	RFPI-60S	1,200	1,340	1,420	1,420	2,500	2,625	2,660	2,840	4-8d
	RFPI-70	1,200	1,470	1,550	1,550	2,500	2,625	2,660	2,870	4-8d
	RFPI-80S	1,280	1,590	1,550	1,590	2,810	3,180	3,100	3,180	4-10d
	RFPI-90	1,400	1,745	1,885	2,050	3,355	3,475	3,475	3,675	4-10d
14"	RFPI-20	950	1,290	1,550	1,610	1,935	2,035	2,135	2,435	4-8d
	RFPI-40S	1,200	1,530	1,550	1,710	2,500	2,740	2,755	3,050	4-8d
	RFPI-400	1,050	1,305	1,550	1,710	2,250	2,350	2,350	2,650	4-8d
	RFPI-40	1,200	1,560	1,550	1,770	2,500	2,740	2,755	3,065	4-8d
	RFPI-60S	1,200	1,530	1,550	1,710	2,500	2,740	2,755	3,050	4-8d
	RFPI-70	1,200	1,590	1,550	1,770	2,500	2,740	2,755	3,065	4-8d
	RFPI-80S	1,280	1,750	1,550	1,835	3,020	3,360	3,210	3,600	4-10d
	RFPI-90	1,400	1,885	1,885	2,195	3,355	3,500	3,500	3,850	4-10d
16"	RFPI-40S	1,200	1,710	1,550	1,970	2,500	2,850	2,850	3,250	4-8d
	RFPI-400	1,050	1,340	1,550	1,970	2,250	2,350	2,350	2,650	4-8d
	RFPI-40	1,200	1,710	1,550	1,970	2,500	2,850	2,850	3,250	4-8d
	RFPI-60S	1,200	1,710	1,550	1,970	2,500	2,850	2,850	3,250	4-8d
	RFPI-70	1,200	1,710	1,550	1,970	2,500	2,850	2,850	3,250	4-8d
	RFPI-80S	1,280	1,900	1,550	2,070	3,020	3,525	3,310	4,000	4-10d
	RFPI-90	1,400	2,025	1,885	2,330	3,355	3,525	3,525	4,025	4-10d

Notes:

1. The tabulated design values in Table 1 are for 100% duration of load. Interpolation between tabulated values is permitted. All values in Table 1 shall be permitted to be adjusted for other load durations.
2. Number of nails required for web stiffeners. Refer to page 24 for web stiffener and nail installation requirements.

TABLE 2: RFPI®-JOIST REACTION CAPACITIES BASED ON FLANGE ALLOWABLE COMPRESSION PERP.-TO-GRAIN[1][2]

Depth	Joist Series	End Reaction (lbs)				Intermediate Reaction (lbs)			
		1-3/4" Bearing		4" Bearing		3-1/2" Bearing		5-1/4" Bearing	
		No W.S.	With W.S.	No W.S.	With W.S.	No W.S.	With W.S.	No W.S.	With W.S.
All Depths in each series	RFPI-20	1,835		4,205		4,070		5,910	
	RFPI-40S	1,760		4,020		3,895		5,655	
	RFPI-400	2,195		5,015		4,860		7,055	
	RFPI-40	2,475		5,665		5,490		7,970	
	RFPI-60S	2,175		4,970		4,815		6,990	
	RFPI-70	2,475		5,665		5,490		7,970	
	RFPI-80S	3,090		7,070		6,850		9,940	
	RFPI-90	3,830		8,755		8,480		12,310	

Notes:

1. Maximum allowable reaction capacity based on flange Fc perp. Interpolation between tabulated values in Table 2 is permitted.
2. The values in Table 2 are for 100% duration of load and shall not be increased for shorter durations of load.

Allowable Floor Clear Spans For RFPI®-Joists

40 PSF LIVE LOAD AND 10 PSF DEAD LOAD — L/480 Live Load Deflection

Joist Depth	Joist Series	40/10 Simple Span				40/10 Multiple Span			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9-1/2"	RFPI 20	17' - 2"	15' - 9"	14' - 10"	13' - 10"	18' - 9"	17' - 1"	16' - 2"	14' - 0"
	RFPI 40S	18' - 0"	16' - 5"	15' - 6"	14' - 6"	19' - 7"	17' - 11"	16' - 4"	14' - 7"
	RFPI 400	18' - 0"	16' - 5"	15' - 6"	14' - 6"	19' - 7"	17' - 10"	16' - 10"	15' - 9"
	RFPI 40	18' - 7"	16' - 11"	16' - 0"	14' - 11"	20' - 2"	18' - 5"	17' - 5"	16' - 2"
	RFPI 60S	18' - 11"	17' - 4"	16' - 4"	15' - 3"	20' - 8"	18' - 10"	17' - 9"	16' - 6"
	RFPI 70	19' - 9"	18' - 0"	17' - 0"	15' - 10"	21' - 6"	19' - 7"	18' - 5"	17' - 2"
	RFPI 90	22' - 3"	20' - 3"	19' - 0"	17' - 9"	24' - 2"	22' - 0"	20' - 8"	19' - 3"
11-7/8"	RFPI 20	20' - 6"	18' - 9"	17' - 9"	16' - 6"	22' - 4"	20' - 5"	18' - 10"	15' - 3"
	RFPI 40S	21' - 5"	19' - 7"	18' - 6"	16' - 8"	23' - 5"	20' - 5"	18' - 7"	16' - 7"
	RFPI 400	21' - 5"	19' - 7"	18' - 6"	17' - 3"	23' - 4"	21' - 4"	20' - 1"	17' - 9"
	RFPI 40	22' - 1"	20' - 2"	19' - 0"	17' - 9"	24' - 1"	22' - 0"	20' - 8"	19' - 3"
	RFPI 60S	22' - 7"	20' - 8"	19' - 6"	18' - 2"	24' - 8"	22' - 6"	21' - 2"	19' - 7"
	RFPI 70	23' - 7"	21' - 6"	20' - 3"	18' - 10"	25' - 8"	23' - 5"	22' - 0"	19' - 9"
	RFPI 80S	24' - 11"	22' - 8"	21' - 4"	19' - 11"	27' - 1"	24' - 8"	23' - 3"	21' - 7"
	RFPI 90	26' - 6"	24' - 1"	22' - 8"	21' - 1"	28' - 10"	26' - 3"	24' - 8"	22' - 11"
14"	RFPI 20	23' - 4"	21' - 4"	20' - 2"	18' - 6"	25' - 5"	22' - 7"	19' - 2"	15' - 3"
	RFPI 40S	24' - 4"	22' - 3"	20' - 6"	18' - 4"	25' - 11"	22' - 5"	20' - 5"	18' - 3"
	RFPI 400	24' - 4"	22' - 3"	21' - 0"	19' - 7"	26' - 7"	24' - 3"	22' - 3"	17' - 9"
	RFPI 40	25' - 2"	22' - 11"	21' - 8"	20' - 2"	27' - 5"	25' - 0"	23' - 7"	19' - 9"
	RFPI 60S	25' - 9"	23' - 6"	22' - 2"	20' - 8"	28' - 0"	25' - 7"	24' - 1"	19' - 9"
	RFPI 70	26' - 10"	24' - 5"	23' - 0"	21' - 5"	29' - 3"	26' - 7"	24' - 9"	19' - 9"
	RFPI 80S	28' - 3"	25' - 9"	24' - 3"	22' - 7"	30' - 9"	28' - 0"	26' - 4"	23' - 11"
	RFPI 90	30' - 1"	27' - 5"	25' - 9"	23' - 11"	32' - 10"	29' - 10"	28' - 1"	26' - 0"
16"	RFPI 40S	26' - 11"	24' - 3"	22' - 1"	19' - 9"	27' - 11"	24' - 2"	22' - 0"	19' - 8"
	RFPI 400	27' - 0"	24' - 8"	23' - 4"	20' - 10"	29' - 6"	26' - 4"	22' - 3"	17' - 9"
	RFPI 40	27' - 10"	25' - 5"	24' - 0"	22' - 4"	30' - 4"	27' - 8"	24' - 9"	19' - 9"
	RFPI 60S	28' - 6"	26' - 0"	24' - 7"	22' - 11"	31' - 1"	28' - 4"	24' - 9"	19' - 9"
	RFPI 70	29' - 9"	27' - 1"	25' - 6"	23' - 9"	32' - 5"	29' - 6"	24' - 9"	19' - 9"
	RFPI 80S	31' - 4"	28' - 6"	26' - 10"	25' - 0"	34' - 2"	31' - 1"	29' - 3"	23' - 11"
	RFPI 90	33' - 4"	30' - 4"	28' - 7"	26' - 7"	36' - 5"	33' - 1"	31' - 1"	26' - 7"

40 PSF LIVE LOAD AND 20 PSF DEAD LOAD — L/480 Live Load Deflection

Joist Depth	Joist Series	40/20 Simple Span				40/20 Multiple Span			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
9-1/2"	RFPI 20	17' - 2"	15' - 9"	14' - 10"	13' - 7"	18' - 9"	16' - 7"	14' - 7"	11' - 7"
	RFPI 40S	18' - 0"	16' - 5"	14' - 11"	13' - 4"	18' - 11"	16' - 4"	14' - 11"	13' - 3"
	RFPI 400	18' - 0"	16' - 5"	15' - 6"	14' - 6"	19' - 7"	17' - 10"	16' - 6"	14' - 1"
	RFPI 40	18' - 7"	16' - 11"	16' - 0"	14' - 11"	20' - 2"	18' - 5"	17' - 5"	14' - 9"
	RFPI 60S	18' - 11"	17' - 4"	16' - 4"	15' - 3"	20' - 8"	18' - 10"	17' - 6"	14' - 2"
	RFPI 70	19' - 9"	18' - 0"	17' - 0"	15' - 10"	21' - 6"	19' - 7"	18' - 5"	15' - 4"
	RFPI 90	22' - 3"	20' - 3"	19' - 0"	17' - 9"	24' - 2"	22' - 0"	20' - 8"	19' - 3"
11-7/8"	RFPI 20	20' - 6"	18' - 9"	17' - 3"	15' - 5"	21' - 10"	18' - 10"	15' - 11"	12' - 8"
	RFPI 40S	21' - 5"	18' - 8"	17' - 1"	15' - 3"	21' - 6"	18' - 7"	17' - 0"	15' - 2"
	RFPI 400	21' - 5"	19' - 7"	18' - 6"	16' - 10"	23' - 4"	20' - 7"	18' - 6"	14' - 9"
	RFPI 40	22' - 1"	20' - 2"	19' - 0"	17' - 9"	24' - 1"	21' - 10"	19' - 11"	16' - 5"
	RFPI 60S	22' - 7"	20' - 8"	19' - 6"	17' - 11"	24' - 8"	21' - 11"	20' - 0"	16' - 5"
	RFPI 70	23' - 7"	21' - 6"	20' - 3"	18' - 10"	25' - 8"	23' - 5"	20' - 7"	16' - 5"
	RFPI 80S	24' - 11"	22' - 8"	21' - 4"	19' - 11"	27' - 1"	24' - 8"	23' - 2"	18' - 6"
	RFPI 90	26' - 6"	24' - 1"	22' - 8"	21' - 1"	28' - 10"	26' - 3"	24' - 8"	22' - 2"
14"	RFPI 20	23' - 4"	20' - 8"	18' - 10"	15' - 8"	23' - 10"	19' - 2"	15' - 11"	12' - 8"
	RFPI 40S	23' - 9"	20' - 6"	18' - 9"	16' - 9"	23' - 8"	20' - 5"	18' - 8"	16' - 5"
	RFPI 400	24' - 4"	22' - 3"	20' - 7"	17' - 4"	26' - 0"	22' - 3"	18' - 6"	14' - 9"
	RFPI 40	25' - 2"	22' - 11"	21' - 8"	19' - 6"	27' - 5"	23' - 10"	20' - 7"	16' - 5"
	RFPI 60S	25' - 9"	23' - 6"	22' - 0"	19' - 8"	27' - 10"	24' - 1"	20' - 7"	16' - 5"
	RFPI 70	26' - 10"	24' - 5"	23' - 0"	19' - 10"	29' - 3"	24' - 9"	20' - 7"	16' - 5"
	RFPI 80S	28' - 3"	25' - 9"	24' - 3"	21' - 2"	30' - 9"	28' - 0"	24' - 11"	19' - 11"
	RFPI 90	30' - 1"	27' - 5"	25' - 9"	23' - 2"	32' - 10"	29' - 10"	27' - 9"	22' - 2"
16"	RFPI 40S	25' - 7"	22' - 1"	20' - 2"	18' - 0"	25' - 6"	22' - 0"	20' - 1"	16' - 5"
	RFPI 400	27' - 0"	24' - 1"	21' - 9"	17' - 4"	27' - 9"	22' - 3"	18' - 6"	14' - 9"
	RFPI 40	27' - 10"	25' - 5"	23' - 4"	19' - 10"	29' - 6"	24' - 9"	20' - 7"	16' - 5"
	RFPI 60S	28' - 6"	26' - 0"	23' - 9"	19' - 10"	30' - 0"	24' - 9"	20' - 7"	16' - 5"
	RFPI 70	29' - 9"	27' - 1"	24' - 10"	19' - 10"	32' - 5"	24' - 9"	20' - 7"	16' - 5"
	RFPI 80S	31' - 4"	28' - 6"	26' - 6"	21' - 2"	34' - 2"	30' - 0"	24' - 11"	19' - 11"
	RFPI 90	33' - 4"	30' - 4"	28' - 7"	23' - 2"	36' - 5"	33' - 1"	27' - 9"	22' - 2"

Notes:

- Clear span is the clear distance between the face of supports.
- Spans are based on uniform loads as shown above. Use appropriate software (e.g. Simpson Strong-Tie® Component Solutions™) or engineering analysis for other loading.
- Web stiffeners are not required for spans shown but may be required for hangers.
- Maximum deflection is limited to L/480 for live load and L/240 for total load.
- A minimum of 1-3/4" is required for end bearing, 3-1/2" for intermediate bearing.
- Multiple Span lengths shown require adequate bottom flange lateral bracing.
- Spans are based on composite action with glued-nailed sheathing meeting the APA requirements shown in the adjacent table.
- Adhesives shall meet APA Specification AFG-01 or ASTM D3498.
- **Spans shall be reduced by 12 inches when floor sheathing is nailed only.**

	Min Thickness	Span Rating	Floor Joist Spacing
Rated Sheathing	19/32"	(40/20)	19.2" or less
Rated Sheathing	23/32"	(48/24)	24" or less
Rated Sturd-I Floor	19/32"	20" o.c.	19.2" or less
Rated Sturd-I Floor	23/32"	24" o.c.	24" or less

Web Hole Specifications

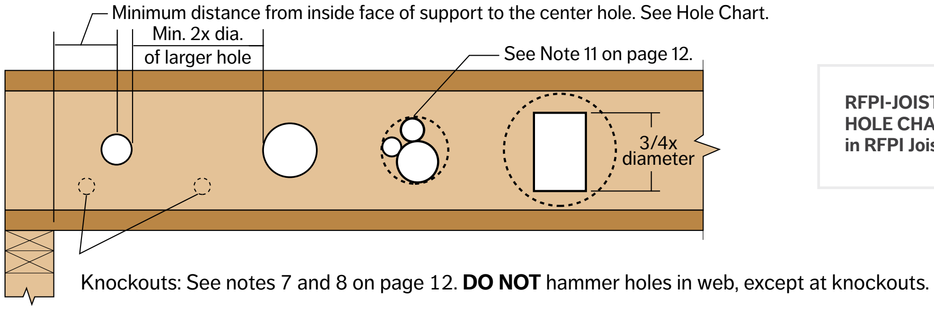
One of the benefits of using RFPI-Joists in residential floor and roof construction is that holes may be cut in the joist webs to accommodate electrical wiring, plumbing lines and other mechanical systems, therefore minimizing the depth of the floor system.

RULES FOR CUTTING HOLES IN RFPI-JOISTS

1. See chart on page 13 for allowable hole sizes and locations. The distance between the inside edge of the nearest support and the centerline of any hole shall not be less than that shown in the chart on page 13.
2. Except for cutting to length, NEVER cut, drill or notch I-joist flanges.
3. Whenever possible center holes vertically in the middle of the web. However, holes may be located vertically anywhere in the web provided a minimum of 1/8" of web remains between the edge of the hole and the flanges.
4. The maximum size hole that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4". A minimum of 1/8" should always be maintained between the top or bottom of the hole and the adjacent I-joist flange.
5. The sides of square holes or longest side of rectangular holes should not exceed three fourths of the diameter of the maximum round hole permitted at that location. **DO NOT** over-cut the sides of square or rectangular holes.
6. Where more than one hole is necessary, the distance between adjacent hole edges must be a minimum of twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole) and each hole must be sized and located in compliance with the requirements of the chart on page 13.
7. Knockouts are pre-scored holes for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2" in diameter, and are spaced approximately 16" on center along the length of the I-joist. Where possible, it is preferable to use knockouts instead of field cutting holes. For floor applications, positioning the I-joists so the knockouts are all on the bottom of the joist may ease the installation of electrical wiring or residential sprinkler systems. DO NOT hammer holes in web, except at knock outs.
8. A knockout is not considered a hole and may be utilized anywhere it occurs. It can be ignored for purposes of calculating minimum distances between holes.
9. 1-1/2" holes shall be permitted anywhere in a cantilevered section of an RFPI-Joist. Holes of greater size may be permitted subject to verification.
10. A 1-1/2" hole can be placed anywhere in the web provided that it meets the requirements of rule 6 on this page. Holes are not permitted to be cut within the area 6" off face of support and 6" vertically off bottom flange. Knockouts can be removed if they fall in this area.
11. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them (see diagram on page 13).
12. All holes shall be cut in a workman-like manner in accordance with the restrictions listed herein.

Never drill, cut or notch the flange, or over-cut the web. Holes in webs should be cut with a sharp saw. For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Start the rectangular hole by drilling a 1"-diameter hole in each of the four corners and then make the cuts between the holes to minimize damage to the I-joist.

Holes For RFPI®-Joists Used In Residential Floor/ Roof Applications



RFPI-JOIST TYPICAL HOLES - See "HOW TO USE HOLE CHART" below and "Rules for Cutting Holes in RFPI Joists" on page 12

HOLE CHART - MINIMUM DISTANCE FROM FACE OF NEAREST JOIST SUPPORT TO CENTER OF HOLE (1)(2)

Joist Depth	Joist Series	SAF(3)	Round Hole Diameter (in)														
			2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4
			Minimum Distance from Inside Face of Nearest Support to Center of Hole (ft-in) (1) (2)														
9-1/2"	RFPI 20	11.58	0'-7"	0'-8"	2'-0"	3'-6"	5'-4"	5'-9"									
	RFPI 40S	13.25	1'-2"	2'-2"	3'-3"	4'-4"	5'-9"	6'-3"									
	RFPI 400	14.08	1'-0"	2'-1"	3'-3"	4'-9"	6'-4"	6'-9"									
	RFPI 40	14.75	0'-8"	1'-11"	3'-2"	4'-9"	6'-6"	6'-11"									
	RFPI 60S	14.17	2'-0"	3'-3"	4'-8"	6'-1"	7'-7"	8'-0"									
	RFPI 70	15.33	1'-1"	2'-3"	3'-10"	5'-6"	7'-3"	7'-8"									
	RFPI 90	17.75	3'-7"	4'-11"	6'-3"	7'-8"	9'-2"	9'-6"									
11-7/8"	RFPI 20	12.67	0'-7"	0'-8"	0'-8"	1'-9"	3'-4"	3'-9"	5'-0"	6'-10"	8'-0"						
	RFPI 40S	15.17	0'-7"	0'-10"	1'-10"	2'-11"	4'-0"	4'-4"	5'-2"	6'-8"	7'-11"						
	RFPI 400	14.75	0'-7"	0'-8"	1'-7"	2'-11"	4'-4"	4'-8"	5'-10"	7'-8"	8'-10"						
	RFPI 40	16.42	0'-7"	0'-10"	2'-0"	3'-5"	4'-11"	5'-3"	6'-5"	8'-2"	9'-6"						
	RFPI 60S	16.42	0'-8"	1'-10"	3'-2"	4'-5"	5'-10"	6'-2"	7'-4"	8'-11"	10'-1"						
	RFPI 70	16.42	0'-7"	1'-0"	2'-5"	3'-10"	5'-6"	6'-0"	7'-4"	9'-4"	10'-8"						
	RFPI 80S	18.50	0'-11"	2'-4"	3'-10"	5'-4"	6'-11"	7'-4"	8'-7"	10'-4"	11'-6"						
	RFPI 90	21.08	0'-7"	1'-4"	2'-9"	4'-4"	5'-11"	6'-4"	7'-7"	9'-5"	10'-10"						
14"	RFPI 20	12.67	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	1'-1"	2'-3"	4'-2"	5'-4"	6'-1"	8'-2"	9'-11"			
	RFPI 40S	16.42	0'-7"	0'-8"	0'-8"	1'-4"	2'-5"	2'-8"	3'-6"	4'-7"	5'-5"	6'-0"	7'-7"	9'-4"			
	RFPI 400	14.75	0'-7"	0'-8"	0'-8"	0'-9"	1'-11"	2'-4"	3'-7"	5'-3"	6'-4"	7'-0"	9'-0"	10'-10"			
	RFPI 40	16.42	0'-7"	0'-8"	0'-8"	1'-3"	2'-7"	2'-11"	4'-2"	5'-11"	7'-0"	7'-9"	9'-8"	11'-7"			
	RFPI 60S	16.42	0'-7"	0'-8"	0'-8"	1'-8"	3'-2"	3'-6"	4'-9"	6'-6"	7'-8"	8'-4"	10'-4"	12'-2"			
	RFPI 70	16.42	0'-7"	0'-8"	0'-8"	1'-6"	3'-1"	3'-6"	4'-10"	6'-7"	7'-9"	8'-6"	10'-11"	12'-11"			
	RFPI 80S	19.92	0'-7"	0'-9"	2'-2"	3'-7"	5'-1"	5'-5"	6'-7"	8'-5"	9'-7"	10'-4"	12'-5"	14'-0"			
	RFPI 90	22.17	0'-7"	0'-8"	1'-3"	2'-11"	4'-7"	5'-1"	6'-5"	8'-3"	9'-5"	10'-2"	12'-3"	14'-0"			
16"	RFPI 40S	16.42	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	1'-5"	2'-9"	3'-7"	4'-1"	5'-6"	6'-7"	7'-0"	8'-9"	10'-9"
	RFPI 400	14.75	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	0'-10"	1'-11"	3'-1"	3'-10"	5'-11"	7'-6"	8'-0"	10'-4"	12'-3"
	RFPI 40	16.42	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	1'-10"	3'-6"	4'-6"	5'-2"	6'-11"	8'-5"	9'-0"	11'-5"	13'-4"
	RFPI 60S	16.42	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	1'-10"	3'-6"	4'-6"	5'-2"	7'-3"	8'-11"	9'-6"	11'-10"	13'-9"
	RFPI 70	16.42	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	2'-1"	4'-2"	5'-6"	6'-4"	8'-7"	10'-5"	11'-0"	13'-6"	15'-6"
	RFPI 80S	19.92	0'-7"	0'-8"	0'-8"	1'-2"	2'-10"	3'-3"	4'-6"	6'-3"	7'-5"	8'-1"	9'-11"	11'-5"	11'-11"	14'-3"	16'-5"
	RFPI 90	22.17	0'-7"	0'-8"	0'-8"	0'-10"	2'-9"	3'-2"	4'-7"	6'-7"	7'-10"	8'-7"	10'-8"	12'-4"	12'-11"	15'-2"	17'-1"

How to Use Hole Chart

1. Read across the top of Hole Chart to the desired hole size.
2. Follow this column down to the row that represents the I-joist depth and designation. This number indicates the minimum distance from the face of the nearest support to the centerline of the hole.

Example: Need a 4-1/2-inch hole in an 11-7/8" RFPI®-400 joist: From Hole Chart,

For a 4-inch round hole, the minimum distance is 1'– 7".
For a 5-inch round hole, the minimum distance is 2'– 11".
Therefore the minimum distance for the 4-1/2-in round hole is 2'– 3" (halfway between 1'-7" and 2'-11").

Notes:

1. Distances in this hole chart are based on uniformly loaded I-joists and allowable I-joist reactions **without web stiffeners** on minimum required bearing lengths. This chart conservatively accounts for the worst case created by the allowable **simple or multiple** floor spans shown elsewhere in this guide at on-center spacings of 12", 16", 19.2" and 24" with floor loads of 40 psf live load + 10 psf dead load or 40 psf live load + 20 psf dead load. **Holes in conditions that fall outside of the hole chart parameters (including the use of web stiffeners, longer bearing lengths or other loading conditions) may still be acceptable. The most accurate method of determining the acceptability of a given hole is the use of appropriate software (e.g. Simpson Strong-Tie® Component Solutions™) or engineering analysis for the actual condition.**
2. Hole location distance is measured from inside face of nearest support to center of hole.
3. SAF = Span Adjustment Factor for optional hole calculation, used as defined on this page.

Optional Hole Calculation

The Hole Chart is based on the I-joists being used at their maximum span. If the I-joists are placed at less than their full allowable span the minimum distance from the centerline of the hole to the face of the nearest joist support (D) as given above may be reduced as follows:

$$D_{reduced} = \frac{L_{actual}}{SAF} \times D$$

Where:

$D_{reduced}$ = Minimum distance from the inside face of the nearest joist support to center of hole, reduced for less-than-maximum span applications (ft).

L_{actual} = The actual measured span distance between the inside faces of supports (ft) (for multi-span joist, use the longest span for L_{actual}).

SAF = Span Adjustment Factor given in chart.

D = The minimum distance from the inside face of the nearest joist support to center of hole from Hole Chart above.

If $\frac{L_{actual}}{SAF}$ is greater than 1.0, use 1.0 in the above calculation.

Rectangular Duct Chases

A duct chase is a large rectangular hole that is often required within the web of an I-joist to provide passage for ventilation ducts. While rectangular holes can be cut in the webs of I-joists using the Rules For Cutting Holes in RFPI®-Joists discussed on page 12, the size of rectangular holes generated by this method is often insufficient for this use. **The charts below have been generated specifically for duct chase applications.**

SIMPLE SPAN-MINIMUM DISTANCE FROM FACE OF NEAREST JOIST SUPPORT TO CENTER OF DUCT CHASE (1)(2)(3)

Joist Depth	Joist Series	Minimum Distance from Inside Face of Nearest Support to Center of Duct Chase (ft-in)								
		Duct Chase Length (in)								
		8	10	12	14	16	18	20	22	24
9-1/2"	RFPI-20	6'-3"	6'-7"	6'-11"	7'-3"	7'-8"	8'-1"	8'-6"		
	RFPI-40S	4'-11"	5'-4"	5'-9"	6'-3"	6'-8"	7'-2"	7'-7"	8'-1"	8'-8"
	RFPI-400	6'-3"	6'-7"	6'-11"	7'-4"	7'-9"	8'-3"	8'-10"		
	RFPI-40	5'-9"	6'-1"	6'-6"	6'-10"	7'-2"	7'-6"	7'-11"	8'-5"	9'-0"
	RFPI-60S	6'-0"	6'-4"	6'-8"	7'-0"	7'-4"	7'-9"	8'-2"	8'-8"	9'-3"
	RFPI-70	6'-4"	6'-8"	7'-0"	7'-4"	7'-9"	8'-2"	8'-7"	9'-1"	9'-9"
	RFPI-90	6'-7"	6'-11"	7'-4"	7'-8"	8'-0"	8'-4"	8'-9"	9'-2"	9'-8"
11-7/8"	RFPI-20	8'-0"	8'-4"	8'-9"	9'-2"	9'-8"	10'-1"			
	RFPI-40S	6'-3"	6'-9"	7'-3"	7'-9"	8'-4"	8'-11"	9'-6"	10'-2"	
	RFPI-400	7'-11"	8'-4"	8'-9"	9'-2"	9'-9"	10'-4"			
	RFPI-40	7'-6"	7'-10"	8'-2"	8'-7"	8'-11"	9'-5"	9'-11"	10'-7"	
	RFPI-60S	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-9"	10'-3"	10'-10"	
	RFPI-70	8'-2"	8'-6"	8'-11"	9'-4"	9'-9"	10'-3"	10'-10"	11'-6"	
	RFPI-80S	7'-11"	8'-3"	8'-7"	9'-0"	9'-4"	9'-8"	10'-2"	10'-8"	11'-3"
	RFPI-90	8'-7"	9'-0"	9'-4"	9'-8"	10'-1"	10'-6"	11'-0"	11'-7"	12'-2"
14"	RFPI-20	9'-6"	9'-11"	10'-5"	10'-11"	11'-4"				
	RFPI-40S	7'-6"	8'-0"	8'-7"	9'-2"	9'-9"	10'-4"	10'-11"	11'-7"	
	RFPI-400	9'-5"	9'-11"	10'-4"	10'-11"	11'-6"	12'-1"			
	RFPI-40	8'-11"	9'-4"	9'-9"	10'-2"	10'-8"	11'-2"	11'-10"	12'-5"	
	RFPI-60S	9'-2"	9'-7"	10'-0"	10'-6"	11'-0"	11'-7"	12'-2"	12'-10"	
	RFPI-70	9'-9"	10'-2"	10'-7"	11'-1"	11'-7"	12'-3"	12'-10"		
	RFPI-80S	9'-4"	9'-9"	10'-2"	10'-7"	11'-1"	11'-6"	12'-0"	12'-7"	13'-3"
	RFPI-90	10'-3"	10'-8"	11'-1"	11'-7"	12'-1"	12'-7"	13'-1"	13'-9"	14'-5"
16"	RFPI-40S	8'-8"	9'-3"	9'-10"	10'-5"	11'-0"	11'-8"	12'-5"	13'-3"	
	RFPI-400	10'-10"	11'-4"	12'-0"	12'-7"	13'-2"				
	RFPI-40	10'-3"	10'-9"	11'-2"	11'-8"	12'-3"	12'-10"	13'-6"		
	RFPI-60S	10'-7"	11'-1"	11'-7"	12'-0"	12'-8"	13'-3"	13'-11"		
	RFPI-70	11'-3"	11'-9"	12'-3"	12'-9"	13'-5"	14'-0"	14'-8"		
	RFPI-80S	10'-9"	11'-3"	11'-9"	12'-3"	12'-9"	13'-3"	13'-10"	14'-6"	15'-2"
	RFPI-90	12'-0"	12'-5"	12'-10"	13'-4"	13'-10"	14'-5"	15'-1"	15'-9"	16'-5"

MULTIPLE SPAN-MINIMUM DISTANCE FROM FACE OF NEAREST JOIST SUPPORT TO CENTER OF DUCT CHASE (1)(2)(3)

Joist Depth	Joist Series	Minimum Distance from Inside Face of Nearest Support to Center of Duct Chase (ft-in)								
		Duct Chase Length (in)								
		8	10	12	14	16	18	20	22	24
9-1/2"	RFPI-20	9'-5"								
	RFPI-40S	7'-5"	7'-11"	8'-6"	9'-1"	9'-7"				
	RFPI-400	9'-4"	9'-10"							
	RFPI-40	8'-10"	9'-3"	9'-8"	10'-1"					
	RFPI-60S	9'-0"	9'-5"	9'-11"						
	RFPI-70	9'-7"	10'-0"	10'-6"						
	RFPI-90	10'-3"	10'-8"	11'-0"	11'-5"	11'-11"				
11-7/8"	RFPI-20									
	RFPI-40S	9'-4"	10'-0"	10'-8"	11'-5"					
	RFPI-400									
	RFPI-40	11'-3"	11'-8"							
	RFPI-60S	11'-5"	12'-1"							
	RFPI-70	12'-5"								
	RFPI-80S	12'-0"	12'-6"	12'-11"	13'-5"					
	RFPI-90	13'-2"	13'-8"	14'-2"						
14"	RFPI-20									
	RFPI-40S	11'-2"	11'-11"	12'-8"						
	RFPI-400									
	RFPI-40	13'-6"								
	RFPI-60S	13'-10"								
	RFPI-70									
	RFPI-80S	14'-6"	15'-0"							
	RFPI-90	15'-10"	16'-4"							
16"	RFPI-40S	12'-9"	13'-5"							
	RFPI-400									
	RFPI-40	15'-1"								
	RFPI-60S	15'-6"								
	RFPI-70									
	RFPI-80S	16'-9"								
	RFPI-90									

Chart Notes:

1. Top chart is applicable to uniformly loaded Simple Span conditions only. Bottom chart is applicable to uniformly loaded Multiple Span conditions only.
2. Duct chase location distance is measured from inside face of nearest support to center of duct chase.
3. Distances in these duct charts are based on uniformly loaded I-joists and allowable I-joist reactions **without web stiffeners** on minimum required bearing lengths. These charts conservatively account for the worst case created by the allowable **Simple Spans (top chart) or Multiple Spans (bottom chart)** shown elsewhere in this guide at on-center spacings of 12", 16", 19.2" and 24" with floor loads of 40 psf live load + 10 psf dead load or 40 psf live load + 20 psf dead load. **Ducts in conditions that fall outside of the duct chart parameters (including the use of web stiffeners, longer bearing lengths or other loading conditions) may still be acceptable. The most accurate method of determining the acceptability of a given duct is the use of appropriate software (e.g. Simpson Strong-Tie® Component Solutions™) or engineering analysis for the actual condition.**

Rules for cutting duct chases in RFPI-Joists:

a. The maximum length of duct chase shall be as shown in the charts above.
b. Except for cutting to length, I-joist top and bottom flanges must NEVER be cut, notched or otherwise modified.
c. The maximum depth of the duct chases shall equal the clear distance between the flanges of the I-joist minus 1/4". A minimum of 1/8" should always be maintained between the top or the bottom of the chase and the adjacent I-joist flange.
d. When a duct chase is being placed within the web of an I-joist in conjunction with additional holes, the edge of the holes shall not be placed any closer to the edge of the duct than two times the length of the duct. All holes must be sized in accordance with the chart on page 13.
e. A knockout is not considered a hole and may be utilized wherever it occurs and may be ignored for purposes of calculating minimum distances between holes and duct chases.
f. All duct chases shall be cut in a workman-like manner in accordance with the restrictions listed above.

Load Development

LOAD DEVELOPMENT FOR RFPI-JOISTS WITH UNIFORM LOAD

STEP ONE: CALCULATE THE TRIBUTARY WIDTH

Tributary Width (or Trib width) = Half of the distance to the next supporting member on both sides of the joist. It represents the width of the floor the joist is responsible to support.

Trib Width = (O.C.÷2) + (O.C.÷2) = O.C. (expressed in units of feet)

In the diagram below, if the O.C. spacing equals 16", the Trib Width = 16"/12 = 1.33'

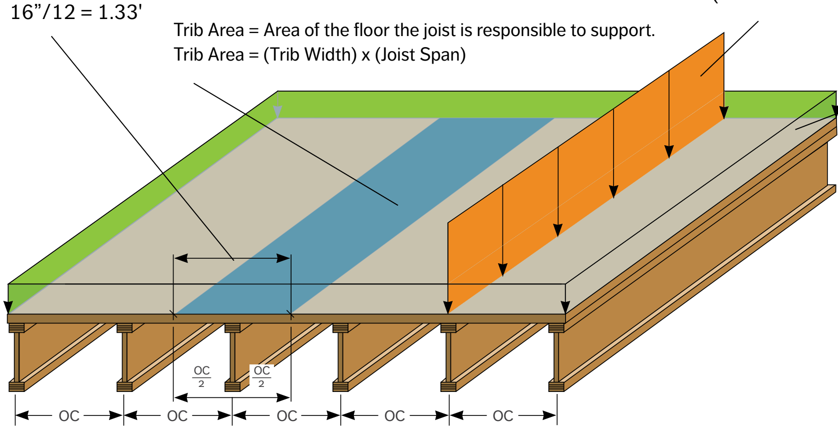
STEP TWO: CALCULATE THE PLF ON THE JOIST

Pounds per Lineal Foot (or "PLF") = (PSF Load) x (Trib Width). This is the loading that the joist "feels" being applied along the top flange.

$PLF_{Live\ Load}$ = (40 PSF) x (1.33') = 53 PLF Live Load

$PLF_{Total\ Load}$ = (50 PSF) x (1.33') = 67 PLF Total Load

(Use these numbers to size the RFPI-Joist from the PLF table on page 16)



Design Load

for floor given in pounds per square foot (PSF) for entire floor. Typical Residential Value is:

40 PSF Live Load

10 PSF Dead Load

- **Pounds per Lineal Foot (PLF)**
- **Trib Area of I-joist**
- **Design Load - Pounds per Square Foot (PSF)**

LOAD DEVELOPMENT FOR RFPI-JOISTS WITH LOAD BEARING WALL

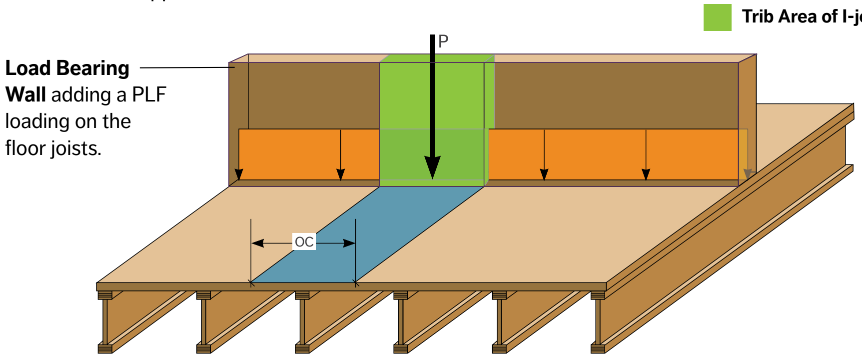
STEP ONE

Calculate the portion of the wall load carried by each joist. This is also determined by the joist O.C. spacing and is given by:

$P_{Live\ Load} = (PLF)_{Wall\ Live\ Load} \times (O.C.)$
$P_{Total\ Load} = (PLF)_{Wall\ Total\ Load} \times (O.C.)$

Where: O.C. = Joist on-center spacing (feet)
PLF = Wall loading (pounds per lineal foot)
P = Concentrated load supported by joist (pounds)

As far as each joist is concerned, it feels the wall as a concentrated load (units of pounds). The greater the on-center spacing, the greater the portion of wall it must support.



STEP TWO

Calculate the equivalent uniform PLF load due to this concentrated wall load. This equivalent PLF load will allow you to safely size the joist using the PLF table on page 16 no matter where the wall is located over the joists. It is given by:

$PLF_{EQ\ Live\ Load} = 2P_{Live\ Load} \div L$ $PLF_{EQ\ Total\ Load} = 2P_{Total\ Load} \div L$

For example, assume the wall was applying a 400 PLF total load on the joists. If the joists are spaced at 16" O.C. and span 20 ft, then:

- **PLF Wall Load**
- **Portion of PLF wall load carried by joist**
- **Trib Area of I-joist**

$P_{Live\ Load} = \frac{4}{5}$(400 PLF) x (1.33') = 426 lbs

$P_{Total\ Load}$ = (400 PLF) x (1.33') =532 lbs

$PLF_{EQ\ Live\ Load} = \frac{2 \times 426\ lbs}{20'} = 43\ PLF$

$PLF_{EQ\ Total\ Load} = \frac{2 \times 532\ lbs}{20'} = 54\ PLF$

(Assuming a 40/10 loading from above)

These PLF loads are in addition to the original PSF Design Loads and must be added before using the table. Using the example from above, these joists should be sized to carry:

Live Load PLF: 53 PLF + 43 PLF = 96 PLF Live Load
Total Load PLF: 67 PLF + 54 PLF = 121 PLF Total Load

If a joist could not be sized, redo this with a smaller on-center spacing or use Simpson Strong-Tie® Component Solutions™ to size the joist more accurately.

PSF TO PLF CONVERSION – LOAD IN POUNDS PER LINEAL FOOT (PLF)

O.C. Spacing		Load in Pounds per Square Foot (PSF)											
(in)	**(ft)**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**
12	1.00	20	25	30	35	40	45	50	55	60	65	70	75
16	1.33	27	33	40	47	53	60	67	73	80	87	93	100
19.2	1.60	32	40	48	56	64	72	80	88	96	104	112	120
24	2.00	40	50	60	70	80	90	100	110	120	130	140	150

O.C. spacing [ft] x load [PSF] = load [PLF]. See load development above.

Allowable Floor Uniform Load For RFPI®-Joists (plf)

Joist Clear Span (ft)	RFPI 20						RFPI 40S								RFPI 400							
	9-1/2"		11-7/8"		14"		9-1/2"		11-7/8"		14"		16"		9-1/2"		11-7/8"		14"		16"	
	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total
6	-	226	-	247	-	246	-	275	-	319	-	319	-	318	-	274	-	287	-	287	-	286
7	-	195	-	212	-	212	-	237	-	274	-	274	-	274	-	236	-	247	-	247	-	246
8	-	171	-	186	-	186	-	208	-	241	-	240	-	240	-	207	-	216	-	216	-	216
9	-	152	-	166	-	165	-	185	-	214	-	214	-	214	-	184	-	193	-	192	-	192
10	-	137	-	149	-	149	-	167	-	193	-	193	-	192	-	166	-	174	-	173	-	173
11	116	125	-	136	-	135	133	151	-	175	-	175	-	175	133	151	-	158	-	158	-	157
12	91	114	-	124	-	124	105	139	-	161	-	161	-	160	105	138	-	145	-	145	-	144
13	73	105	-	115	-	115	84	123	139	148	-	148	-	148	84	128	-	134	-	133	-	133
14	59	98	99	107	-	106	69	106	113	137	-	138	-	137	69	119	113	124	-	124	-	124
15	49	91	82	99	-	99	57	92	94	120	-	128	-	128	57	111	94	116	-	115	-	115
16	41	80	68	93	-	93	47	81	79	105	112	120	-	120	47	92	79	108	-	108	-	108
17	34	67	58	88	84	87	40	71	66	93	95	112	-	113	40	77	66	102	96	102	-	102
18	29	56	49	83	71	82	34	63	56	83	81	100	-	106	34	65	56	96	82	96	-	96
19	-	-	42	77	61	78	29	55	48	74	70	89	93	101	29	56	48	91	70	91	-	91
20	-	-	36	69	53	74	-	-	42	67	60	80	81	94	-	-	42	81	61	86	82	86
21	-	-	32	61	46	70	-	-	36	60	52	73	71	85	-	-	36	70	53	82	71	82
22	-	-	28	53	40	67	-	-	32	55	46	66	62	77	-	-	32	61	46	78	63	78
23	-	-	-	-	36	62	-	-	28	50	41	60	55	70	-	-	28	54	41	73	55	75
24	-	-	-	-	31	57	-	-	-	-	36	55	48	64	-	-	-	-	36	67	49	71
25	-	-	-	-	28	52	-	-	-	-	32	51	43	59	-	-	-	-	32	62	44	68

Joist Clear Span (ft)	RFPI 40								RFPI 60S							
	9-1/2"		11-7/8"		14"		16"		9-1/2"		11-7/8"		14"		16"	
	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total
6	-	287	-	319	-	319	-	318	-	275	-	319	-	319	-	318
7	-	247	-	274	-	274	-	274	-	237	-	274	-	274	-	274
8	-	217	-	241	-	240	-	240	-	208	-	241	-	240	-	240
9	-	193	-	214	-	214	-	214	-	185	-	214	-	214	-	214
10	-	174	-	193	-	193	-	193	-	167	-	193	-	193	-	192
11	145	158	-	176	-	175	-	175	-	151	-	175	-	175	-	175
12	115	145	-	161	-	161	-	161	123	139	-	161	-	161	-	160
13	93	134	-	149	-	148	-	148	99	128	-	148	-	148	-	148
14	76	124	124	138	-	138	-	138	81	119	133	138	-	138	-	137
15	62	116	103	129	-	128	-	128	67	111	110	129	-	128	-	128
16	52	102	86	121	-	120	-	120	56	104	92	120	-	120	-	120
17	44	85	73	113	105	113	-	113	47	91	78	113	112	113	-	113
18	37	72	62	107	90	107	-	107	40	77	67	107	96	107	-	106
19	32	62	53	101	77	101	-	101	34	66	57	101	83	101	-	101
20	28	53	46	90	67	96	90	96	30	57	50	93	72	96	-	96
21	-	-	40	78	58	91	78	91	-	-	43	84	63	91	84	91
22	-	-	35	68	51	87	69	87	-	-	38	73	55	87	74	87
23	-	-	31	59	45	83	61	83	-	-	33	64	48	83	65	83
24	-	-	27	52	40	76	54	79	-	-	30	56	43	77	58	79
25	-	-	-	-	36	68	48	76	-	-	26	50	38	71	52	76
26	-	-	-	-	32	61	43	73	-	-	-	-	34	65	46	73
27	-	-	-	-	28	54	38	68	-	-	-	-	31	58	41	70
28	-	-	-	-	-	-	35	63	-	-	-	-	28	52	37	65
29	-	-	-	-	-	-	31	59	-	-	-	-	-	-	34	61
30	-	-	-	-	-	-	28	54	-	-	-	-	-	-	31	57

To Use PLF Table:

1. Select the span required.
2. Compare the design total load (plf) to the *Total* column and compare the design live load (plf) to the *Live* column.
3. Select a product that **meets or exceeds both the design total and live loads.** When no value is shown in the Live column, Total load will govern.

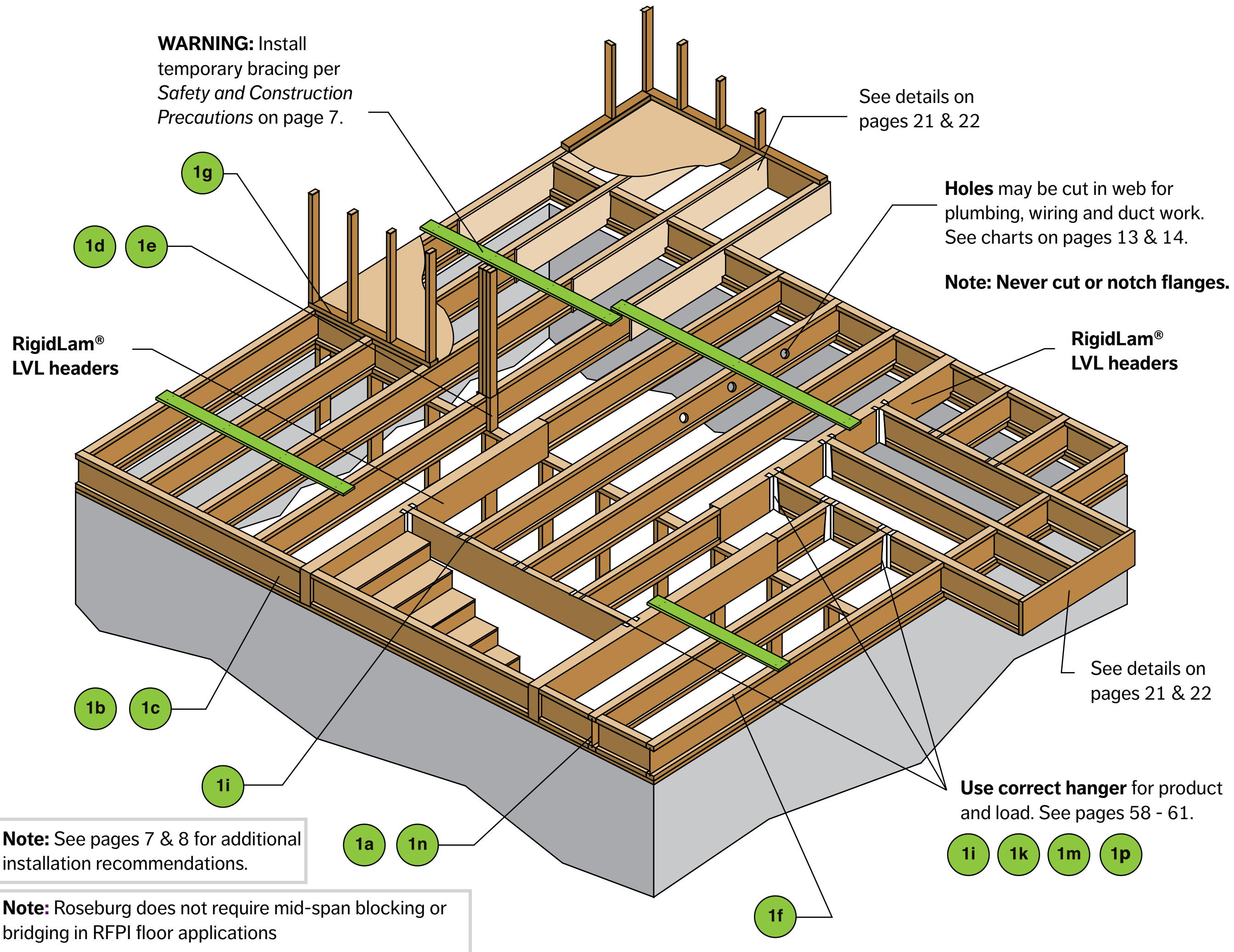
General Notes:

1. Table values apply to uniformly loaded simple or multiple span joists.
2. Clear span is the clear distance between the face of supports.
3. *Live* load column is based on an L/480 deflection limit.
4. An L/480 live load deflection limit is recommended (see Floor System Performance on page 6). For L/360 (minimum stiffness allowed by code), multiply the L/480 value by 1.33.
5. *Total* load column is based on an L/240 deflection limit.
6. Verify that the deflection criteria conform to local building code requirements.
7. Total load is based on 100% duration of load.
8. Minimum end bearing length is 1-3/4". Minimum intermediate bearing length is 3-1/2".
9. Web stiffeners are not required for loads shown.
10. This table does not account for added stiffness from glued or nailed sheathing.
11. Use appropriate software (e.g. Simpson Strong-Tie® Component Solutions™) or engineering analysis to analyze multiple span joists if the length of any span is less than half the length of an adjacent span.
12. Use appropriate software or engineering analysis to analyze conditions outside of the scope of this table such as cantilevers and concentrated loads.
13. Provide lateral support at bearing points and continuous lateral support along the compression flange of each joist.
14. For double joists, double the table values and connect the joists per the detail on page 22.
15. For proper installation procedures refer to the appropriate sections in this publication.

Joist Clear Span (ft)	RFPI 70								RFPI 80S						RFPI 90							
	9-1/2"		11-7/8"		14"		16"		11-7/8"		14"		16"		9-1/2"		11-7/8"		14"		16"	
	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total	Live	Total
6	-	298	-	319	-	318	-	318	-	358	-	384	-	384	-	385	-	428	-	427	-	427
7	-	256	-	274	-	274	-	274	-	308	-	331	-	330	-	331	-	368	-	368	-	367
8	-	225	-	240	-	240	-	240	-	270	-	290	-	290	-	290	-	323	-	322	-	322
9	-	200	-	214	-	214	-	214	-	240	-	258	-	258	-	258	-	287	-	287	-	287
10	-	180	-	193	-	193	-	192	-	216	-	232	-	232	-	233	-	259	-	258	-	258
11	-	164	-	175	-	175	-	175	-	197	-	211	-	211	-	212	-	235	-	235	-	235
12	138	150	-	161	-	161	-	160	-	180	-	194	-	193	191	194	-	216	-	215	-	215
13	112	139	-	148	-	148	-	148	-	166	-	179	-	179	156	179	-	199	-	199	-	199
14	91	129	-	138	-	138	-	137	-	154	-	166	-	166	129	166	-	185	-	185	-	184
15	76	120	124	129	-	128	-	128	-	144	-	155	-	154	107	155	172	173	-	172	-	172
16	63	113	104	120	-	120	-	120	122	135	-	145	-	145	90	145	146	162	-	161	-	161
17	53	104	88	113	-	113	-	113	104	127	-	136	-	136	77	137	124	152	-	152	-	151
18	45	88	76	107	-	107	-	106	89	120	127	129	-	128	65	127	107	143	-	143	-	143
19	39	76	65	101	94	101	-	101	77	113	109	122	-	121	56	109	92	136	131	135	-	135
20	34	65	56	96	81	96	-	96	67	107	95	115	-	115	49	94	80	129	114	129	-	128
21	29	56	49	91	71	91	-	91	58	102	83	110	-	110	43	82	70	123	100	122	-	122
22	-	-	43	83	62	87	84	87	51	97	73	105	98	104	37	71	62	117	88	117	-	116
23	-	-	38	73	55	83	74	83	45	86	65	100	87	100	33	62	55	105	78	111	104	111
24	-	-	34	64	49	79	66	79	40	76	58	96	77	95	29	55	49	93	70	107	93	106
25	-	-	30	57	44	76	59	76	36	67	51	92	69	92	-	-	43	83	62	102	83	102
26	-	-	27	51	39	73	53	73	32	60	46	88	62	88	-	-	39	74	56	98	74	98
27	-	-	-	-	35	67	47	70	29	53	41	78	55	85	-	-	35	66	50	94	67	94
28	-	-	-	-	32	60	43	68	-	-	37	70	50	81	-	-	31	59	45	86	61	91
29	-	-	-	-	29	54	39	65	-	-	34	63	45	78	-	-	28	53	41	78	55	87
30	-	-	-	-	-	-	35	63	-	-	31	57	41	76	-	-	-	-	37	70	50	84

Floor Framing & Construction Details

Some framing elements such as blocking panels have been omitted for clarity.



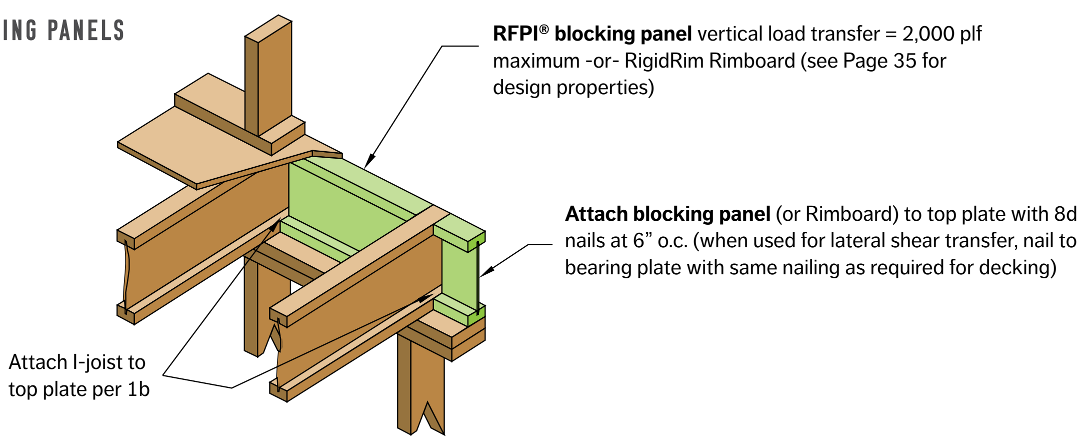
Note: See pages 7 & 8 for additional installation recommendations.

Note: Roseburg does not require mid-span blocking or bridging in RFPI floor applications

TYPICAL RFPI-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

All nails shown in the details below are assumed to be common nails unless otherwise noted. 10d box nails may be substituted for 8d common nails shown in details. If nails must be installed into the sides of LVL flanges, see table on page 8 for "Recommended Nail Size and Spacing". Individual components not shown to scale for clarity.

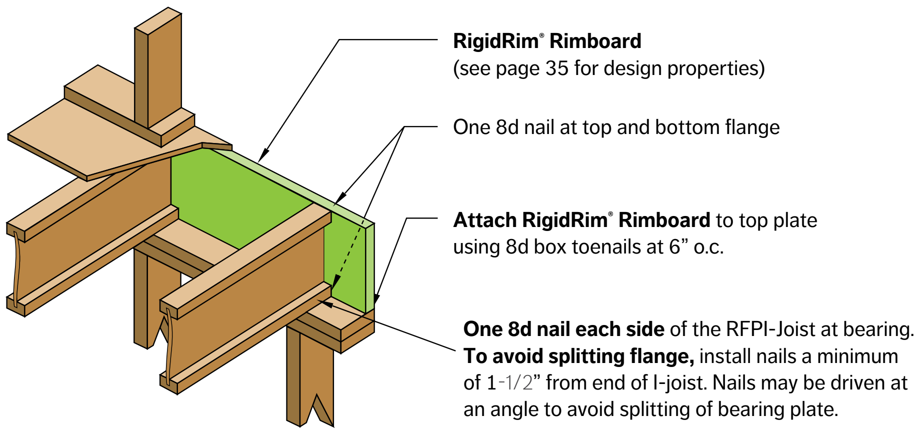
1a BLOCKING PANELS

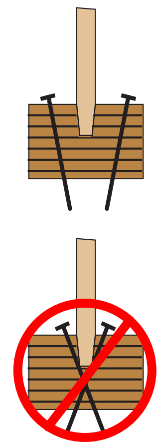


Floor Framing & Construction Details

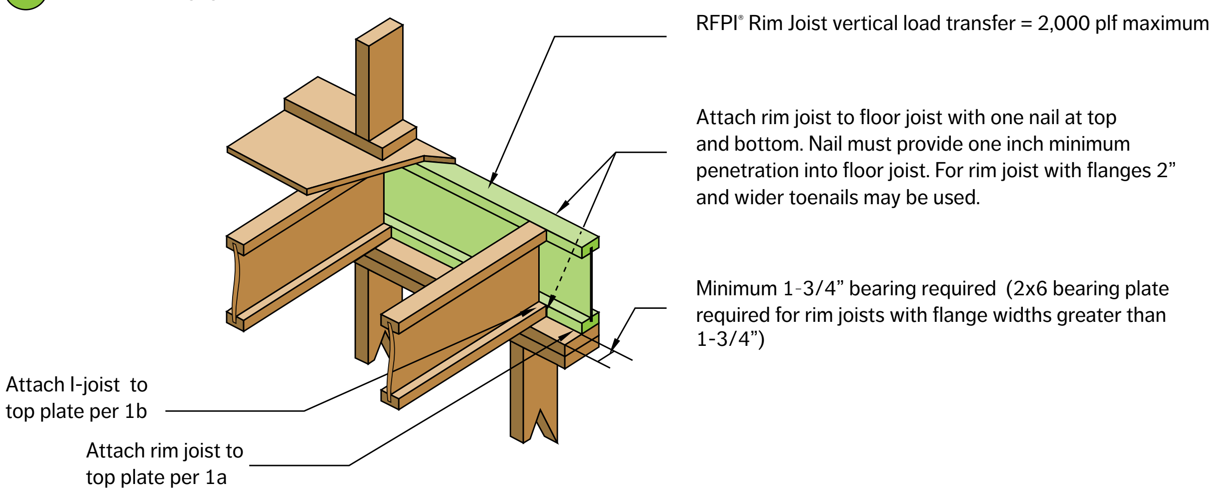
Some framing elements such as blocking panels have been omitted for clarity.

1b RIGIDRIM® RIMBOARD





1c RFPI® RIM JOIST



BLOCKING PANELS AND RIM JOIST

Blocking panels and rim joist prevent floor joists from overturning and help transfer loads through the floor system into the structure below.

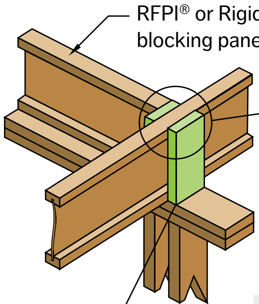
Due to differences in depth and possible shrinkage, common framing lumber set on edge is unacceptable as blocking. I-joist blocking panels must be cut to the proper length to fit between the I-joists, and their depth must match the depth of the I-joists.

Blocking panels may be used:

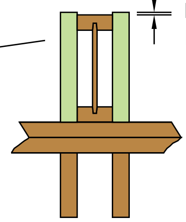
1. To stabilize I-joists laterally at supports, as shown in Figures 1a and 1g. Lateral support is required during installation and is necessary to obtain design carrying capacity.
2. To transmit vertical loads up to 2,000 plf per blocking panel in accordance with Figures 1a, 1c, 1f, and 1g.
3. For closures such as that shown in Figures 1a and 1e.
4. To transmit lateral forces to shear walls. Shear transfer nailing into the flanges must be specified by the building designer.
5. To provide lateral stability to walls.
6. Do not connect deck ledgers to web of blocking panels or rim joist.

1d SQUASH BLOCK DETAIL

RFPI® or RigidRim® Rimboard blocking panel per Detail 1g



Cut squash blocks 1/16" longer than I-Joist depth

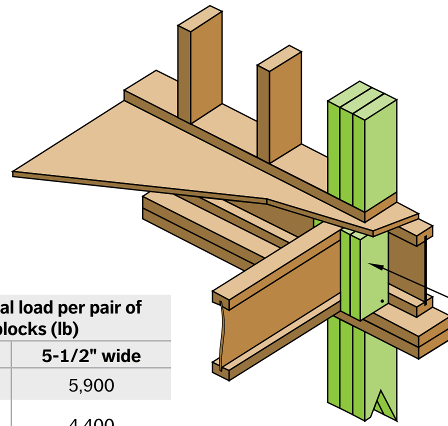


Squash block

Provide lateral bracing per Detail 1a, 1b, or 1c

Pair of Squash Blocks	Maximum vertical load per pair of squash blocks (lb)	
	3-1/2" wide	5-1/2" wide
2x lumber	3,800	5,900
1-1/8" APA Rim Board, Rim Board Plus, or Rated Sturd-I-Floor 48 o.c.	2,800	4,400
1" APA Rim Board or Rated Sturd-I-Floor 32 o.c.	1,900	3,000

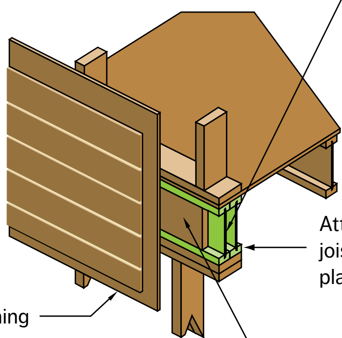
1e BEARING BLOCK DETAIL



Solid Block all posts from above to bearing below. Install bearing blocks per Detail 1d. Match bearing area of blocks below to post above.

1f RIM JOIST AT PARALLEL WALL

Use single I-joist for loads up to 2,000 plf, double I-joists for loads up to 4,000 plf (filler block not required)



Attach rim joist(s) to top plate per 1a

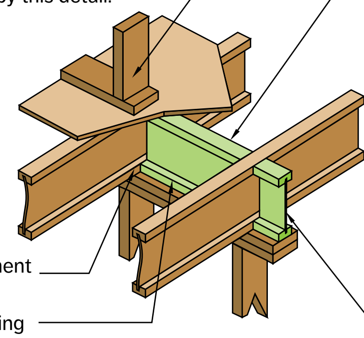
Wall sheathing as required

Provide backer for siding attachment unless nailable sheathing is used.

RigidRim® Rimboard may be used in lieu of I-joists. Backer is not required when RigidRim® Rimboard is used.

1g RFPI BLOCKING PANELS AT INTERIOR SUPPORT

Load bearing wall above shall align vertically with the wall below. Other conditions such as offset walls are not covered by this detail.



Roseburg requires blocking over all interior supports under load-bearing walls or when floor joists are not continuous over supports. In addition, blocking may be required at interior supports by project designer or by code for seismic design.

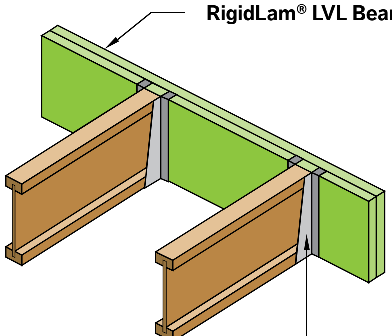
Joist attachment per detail 1b

Attach blocking to top plate per 1a

RFPI® blocking panel vertical load transfer = 2,000 plf maximum -or- RigidRim Rimboard (see Page 35 for design properties)

1i HANGER TO LVL BEAM DETAIL

RigidLam® LVL Beam



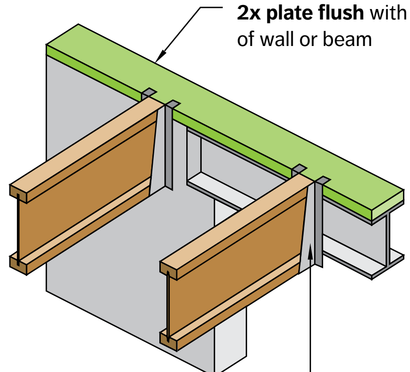
Top- or face-mounted hanger installed per hanger manufacturer's recommendations

Note: Unless hanger sides laterally support the top flange, web stiffeners shall be used. (See Figure B on page 24)

See pages 41 and 42 for details on attaching multiple ply LVL beams.

1k HANGER TO 2X PLATE DETAIL

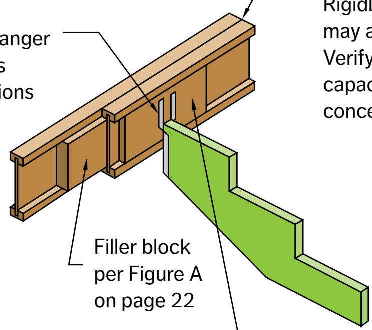
2x plate flush with inside face of wall or beam



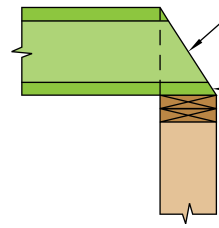
Top-mounted hanger installed per hanger manufacturer's recommendations

Note: Unless hanger sides laterally support the top flange, web stiffeners shall be used. (See Figure B on page 24)

1m STRINGER TO JOIST DETAIL

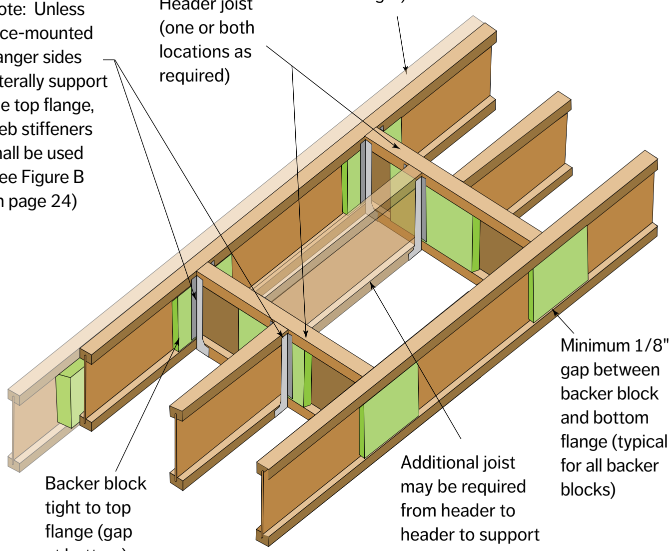


1n BEVEL CUTS ON I-JOIST



Note: Blocking required at bearing for lateral support, not shown for clarity.

1p HEADER DETAIL



BACKER BLOCK DEPTH

Joist Depth	9-1/2"	11-7/8"	14"	16"
Top Mount Hangers - Min Backer Block Depth	5-1/2"	5-1/2"	7-1/4"	7-1/4"
Face Mount Hangers - Req'd Backer Block Depth	6-1/4"	8-5/8"	10-3/4"	12-3/4"

BACKER BLOCK AND HEADER DETAIL

Backer block required for face-mount hangers (both sides of I-joist) & when top mount hanger load exceeds 250 lbs

See tables for backer block thickness & depth.

Install backer block tight to the top flange.

Attach backer block to web with 16 - 10d common nails, clinched. See table for maximum capacity for this detail.

Backer block must be wide enough to permit required nailing without splitting (min width of 12" recommended)

GENERAL NOTES:

For hanger capacity see hanger manufacturer recommendations.

Verify I-joist capacity to support concentrated load from "header joist" in addition to all other loads.

If a double I-joist is required to support "header joist" load, refer to page 22 for double I-joist connection guidelines.

Before installing a backer block to a double I-joist, drive four additional 10d nails from both sides of double I-joist through the webs and filler block at backer block location. Clinch nails.

I-Joist Flange Width	Backer block Material Thickness Required[(a)(b)]	Max. load capacity using 16-10d com. nails
1-3/4"	23/32"	975 lbs
2-1/16"	7/8"	1,135 lbs
2-5/16"	1"	1,250 lbs
2-1/2"	1-1/8"	1,250 lbs
3-1/2"	1-1/2"	1,250 lbs

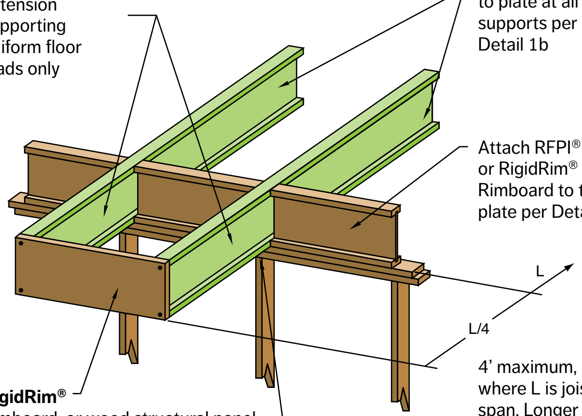
(a) Minimum grade for backer material shall be Utility grade SPF or better for solid sawn lumber and Rated Sheathing grade for wood structural panels.

(b) Glue 2-ply backer blocks together with construction grade adhesive (ASTM D-3498)

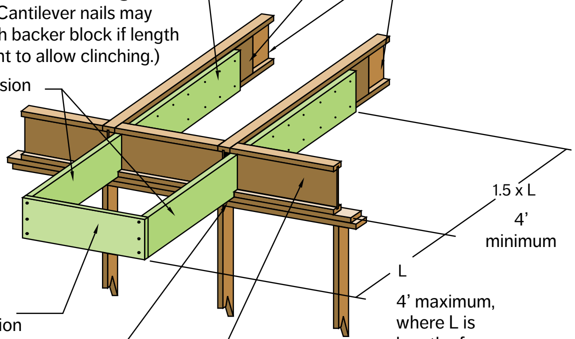
Cantilever Details

Please refer to note 6 on page 8.

RFPI®-JOIST INTERIOR CANTILEVER DETAIL



LUMBER CANTILEVER DETAIL FOR EXTERIOR AND INTERIOR BALCONIES

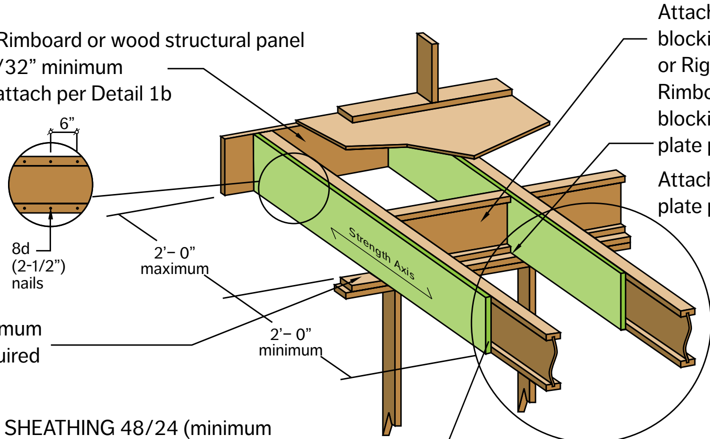


(1) See APA Technical Topic TT-125 for additional information regarding required size, grade and design considerations for lumber cantilevers.

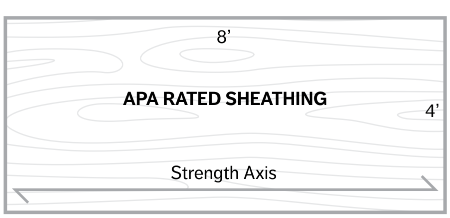
CANTILEVER DETAIL FOR VERTICAL BUILDING OFFSET - (REFER TO TABLE ON PAGE 23 FOR RECOMMENDED REINFORCEMENT)

METHOD 1

Sheathing Reinforcement One Side



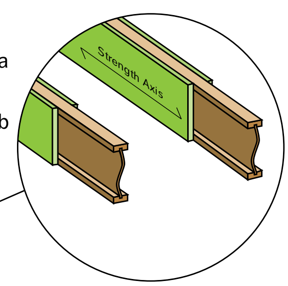
APA RATED SHEATHING 48/24 (minimum thickness 23/32"), or RigidRim Rimboard, required on sides of I-joist. Depth shall match the full height of the I-joist. Nail with 8d nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per Detail 1b.



METHOD 2

Sheathing Reinforcement Two Sides

Use same installation as Method 1 but reinforce both sides of I-joist with sheathing or RigidRim Rimboard



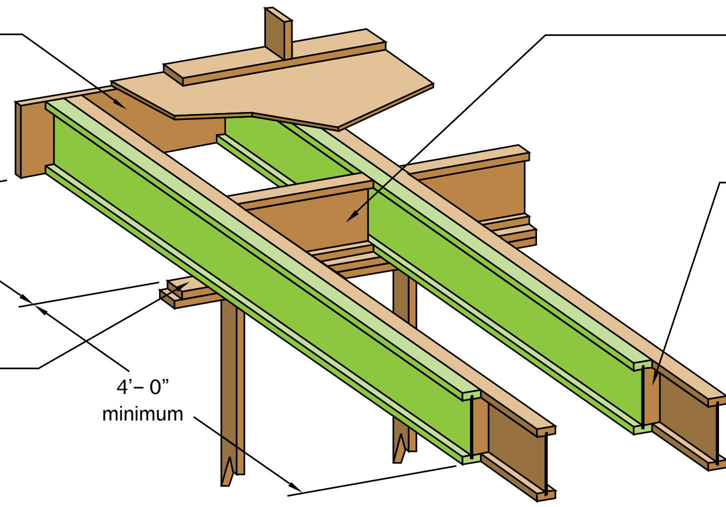
Use nailing pattern shown for Method 1 with opposite face nailing offset by 3"

Cantilever Details

CANTILEVER DETAIL FOR VERTICAL BUILDING OFFSET

ALTERNATIVE METHOD 2

Double RFPI®-Joist



Filler block does not function as a web stiffener. If web stiffeners are required it is recommended to install continuous filler block and install web stiffener below filler block prior to attaching I-joist reinforcement. Leave a 1/8"- 1/4" gap between top of filler block and bottom of top I-joist flange. Web stiffeners must be tight between top of bottom flange and bottom of filler block.

Figure A

Double RFPI®-Joist Construction

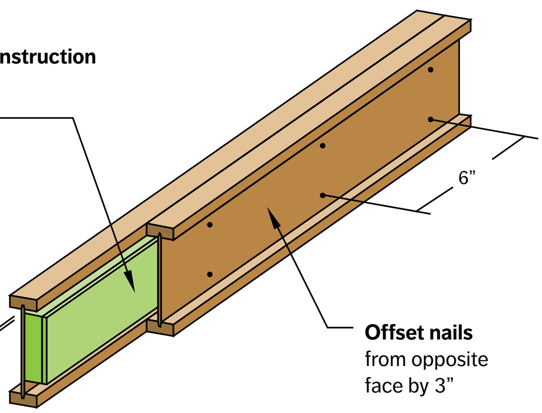


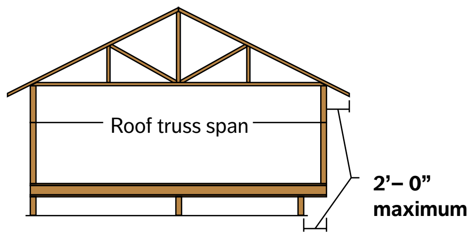
TABLE A: FILLER BLOCK REQUIREMENTS FOR DOUBLE RFPI®-JOIST CONSTRUCTION

Flange Width	Joist Depth	Joist Series	Recommended Minimum Filler Block Size
1-3/4"	9-1/2"	20	1-3/8" x 5-1/2"
	11-7/8"	20	1-3/8" x 5-1/2"
	14"	20	1-3/8" x 7-1/4"
2-1/16"	9-1/2"	400	1-3/4" x 5-1/2"
	11-7/8"	400	1-3/4" x 5-1/2"
	14"	400	1-3/4" x 7-1/4"
	16"	400	1-3/4" x 7-1/4"
2-5/16"	9-1/2"	40, 70	2" x 5-1/2"
	11-7/8"	40, 70	2" x 5-1/2"
	14"	40, 70	2" x 7-1/4"
	16"	40, 70	2" x 7-1/4"
2-1/2"	9-1/2"	40S, 60S	2-1/8" x 5-1/2"
	11-7/8"	40S, 60S	2-1/8" x 5-1/2"
	14"	40S, 60S	2-1/8" x 7-1/4"
	16"	40S, 60S	2-1/8" x 7-1/4"
3-1/2"	9-1/2"	90	3" x 5-1/2"
	11-7/8"	80S, 90	3" x 5-1/2"
	14"	80S, 90	3" x 7-1/4"
	16"	80S, 90	3" x 7-1/4"

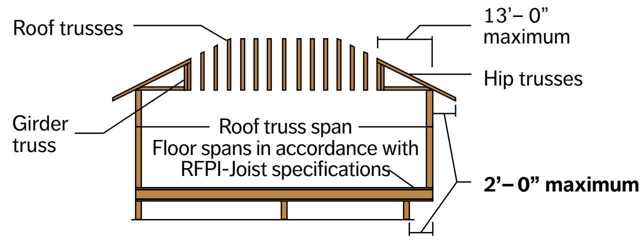
Notes:

1. Double I-joists may be required to frame openings, support concentrated loads, support partitions parallel to floor joists, or support any other loads which would exceed the capacity of a single I-joist. Install double I-joists when noted in the building drawings.
2. Filler blocks do not function as web stiffeners. Install web stiffeners as required.
3. Support back of I-joist web during nailing to prevent damage to web/flange connection.
4. Leave a 1/8"-1/4" gap between top of filler block and bottom of top I-joist flange.
5. For side-loaded conditions or cantilever reinforcement, filler block is required between joists for full length of double member.
6. Nail joists together with two rows of 10d nails at 6 inches o.c. (staggered) on each side of the double I-joist. Total of eight nails per foot required.
7. Filler block thickness may be achieved by using multiple layers of structural wood panels.
8. The maximum load that may be applied to one side of the double joist using this detail is 620 lbs/ft

RFPI®-Joist Cantilever Reinforcement



See table below for RFPI-Joist reinforcement requirements at cantilever.



For hip roofs with the hip trusses running parallel to the cantilevered floor joists, the I-joist reinforcement requirements for a span of 26' may be used.

RFPI®-JOIST CANTILEVER REINFORCEMENT METHODS ALLOWED

Joist Depth (in)	Roof Truss Span (ft)	ROOF LOADINGS											
		TL = 35 psf LL not to exceed 20 psf				TL = 45 psf LL not to exceed 30 psf				TL = 55 psf LL not to exceed 40 psf			
		Joist Spacing (in)				Joist Spacing (in)				Joist Spacing (in)			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9-1/2"	26	N	N	N	1	N	N	1	2	N	1	2	X
	28	N	N	N	1	N	N	1	2	N	1	2	X
	30	N	N	N	1	N	N	1	2	N	1	2	X
	32	N	N	1	2	N	1	1	X	N	1	2	X
	34	N	N	1	2	N	1	2	X	N	2	X	X
	36	N	N	1	2	N	1	2	X	N	2	X	X
11-7/8"	26	N	N	N	1	N	N	1	1	N	N	1	1
	28	N	N	N	1	N	N	1	1	N	1	1	2
	30	N	N	N	1	N	N	1	1	N	1	1	2
	32	N	N	N	1	N	N	1	1	N	1	1	2
	34	N	N	1	1	N	N	1	2	N	1	1	2
	36	N	N	1	1	N	1	1	2	N	1	1	2
	38	N	N	1	1	N	1	1	2	N	1	2	X
14"	26	N	N	N	1	N	N	1	1	N	N	1	2
	28	N	N	N	1	N	N	1	1	N	1	1	2
	30	N	N	N	1	N	N	1	1	N	1	1	2
	32	N	N	1	1	N	N	1	2	N	1	1	2
	34	N	N	1	1	N	1	1	2	N	1	1	2
	36	N	N	1	1	N	1	1	2	N	1	1	2
	38	N	N	1	1	N	1	1	2	N	1	2	2
	40	N	N	1	1	N	1	1	2	N	1	2	X
16"	26	N	N	N	1	N	N	N	1	N	N	1	1
	28	N	N	N	1	N	N	N	1	N	N	1	1
	30	N	N	N	1	N	N	N	1	N	N	1	2
	32	N	N	N	1	N	N	1	1	N	N	1	2
	34	N	N	N	1	N	N	1	1	N	1	1	2
	36	N	N	N	1	N	N	1	1	N	1	1	2
	38	N	N	N	1	N	N	1	2	N	1	1	2
	40	N	N	N	1	N	N	1	2	N	1	1	2
	42	N	N	1	1	N	1	1	2	N	1	2	2

Cantilever Reinforcement Legend:

N = No reinforcement required.

1 = RFPI®-Joists reinforced with 23/32" Wood Structural panel or RigidRim® Rimboard on one side only (see Method 1 on Page 21).

2 = RFPI®-Joists reinforced with 23/32" Wood Structural panel or RigidRim® Rimboard on both sides or double I-joist (see Method 2 on Page 21 or alternate Method 2 on Page 22).

X = Try a deeper joist or closer spacing.

Note: For more information see pages 21 & 22

Notes:

- Maximum load shall be: Total roof load as shown in table (includes 15 psf roof dead load), 50 psf floor total load, and 80 plf wall load. Wall load is based on 3'–0" maximum width window or door opening. For larger openings, or multiple 3'–0" width openings spaced less than 6'–0" o.c., additional joists beneath the opening's trimmer/jack studs may be required.
- Table applies to joists 12" to 24" o.c. Use 12" o.c. requirements for o.c. spacings less than 12".
- For a given I-joist depth, table conservatively accounts for multiple I-joist series.
- For conditions other than those shown or to analyze a specific I-joist series, software with the appropriate design properties, such as Simpson Strong-Tie® Component Solutions™ software, can be used to analyze specific applications and loading.

Web Stiffener Requirements

A web stiffener is a block of plywood, OSB, or even a 2x4 that is added to stiffen the I-joist's web, increase the bearing surface between the web and the flange, and provide additional support for a hanger or other connector. Web stiffeners are common with certain types of joist hanger installations, particularly in roof systems. They are typically placed at the end of the I-joist, between the flanges and against both sides of the web. When used at end bearings, web stiffeners should be installed tight against the bottom flange of the I-joist, but with a minimum 1/8" gap between the top of the stiffener and the bottom of the top flange. **Web stiffeners must be made of utility grade SPF (south) or better for lumber and/or sheathing grade or better for wood structural panels.**

When designed in accordance with the load/span conditions set forth in the tables in this guide, RFPI-Joists do not require web stiffeners, with the following exceptions:

- When sides of the hangers do not laterally brace the top flange of each I-joist.
- Birds mouth cuts for roof joists.
- When I-joists are designed to support concentrated loads greater than 1,500 lbs applied to the I-joist's top flange between supports. In these applications only, the gap between the web stiffener and the flange shall be at the bottom flange (see Figure B below).

Web stiffeners may be cut in the field as required for the application.

The use of web stiffeners or bearing lengths that are longer than the minimum required may result in allowable spans that are longer than those shown in this guide. The most accurate method of determining if a joist is adequate and if web stiffeners are required is to use appropriate software (e.g. Simpson Strong-Tie® Component Solutions™) or engineering analysis for the actual conditions.

FIGURE B

RFPI-JOIST WEB STIFFENER REQUIREMENTS

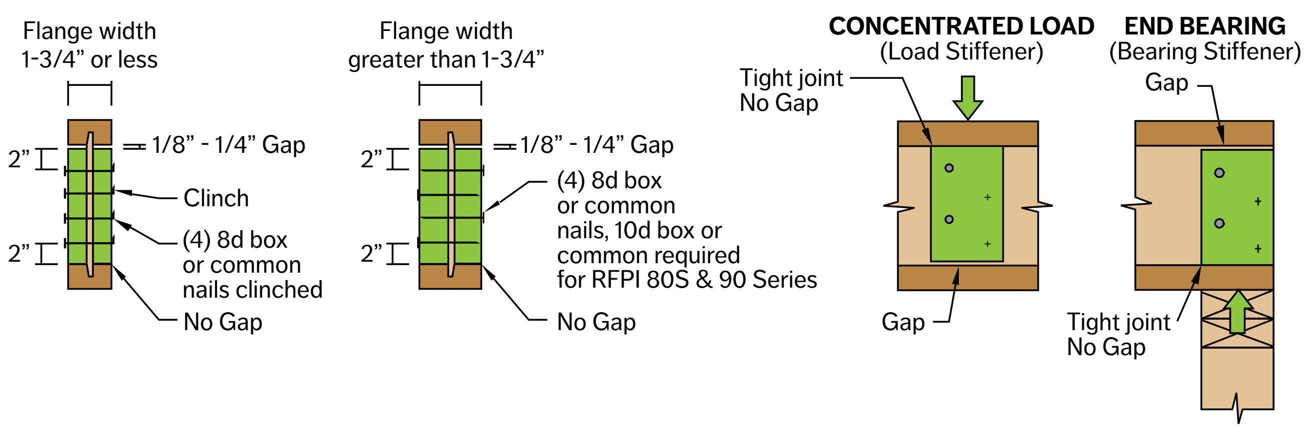
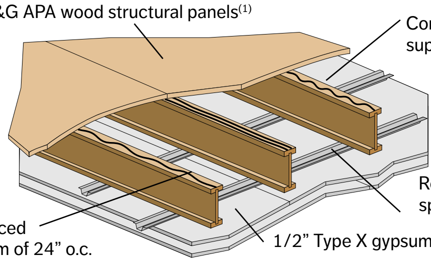


TABLE B: WEB STIFFENER SIZE REQUIRED	
RFPI®-Joist Flange Width	**Web Stiffener Size Each Side of Web**
1-3/4"	19/32" x 2-5/16" minimum width
2-1/16"	3/4" x 2-5/16" minimum width
2-5/16"	7/8" x 2-5/16" minimum width
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

Fire & Sound Rated Floor Assemblies

FIRE-RATED I-JOIST FLOOR-CEILING ASSEMBLIES

Wood I-joists have been used successfully in fire-rated floor assemblies for many years. Several I-joist fire-rated assemblies (1-hour and 2-hour) have been published that are applicable to I-joists that meet or exceed the required specifications provided in the fire-rated assembly description. These "generic" assemblies can be found in the American Wood Council (AWC) publication entitled "Design for Code Acceptance 3" (DCA 3). Most of these DCA 3 assemblies have been adopted by the International Building Code (IBC) and can be found in Table 721.1(3) of the 2012, 2015, 2018, and 2021 IBC. Additional fire-rated systems and associated information can be found in the APA ICC-ES code report ESR-1405 and various other APA publications. The Roseburg ICC-ES I-joist code report, ESR-1251, and APA Product Report, PR-S259, list the various IBC and APA fire-rated floor-ceiling assemblies for which RFPI-Joists have specific code approval. The website addresses for these organizations are as shown below.



Roseburg:	• www.roseburg.com
AWC:	• awc.org and search for DCA 3
APA:	• apawood.org and search for ESR 1405 W305 for I-joists and other D350 for rimboard

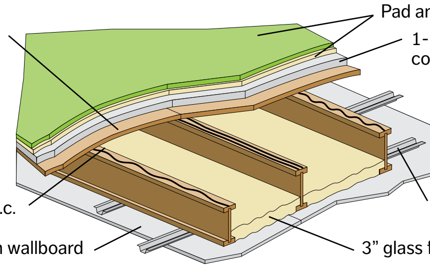
The fire-rated assembly shown at left is one of the more common assemblies shown in DCA 3 (WIJ-1.6) and published in the 2012, 2015, 2018, and 2021 IBC (Item 27-1.1) and can be used with any of the RFPI®-Joist series and depths.

1. Tests have shown that substitution of OSB or composite APA Rated Sturd-I-Floor for plywood panels in fire-rated single-layer assemblies will not jeopardize fire-resistance ratings. Substitution is based on equivalent panel thickness. OSB panels are listed as alternates to plywood for finish flooring in accordance with product evaluation reports for APA PRI trademarked I-joists.
2. For improved acoustical performance, gypsum wallboard is fastened to resilient metal furring channels in some assemblies.
3. Construction adhesive must conform to APA Specification AFG-01, or ASTM D3498.

APA PR-S259	American Wood Council DCA3	2012, 2015, 2018, 2021 IBC Table 721.1(3)	APA "Fire Rated Systems" W305	APA ICC-ES Report ESR-1405	Duration	RFPI-Joist series that meet the assembly requirements
RFP 1.1	WIJ-1.1	Item 24-1.1	Fig. 4.3A	-	1 hr.	RFPI 80S, 90 and 900
RFP 1.2	WIJ-1.2	Item 25-1.1	Fig. 4.3B	-	1 hr.	RFPI 90 and 900
RFP 1.3	WIJ-1.3	Item 23-1.1	Fig. 4.3C	-	1 hr.	All RFPI series
RFP 1.4	WIJ-1.4	-	Fig. 4.3D	-	1 hr.	RFPI 40S, 60S, 70, 80S, 90, 700 and 900
RFP 1.5	WIJ-1.5	-	Fig. 4.3E	-	1 hr.	RFPI 40S, 60S, 70, 80S, 90, 700 and 900
RFP 1.6	WIJ-1.6	Item 27-1.1	Fig. 4.3F	-	1 hr.	All RFPI series
RFP 1.7	WIJ-1.7	Item 30-1.1	-	-	1 hr.	RFPI 40S, 60S, 70, 80S, 90, 700 and 900
RFP 1.7a	-	-	-	-	1 hr.	All RFPI series
RFP 1.8	-	Item 26-1.1	-	-	1 hr.	RFPI 40S, 60S, 70, 80S, 90, 700 and 900
RFP 1.9	-	Item 21-1.1	-	Assembly 2	1 hr.	All RFPI series
RFP 1.10	-	-	-	Assembly 4	1 hr.	RFPI 40S, 60S, 80S, 90 and 900
-	-	-	-	Assembly 1	1 hr..	RFPI 40S, 60S, 80S, 90 and 900
-	-	-	-	Assembly 3	1 hr.	All RFPI series
RFP 2.1	WIJ-2.1	Item 28-1.1	Fig. 5	-	2 hr.	RFPI 40S, 60S, 70, 80S, 90, 700 and 900

SOUND-RATED FLOOR ASSEMBLY WITH APA PERFORMANCE RATED I-JOISTS

The sound-rated assembly shown at right is one of several assemblies that can be used with I-Joists. For additional STC and IIC sound rating systems for Roseburg RFPI-Joists, refer to APA Product Report PR-S259. Additional general information regarding STC and IIC sound ratings can be found in APA Form No.W460 (http://apawood.org/publications).



EXAMPLE: Sound Ratings for Floors Using APA Performance Rated RFPI®-Joist

Test Sponsor and Number[1]	Floor	Deck	Gypsum Wallboard Ceiling	Insulation	STC Rating	IIC Rating	Weight (lbs/sq. ft)
G&H USDA 11 ST	Vinyl Tile	1-1/2" of 100-pcf cellular concrete over 3/4" APA Rated Sheathing subfloor on I-joist at 24" o.c.	5/8" screwed to resilient metal channels	3" glass fiber	58	50	21.0
G&H USDA 11x ST	Carpet & Pad				58	77	
	None			None	57	None	20.7

1. USDA Forest Service Wood Construction Research (Seattle, WA); acoustical tests by Geiger & Hamme, Inc. (Ann Arbor, MI)

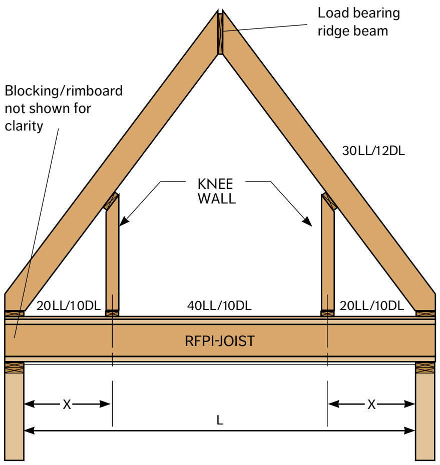
SPRINKLER ATTACHMENT

See APA-The Engineered Wood Association publication J745 "Sprinkler Pipe Installation for APA Performance Rated I-Joists" and supplement for sprinkler attachment guidelines.

Bonus Room Floor Joist Selection Guide

L (Span)	X (Knee Wall)	RFPI SERIES			
		12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
20'	4' to 6'	14" 20 • 11-7/8" 40	16" 40S • 14" 400 • 11-7/8" 80S	16" 400 •14" 40 • 11-7/8" 90	16" 70[a] • 14" 80S[a]
22'	4' to 6'	14" 40S • 11-7/8" 80S	16" 400 • 14" 70 • 11-7/8" 90	16" 40[a] • 14" 80S[a]	14" 90[a]
24'	4' to 7'	16" 40S • 14" 70 • 11-7/8" 90	16" 60S • 14" 90	16" 80S[a]	16" 90[ab]

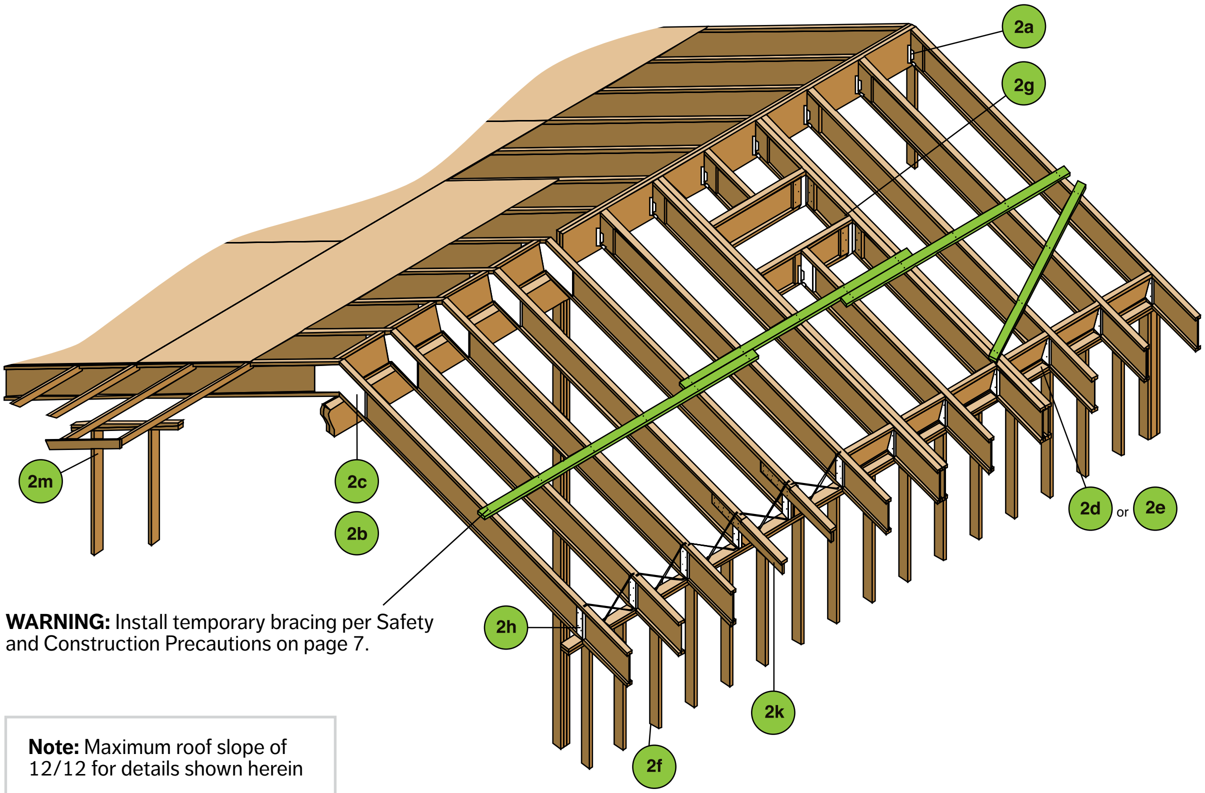
a) Install Concentrated Load Stiffeners to Floor I-joists below Knee Walls (see page 24)
b) Install web stiffeners to each end of I-Joist.



Design Parameters:

1. Roof live load of 30 psf at 115% (snow load).
2. Roof dead load of 12 psf (asphalt shingles).
3. Roof rafter slope between 8/12 and 12/12.
4. Knee wall weight of 40 plf dead load.
5. Attic storage load of 20 psf live load (outside the knee walls).
6. Floor live load of 40 psf (within the knee walls).
7. Attic and floor dead load of 10 psf.
8. Straight gable roof framing. No hip framing is permitted.
9. Maximum floor deflection is limited to L/480 live load and L/240 total load.
10. Spans are based on composite action with glued-nailed sheathing.
11. For all other conditions, call your local representative.
12. Consult local building code for other bonus room framing and/or loading requirements or restrictions.

Roof Framing & Construction Details



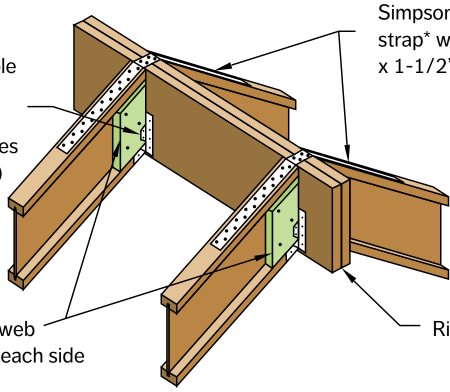
WARNING: Install temporary bracing per Safety and Construction Precautions on page 7.

Note: Maximum roof slope of 12/12 for details shown herein

TYPICAL RFPI®-JOIST ROOF FRAMING AND CONSTRUCTION DETAILS

All nails shown in the details below are assumed to be common nails unless otherwise noted. 10d box nails may be substituted for 8d common shown in details. If nails must be installed into the sides of LVL flanges, see table on page 8 for "Recommended Nail Size and Spacing". Individual components not shown to scale for clarity.

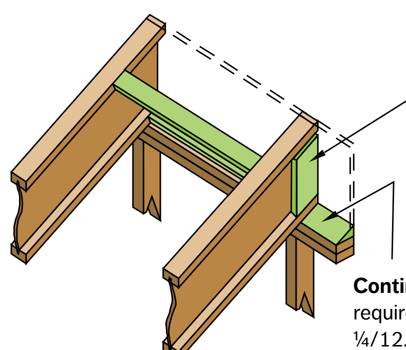
2a RIDGE JOIST CONNECTION - 12/12 MAXIMUM SLOPE



Uplift connections may be required.

2b UPPER END, BEARING ON WALL

RFPI®-Joist blocking panel, x-bracing, 23/32" APA Rated Sheathing 48/24, or proper depth of rimboard as continuous closure. (Validate use of x-bracing with local building code.)

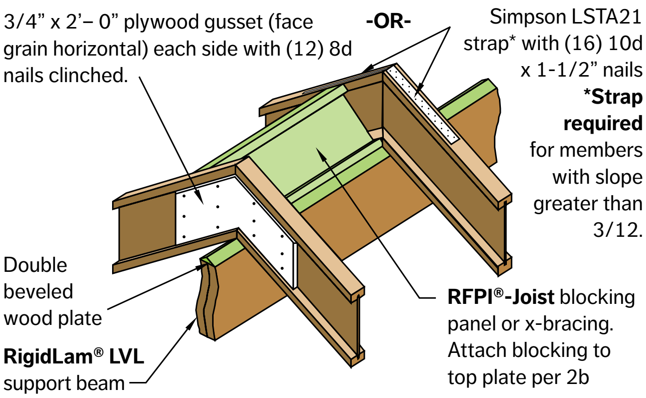


Continuous beveled wood plate required for slopes greater than ¼/12. Code recognized slope connectors may be substituted. For slopes greater than 4/12 connectors are required to resist lateral thrust.

Uplift connections may be required.

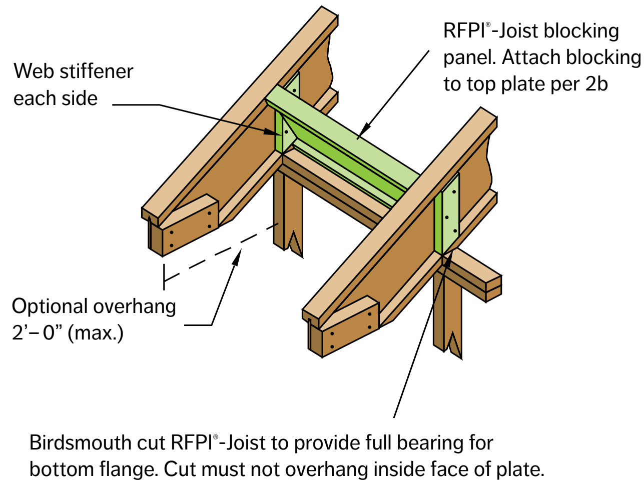
Attach blocking panel (or Rimboard) to top plate with 8d nails at 6" o.c. (when used for lateral shear transfer, nail to bearing plate with same nailing as required for decking)

2c RFPI®-JOISTS ABOVE RIDGE SUPPORT BEAM



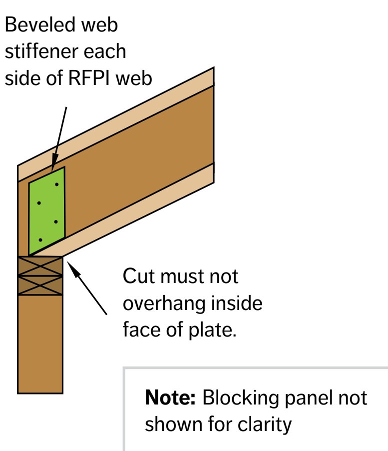
Uplift connections may be required.

2d BIRDSMOUTH CUT - LOW END OF RFPI®-JOIST ONLY

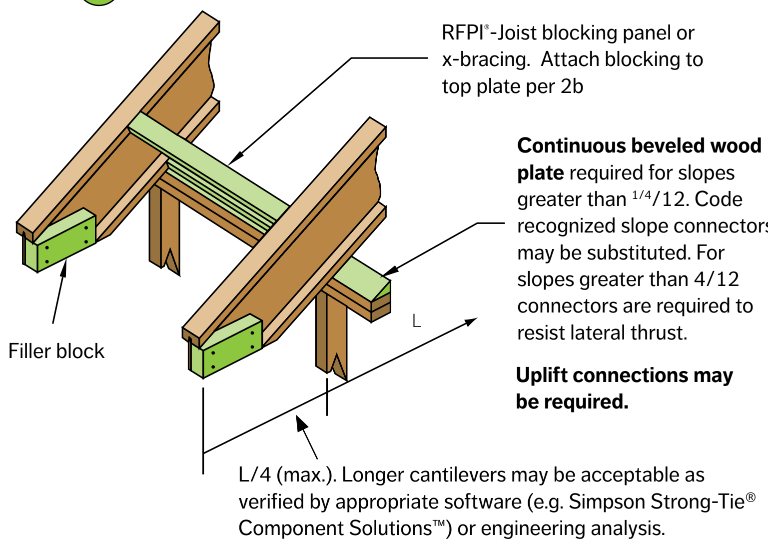


Uplift connections may be required.

2d sim. BIRDSMOUTH CUT, NO OVERHANG - LOW END OF RFPI®-JOIST ONLY

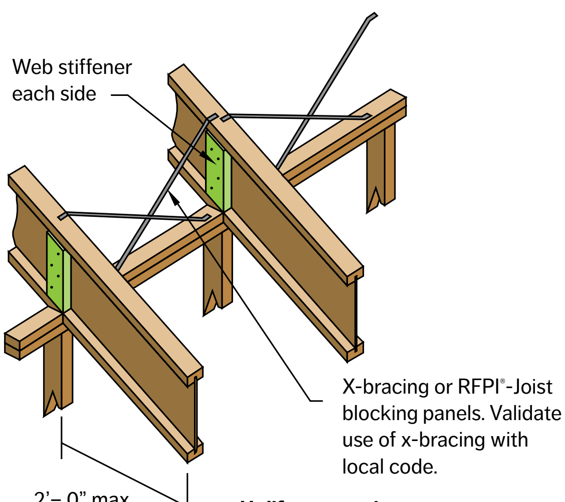


2e RFPI®-JOISTS ON BEVELED PLATE



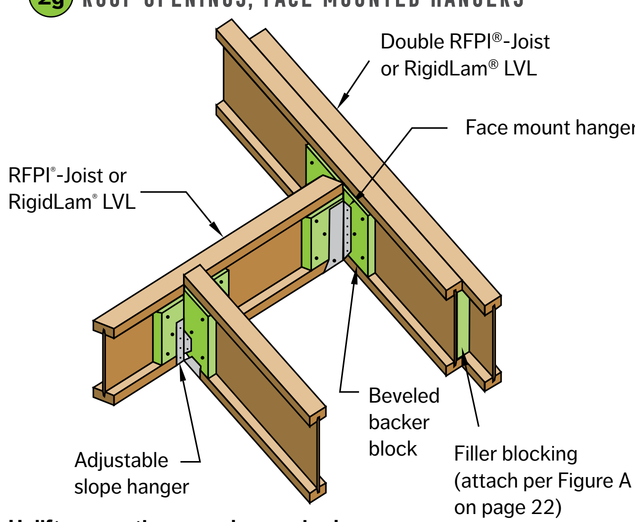
Uplift connections may be required.

2f BIRDSMOUTH CUT - LOW END OF RFPI®-JOIST ONLY



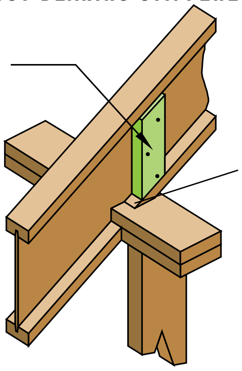
Uplift connections may be required.

2g ROOF OPENINGS, FACE MOUNTED HANGERS



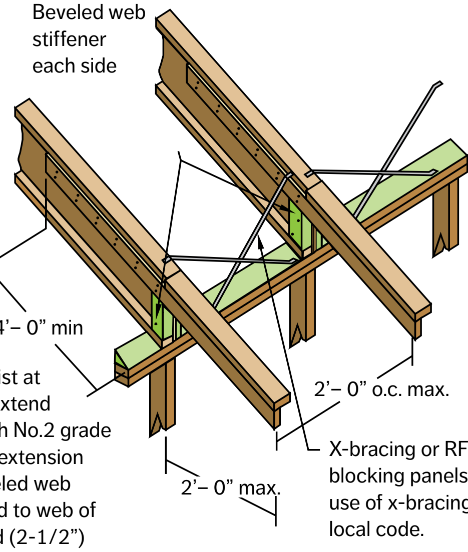
Uplift connections may be required.

2h BEVELED CUT BEARING STIFFENER



Uplift connections may be required.

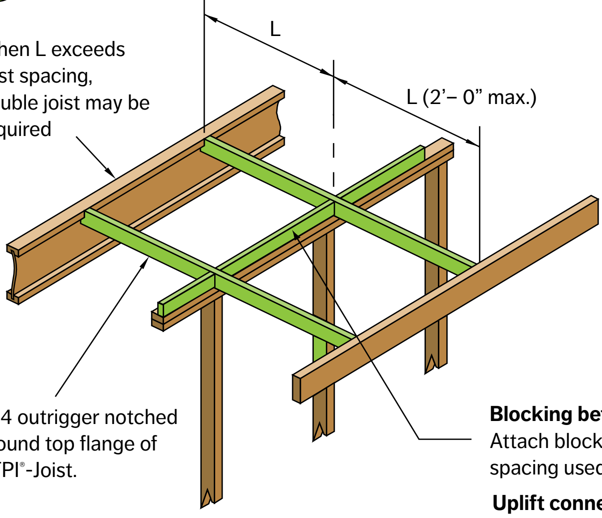
2k OPTIONAL OVERHANG EXTENSIONS



Stop RFPI®-Joist at wall line and extend top flange with No.2 grade 2x4. Support extension with 2x4 beveled web stiffener nailed to web of joist with 6-8d (2-1/2") nails. Extend 2x4 support at least 4' into joist span and nail to web with two rows of 8d nails at 8" o.c., clinched.

Uplift connections may be required.

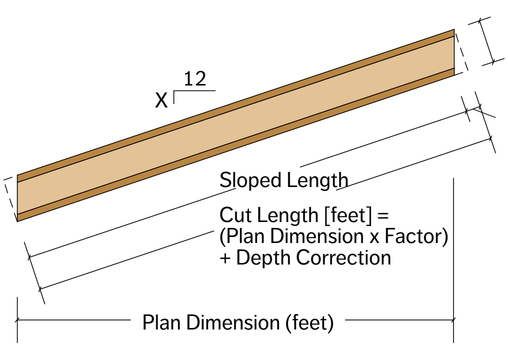
2m OVERHANG PARALLEL TO RFPI®-JOIST



Blocking between outriggers.
Attach blocking to top plate with nail size and spacing used for roof sheathing edge nailing.

Uplift connections may be required.

Slope Length Conversion Chart



ALONG-THE-SLOPE SPANS & CUTTING LENGTHS FOR SLOPED ROOFS

Slope	Slope Factor	Joist Depth (in)			
		9-1/2"	11-7/8"	14"	16"
		Depth Correction (ft)			
1 in 12	1.00	0.07	0.08	0.10	0.11
2 in 12	1.01	0.13	0.16	0.19	0.22
2.5 in 12	1.02	0.16	0.21	0.24	0.28
3 in 12	1.03	0.20	0.25	0.29	0.33
3.5 in 12	1.04	0.23	0.29	0.34	0.39
4 in 12	1.05	0.26	0.33	0.39	0.44
4.5 in 12	1.07	0.30	0.37	0.44	0.50
5 in 12	1.08	0.33	0.41	0.49	0.56
6 in 12	1.12	0.40	0.49	0.58	0.67
7 in 12	1.16	0.46	0.58	0.68	0.78
8 in 12	1.20	0.53	0.66	0.78	0.89
9 in 12	1.25	0.59	0.74	0.88	1.00
10 in 12	1.30	0.66	0.82	0.97	1.11
11 in 12	1.36	0.73	0.91	1.07	1.22
12 in 12	1.41	0.79	0.99	1.17	1.33

Allowable Roof Uniform Load For RFPI®-Joists (plf)

RFPI 20

Joist Clear Span (ft)	9-1/2"			11-7/8"			14"		
	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%
8	-	197	214	-	214	233	-	214	233
9	-	175	191	-	191	208	-	191	207
10	-	158	172	-	172	187	-	172	187
11	-	144	156	-	156	170	-	156	170
12	-	132	143	-	143	156	-	143	156
13	-	122	132	-	132	144	-	132	144
14	-	113	123	-	123	134	-	123	134
15	98	105	115	-	115	125	-	114	125
16	82	97	105	-	107	117	-	107	117
17	69	86	89	-	101	110	-	101	110
18	58	76	76	-	95	104	-	95	104
19	50	64	64	84	88	96	-	90	98
20	43	55	55	73	80	87	-	86	93
21	-	-	-	63	72	79	-	81	89
22	-	-	-	55	66	71	-	78	85
23	-	-	-	49	60	62	71	71	78
24	-	-	-	43	55	55	63	65	71
25	-	-	-	-	-	-	56	60	66
26	-	-	-	-	-	-	50	55	60
27	-	-	-	-	-	-	45	51	56
28	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-

RFPI 40S

Joist Clear Span (ft)	9-1/2"			11-7/8"			14"			16"		
	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%
8	-	239	260	-	277	301	-	277	301	-	277	301
9	-	213	232	-	247	268	-	246	268	-	246	268
10	-	192	209	-	222	242	-	222	242	-	222	241
11	-	175	190	-	202	220	-	202	220	-	202	220
12	-	160	174	-	185	202	-	185	202	-	185	201
13	-	141	154	-	171	186	-	171	186	-	171	186
14	-	122	133	-	158	173	-	159	173	-	158	173
15	-	106	116	-	138	150	-	148	161	-	148	161
16	-	93	101	-	121	132	-	139	151	-	139	151
17	79	82	90	-	107	117	-	129	141	-	130	142
18	68	73	80	-	95	104	-	115	126	-	123	134
19	58	66	71	-	85	93	-	103	113	-	116	127
20	50	59	64	-	77	84	-	93	101	-	108	118
21	43	53	55	-	70	76	-	84	92	-	98	107
22	-	-	-	-	63	69	-	77	83	-	89	97
23	-	-	-	56	58	63	-	70	76	-	81	89
24	-	-	-	50	53	58	-	64	70	-	74	81
25	-	-	-	-	-	-	-	59	64	-	68	75
26	-	-	-	-	-	-	-	54	59	-	63	69
27	-	-	-	-	-	-	-	50	55	-	58	64
28	-	-	-	-	-	-	-	-	-	-	54	59
29	-	-	-	-	-	-	-	-	-	-	50	55

RFPI 400

Joist Clear Span (ft)	9-1/2"			11-7/8"			14"			16"		
	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%
8	-	238	259	-	249	271	-	249	271	-	249	271
9	-	212	231	-	222	241	-	222	241	-	222	241
10	-	191	208	-	200	218	-	200	217	-	200	217
11	-	174	189	-	182	198	-	182	198	-	182	198
12	-	160	174	-	167	182	-	167	181	-	166	181
13	-	147	160	-	154	168	-	154	167	-	154	167
14	-	137	149	-	143	156	-	143	155	-	143	155
15	113	128	139	-	133	145	-	133	145	-	133	145
16	94	115	124	-	125	136	-	125	136	-	125	136
17	79	102	104	-	118	128	-	117	128	-	117	128
18	68	88	88	-	111	121	-	111	121	-	111	120
19	58	75	75	97	105	114	-	105	114	-	105	114
20	50	64	64	84	95	103	-	100	108	-	99	108
21	43	55	55	73	86	93	-	95	103	-	95	103
22	-	-	-	64	78	82	-	90	98	-	90	98
23	-	-	-	56	71	72	82	85	93	-	86	94
24	-	-	-	50	64	64	72	78	85	-	82	90
25	-	-	-	44	56	56	64	72	78	-	79	86
26	-	-	-	39	50	50	57	66	72	-	76	83
27	-	-	-	-	-	-	52	61	66	70	70	76
28	-	-	-	-	-	-	46	57	59	63	65	71
29	-	-	-	-	-	-	42	53	53	57	60	66

RFPI 40

Joist Clear Span (ft)	9-1/2"			11-7/8"			14"			16"		
	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%
8	-	249	271	-	277	301	-	277	301	-	277	301
9	-	222	242	-	247	268	-	247	268	-	246	268
10	-	200	218	-	222	242	-	222	242	-	222	242
11	-	182	198	-	202	220	-	202	220	-	202	220
12	-	167	182	-	186	202	-	185	202	-	185	201
13	-	154	168	-	171	186	-	171	186	-	171	186
14	-	143	156	-	159	173	-	159	173	-	159	173
15	125	134	145	-	148	162	-	148	161	-	148	161
16	104	125	136	-	139	151	-	139	151	-	139	151
17	88	114	115	-	131	143	-	131	142	-	130	142
18	75	97	97	-	124	135	-	123	134	-	123	134
19	64	83	83	107	117	127	-	117	127	-	117	127
20	55	71	71	92	107	116	-	111	121	-	111	121
21	48	62	62	80	97	104	-	105	115	-	105	115
22	42	54	54	70	88	91	-	101	110	-	100	109
23	-	-	-	62	80	80	90	96	104	-	96	105
24	-	-	-	55	70	70	80	88	96	-	92	100
25	-	-	-	49	62	62	71	81	88	-	88	96
26	-	-	-	43	55	55	63	74	81	-	85	92
27	-	-	-	-	-	-	57	69	73	77	79	86
28	-	-	-	-	-	-	51	64	65	69	73	80
29	-	-	-	-	-	-	46	59	59	63	68	74
30	-	-	-	-	-	-	42	53	53	57	64	69

RFPI 60S

Joist Clear Span (ft)	9-1/2"			11-7/8"			14"			16"		
	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%
8	-	239	260	-	277	301	-	277	301	-	277	301
9	-	213	232	-	247	268	-	246	268	-	246	268
10	-	192	209	-	222	242	-	222	242	-	222	241
11	-	175	190	-	202	220	-	202	220	-	202	220
12	-	160	174	-	185	202	-	185	202	-	185	201
13	-	148	161	-	171	186	-	171	186	-	171	186
14	-	137	149	-	159	173	-	159	173	-	158	173
15	-	128	139	-	148	161	-	148	161	-	148	161
16	111	120	131	-	139	151	-	139	151	-	139	151
17	94	113	123	-	131	142	-	131	142	-	130	142
18	80	102	104	-	123	134	-	123	134	-	123	134
19	68	89	89	115	117	127	-	117	127	-	116	127
20	59	76	76	99	107	117	-	111	121	-	110	120
21	51	66	66	86	97	106	-	105	115	-	105	115
22	45	57	57	76	88	96	-	100	109	-	100	109
23	40	50	50	67	81	86	-	96	105	-	96	104
24	-	-	-	59	74	76	86	89	97	-	92	100
25	-	-	-	53	67	67	76	82	90	-	88	96
26	-	-	-	47	60	60	68	76	83	-	84	92
27	-	-	-	42	53	53	61	70	76	-	81	89
28	-	-	-	-	-	-	55	65	71	75	76	83
29	-	-	-	-	-	-	50	60	63	68	70	77
30	-	-	-	-	-	-	45	56	57	61	66	72

To Use PLF Table:

1. Select the span required (see General Note 3 below).
2. Compare the design total load (plf) to the appropriate Total column and compare the design live load (plf) to the Live column.
3. Select a product that **meets or exceeds both the design total and roof live loads.** When no value is shown in the Live column, Total load will govern.

General Notes:

1. Table values apply to uniformly loaded simple or multiple span joists.
2. Clear span is the clear distance between the face of supports.
3. Use the horizontal span dimension from the building plans to size joists for roofs that slope up to 2" in 12". **For roof slopes greater than 2" in 12", multiply the horizontal span dimension by the appropriate Slope Factor from the table on page 29.**
4. Roofs must be sloped at least 1/4" in 12" to assure drainage.
5. Live load column is based on an L/240 deflection limit.
6. Total load column is based on an L/180 deflection limit. Use 115% column for snow loads and 125% for non-snow roof live loads. Check with local code (based on location of building) for snow load requirements.
7. Verify that the deflection criteria conform to local building code requirements.
8. Minimum end bearing length is 1-3/4". Minimum intermediate bearing length is 3-1/2".
9. Web stiffeners are not required for loads shown. Except for details 2a, 2d, 2f, 2g, 2h and 2k.
10. This table does not account for added stiffness from glued or nailed sheathing.
11. Use appropriate software (e.g. Simpson Strong-Tie® Component Solutions™) or engineering analysis to analyze multiple span joists if the length of any span is less than half the length of an adjacent span.
12. Use appropriate software or engineering analysis to analyze conditions outside of the scope of this table such as cantilevers and concentrated loads.
13. Provide lateral support at bearing points and continuous lateral support along the compression flange of each joist.
14. For double joists, double the table values and connect the joists per the detail on page 22.
15. For proper installation procedures, refer to the appropriate sections in this publication.

RFPI 70

Joist Clear Span (ft)	9-1/2"			11-7/8"			14"			16"		
	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%
8	-	259	282	-	277	301	-	277	301	-	276	301
9	-	230	251	-	247	268	-	246	268	-	246	268
10	-	208	226	-	222	242	-	222	242	-	222	241
11	-	189	206	-	202	220	-	202	220	-	202	219
12	-	173	189	-	185	202	-	185	201	-	185	201
13	-	160	174	-	171	186	-	171	186	-	171	186
14	-	149	162	-	159	173	-	159	173	-	158	172
15	-	139	151	-	148	161	-	148	161	-	148	161
16	127	130	141	-	139	151	-	139	151	-	138	151
17	107	122	133	-	131	142	-	130	142	-	130	142
18	91	115	119	-	123	134	-	123	134	-	123	134
19	78	102	102	-	117	127	-	117	127	-	116	127
20	68	87	87	-	111	121	-	111	121	-	110	120
21	59	76	76	98	105	115	-	105	115	-	105	114
22	51	66	66	86	101	110	-	100	109	-	100	109
23	45	58	58	76	96	98	-	96	105	-	96	104
24	40	51	51	67	87	87	-	92	100	-	92	100
25	-	-	-	60	77	77	87	88	96	-	88	96
26	-	-	-	53	68	68	78	85	92	-	84	92
27	-	-	-	48	61	61	70	81	89	-	81	88
28	-	-	-	43	55	55	63	78	81	-	78	85
29	-	-	-	-	-	-	57	73	73	-	75	82
30	-	-	-	-	-	-	52	66	66	70	73	79

RFPI 80S

Joist Clear Span (ft)	11-7/8"			14"			16"		
	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%
8	-	311	338	-	334	363	-	334	363
9	-	277	301	-	297	324	-	297	323
10	-	249	271	-	268	292	-	268	291
11	-	227	247	-	244	265	-	243	265
12	-	208	226	-	223	243	-	223	243
13	-	192	209	-	206	224	-	206	224
14	-	178	194	-	191	208	-	191	208
15	-	166	181	-	179	194	-	178	194
16	-	156	169	-	167	182	-	167	182
17	-	146	159	-	157	171	-	157	171
18	-	138	150	-	148	162	-	148	162
19	-	131	142	-	141	153	-	140	153
20	-	124	135	-	133	145	-	133	145
21	116	118	129	-	127	138	-	127	138
22	102	113	123	-	121	132	-	121	132
23	90	108	116	-	116	126	-	115	126
24	80	103	103	-	111	121	-	110	120
25	71	91	91	103	106	116	-	106	115
26	64	81	81	92	102	111	-	102	111
27	57	72	72	83	98	106	-	98	107
28	51	65	65	74	93	95	-	94	103
29	47	58	58	67	86	86	91	91	99
30	42	52	52	61	77	77	82	88	96

RFPI 90

Joist Clear Span (ft)	9-1/2"			11-7/8"			14"			16"		
	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%	Live L/240	Total 115%	Total 125%
8	-	334	364	-	372	404	-	371	404	-	371	404
9	-	298	324	-	331	360	-	331	360	-	330	360
10	-	268	292	-	298	324	-	298	324	-	298	324
11	-	244	265	-	271	295	-	271	295	-	271	295
12	-	224	243	-	249	271	-	248	270	-	248	270
13	-	206	225	-	230	250	-	229	250	-	229	249
14	-	192	209	-	213	232	-	213	232	-	213	232
15	-	179	195	-	199	217	-	199	216	-	198	216
16	-	168	183	-	186	203	-	186	203	-	186	202
17	153	158	172	-	175	191	-	175	191	-	175	190
18	131	149	162	-	166	180	-	165	180	-	165	180
19	113	141	147	-	157	171	-	156	170	-	156	170
20	98	127	127	-	149	162	-	148	162	-	148	162
21	85	110	110	141	142	154	-	141	154	-	141	154
22	75	96	96	124	135	147	-	135	147	-	134	147
23	66	84	84	109	129	141	-	129	140	-	129	140
24	59	74	74	97	124	125	-	123	134	-	123	134
25	52	66	66	86	111	111	-	118	129	-	118	129
26	47	58	58	77	99	99	111	114	124	-	113	124
27	42	52	52	70	89	89	100	109	119	-	109	119
28	-	-	-	63	80	80	91	105	115	-	105	114
29	-	-	-	57	72	72	82	101	105	-	101	110
30	-	-	-	52	65	65	75	95	95	-	98	107

Allowable Roof Clear Spans Snow Load - 115% Load Duration

Please refer to notes on page 34.

Load	Joist Depth	Joist Series	Slope of 4/12 or less 16” o.c.	Slope of 4/12 or less 19.2” o.c.	Slope of 4/12 or less 24” o.c.	Slopes over 4/12 up to 8/12 16” o.c.	Slopes over 4/12 up to 8/12 19.2” o.c.	Slopes over 4/12 up to 8/12 24” o.c.	Slope over 8/12 up to 12/12 16” o.c.	Slope over 8/12 up to 12/12 19.2” o.c.	Slope over 8/12 up to 12/12 24” o.c.
25 LIVE / 15 DEAD	9-1/2”	RFPI 20	20' - 0"	18' - 10"	17' - 5"	18' - 10"	17' - 8"	16' - 5"	17' - 5"	16' - 5"	15' - 2"
		RFPI 40S	21' - 1"	19' - 5"	17' - 4"	19' - 10"	18' - 8"	16' - 11"	18' - 5"	17' - 3"	16' - 0"
		RFPI 400	21' - 1"	19' - 10"	18' - 4"	19' - 10"	18' - 8"	17' - 3"	18' - 5"	17' - 3"	16' - 0"
		RFPI 40	21' - 10"	20' - 6"	19' - 0"	20' - 7"	19' - 4"	17' - 11"	19' - 1"	17' - 11"	16' - 7"
		RFPI 60S	22' - 5"	21' - 0"	19' - 5"	21' - 1"	19' - 10"	18' - 4"	19' - 6"	18' - 4"	17' - 0"
		RFPI 70	23' - 5"	22' - 0"	20' - 4"	22' - 1"	20' - 9"	19' - 2"	20' - 6"	19' - 3"	17' - 10"
		RFPI 90	26' - 9"	25' - 2"	23' - 3"	25' - 3"	23' - 8"	21' - 11"	23' - 5"	22' - 0"	20' - 4"
	11-7/8”	RFPI 20	24' - 0"	22' - 5"	20' - 0"	22' - 7"	21' - 3"	19' - 6"	20' - 11"	19' - 8"	18' - 3"
		RFPI 40S	24' - 3"	22' - 2"	19' - 9"	23' - 7"	21' - 7"	19' - 3"	22' - 0"	20' - 8"	18' - 7"
		RFPI 400	25' - 3"	23' - 9"	21' - 10"	23' - 9"	22' - 4"	20' - 8"	22' - 0"	20' - 8"	19' - 2"
		RFPI 40	26' - 2"	24' - 7"	22' - 9"	24' - 7"	23' - 1"	21' - 5"	22' - 10"	21' - 5"	19' - 10"
		RFPI 60S	26' - 10"	25' - 2"	23' - 3"	25' - 3"	23' - 9"	22' - 0"	23' - 5"	22' - 0"	20' - 4"
		RFPI 70	28' - 1"	26' - 4"	24' - 5"	26' - 5"	24' - 10"	23' - 0"	24' - 6"	23' - 0"	21' - 4"
		RFPI 80S	29' - 10"	28' - 0"	25' - 11"	28' - 1"	26' - 5"	24' - 5"	26' - 1"	24' - 6"	22' - 8"
		RFPI 90	32' - 0"	30' - 1"	27' - 10"	30' - 2"	28' - 4"	26' - 2"	27' - 11"	26' - 3"	24' - 4"
	14”	RFPI 20	26' - 10"	24' - 6"	21' - 7"	25' - 10"	23' - 10"	20' - 6"	23' - 11"	22' - 6"	19' - 1"
		RFPI 40S	26' - 8"	24' - 4"	21' - 9"	25' - 11"	23' - 8"	21' - 2"	25' - 0"	22' - 10"	20' - 5"
		RFPI 400	28' - 9"	26' - 8"	23' - 10"	27' - 1"	25' - 5"	23' - 3"	25' - 1"	23' - 7"	21' - 10"
		RFPI 40	29' - 9"	28' - 0"	25' - 4"	28' - 1"	26' - 4"	24' - 5"	26' - 0"	24' - 5"	22' - 7"
		RFPI 60S	30' - 7"	28' - 7"	25' - 7"	28' - 10"	27' - 1"	24' - 11"	26' - 8"	25' - 1"	23' - 3"
		RFPI 70	32' - 0"	30' - 1"	27' - 10"	30' - 2"	28' - 4"	26' - 3"	27' - 11"	26' - 3"	24' - 4"
		RFPI 80S	33' - 11"	31' - 10"	29' - 6"	32' - 0"	30' - 0"	27' - 10"	29' - 8"	27' - 10"	25' - 9"
		RFPI 90	36' - 5"	34' - 2"	31' - 8"	34' - 4"	32' - 3"	29' - 10"	31' - 9"	29' - 10"	27' - 8"
	16”	RFPI 40S	28' - 9"	26' - 2"	23' - 5"	27' - 11"	25' - 6"	22' - 9"	27' - 0"	24' - 7"	22' - 0"
		RFPI 400	31' - 4"	28' - 7"	25' - 2"	30' - 1"	27' - 10"	23' - 10"	27' - 11"	26' - 2"	22' - 2"
		RFPI 40	33' - 1"	30' - 4"	27' - 1"	31' - 2"	29' - 3"	26' - 4"	28' - 10"	27' - 1"	24' - 8"
		RFPI 60S	33' - 9"	30' - 10"	27' - 6"	32' - 0"	30' - 0"	26' - 6"	29' - 8"	27' - 10"	24' - 8"
		RFPI 70	35' - 7"	33' - 5"	28' - 0"	33' - 6"	31' - 6"	26' - 6"	31' - 0"	29' - 2"	24' - 8"
		RFPI 80S	37' - 8"	35' - 4"	32' - 9"	35' - 6"	33' - 4"	30' - 10"	32' - 10"	30' - 11"	28' - 7"
		RFPI 90	40' - 5"	37' - 11"	35' - 1"	38' - 1"	35' - 9"	33' - 1"	35' - 3"	33' - 1"	30' - 8"

Load	Joist Depth	Joist Series	Slope of 4/12 or less 16” o.c.	Slope of 4/12 or less 19.2” o.c.	Slope of 4/12 or less 24” o.c.	Slopes over 4/12 up to 8/12 16” o.c.	Slopes over 4/12 up to 8/12 19.2” o.c.	Slopes over 4/12 up to 8/12 24” o.c.	Slope over 8/12 up to 12/12 16” o.c.	Slope over 8/12 up to 12/12 19.2” o.c.	Slope over 8/12 up to 12/12 24” o.c.
30 LIVE / 15 DEAD	9-1/2”	RFPI 20	19' - 3"	18' - 1"	16' - 7"	18' - 2"	17' - 1"	15' - 9"	16' - 10"	15' - 10"	14' - 8"
		RFPI 40S	20' - 1"	18' - 4"	16' - 4"	19' - 1"	17' - 11"	16' - 0"	17' - 9"	16' - 8"	15' - 5"
		RFPI 400	20' - 3"	19' - 0"	17' - 7"	19' - 1"	17' - 11"	16' - 7"	17' - 9"	16' - 8"	15' - 5"
		RFPI 40	21' - 0"	19' - 9"	18' - 3"	19' - 10"	18' - 7"	17' - 3"	18' - 5"	17' - 3"	16' - 0"
		RFPI 60S	21' - 6"	20' - 2"	18' - 8"	20' - 4"	19' - 1"	17' - 8"	18' - 10"	17' - 8"	16' - 5"
		RFPI 70	22' - 6"	21' - 2"	19' - 7"	21' - 3"	20' - 0"	18' - 6"	19' - 9"	18' - 7"	17' - 2"
		RFPI 90	25' - 9"	24' - 2"	22' - 4"	24' - 4"	22' - 10"	21' - 1"	22' - 7"	21' - 2"	19' - 7"
	11-7/8”	RFPI 20	23' - 1"	21' - 2"	18' - 11"	21' - 9"	20' - 5"	18' - 4"	20' - 3"	19' - 0"	17' - 2"
		RFPI 40S	22' - 11"	20' - 11"	18' - 8"	22' - 4"	20' - 5"	18' - 2"	21' - 3"	19' - 9"	17' - 8"
		RFPI 400	24' - 3"	22' - 9"	20' - 7"	22' - 11"	21' - 6"	19' - 11"	21' - 3"	20' - 0"	18' - 6"
		RFPI 40	25' - 1"	23' - 7"	21' - 10"	23' - 8"	22' - 3"	20' - 7"	22' - 0"	20' - 8"	19' - 2"
		RFPI 60S	25' - 9"	24' - 2"	22' - 0"	24' - 4"	22' - 10"	21' - 2"	22' - 7"	21' - 3"	19' - 8"
		RFPI 70	27' - 0"	25' - 4"	23' - 5"	25' - 6"	23' - 11"	22' - 2"	23' - 8"	22' - 3"	20' - 7"
		RFPI 80S	28' - 8"	26' - 11"	24' - 11"	27' - 1"	25' - 5"	23' - 6"	25' - 2"	23' - 7"	21' - 10"
		RFPI 90	30' - 9"	28' - 10"	26' - 8"	29' - 0"	27' - 3"	25' - 3"	27' - 0"	25' - 4"	23' - 5"
	14”	RFPI 20	25' - 4"	23' - 1"	19' - 3"	24' - 9"	22' - 7"	18' - 4"	23' - 1"	21' - 6"	17' - 2"
		RFPI 40S	25' - 2"	22' - 11"	20' - 6"	24' - 7"	22' - 5"	20' - 0"	23' - 9"	21' - 8"	19' - 4"
		RFPI 400	27' - 7"	25' - 2"	22' - 4"	26' - 1"	24' - 6"	21' - 4"	24' - 3"	22' - 9"	20' - 0"
		RFPI 40	28' - 8"	26' - 9"	23' - 11"	27' - 0"	25' - 5"	23' - 4"	25' - 1"	23' - 7"	21' - 10"
		RFPI 60S	29' - 5"	27' - 0"	24' - 1"	27' - 9"	26' - 1"	23' - 7"	25' - 9"	24' - 2"	22' - 3"
		RFPI 70	30' - 9"	28' - 11"	24' - 11"	29' - 1"	27' - 3"	23' - 9"	27' - 0"	25' - 4"	22' - 3"
		RFPI 80S	32' - 7"	30' - 7"	28' - 4"	30' - 10"	28' - 11"	26' - 9"	28' - 7"	26' - 10"	24' - 11"
		RFPI 90	35' - 0"	32' - 10"	30' - 5"	33' - 0"	31' - 0"	28' - 8"	30' - 8"	28' - 10"	26' - 8"
	16”	RFPI 40S	27' - 1"	24' - 8"	22' - 1"	26' - 5"	24' - 2"	21' - 7"	25' - 7"	23' - 4"	20' - 10"
		RFPI 400	29' - 6"	26' - 11"	22' - 4"	28' - 10"	26' - 4"	21' - 4"	26' - 11"	25' - 1"	20' - 0"
		RFPI 40	31' - 4"	28' - 7"	24' - 11"	30' - 0"	27' - 11"	23' - 9"	27' - 10"	26' - 2"	22' - 3"
		RFPI 60S	31' - 10"	29' - 1"	24' - 11"	30' - 10"	28' - 5"	23' - 9"	28' - 7"	26' - 11"	22' - 3"
		RFPI 70	34' - 2"	31' - 2"	24' - 11"	32' - 3"	29' - 9"	23' - 9"	29' - 11"	27' - 10"	22' - 3"
		RFPI 80S	36' - 2"	34' - 0"	30' - 1"	34' - 2"	32' - 1"	28' - 8"	31' - 9"	29' - 10"	26' - 11"
		RFPI 90	38' - 10"	36' - 5"	33' - 6"	36' - 8"	34' - 5"	31' - 10"	34' - 0"	32' - 0"	29' - 7"

Allowable Roof Clear Spans Snow Load - 115% Load Duration

Please refer to notes on page 34.

			Slope of 4/12 or less			Slopes over 4/12 up to 8/12			Slope over 8/12 up to 12/12		
	Joist Depth	Joist Series	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.
40 LIVE / 15 DEAD	9-1/2"	RFPI 20	18' - 0"	16' - 10"	14' - 5"	17' - 0"	16' - 0"	13' - 10"	15' - 10"	14' - 11"	13' - 1"
		RFPI 40S	18' - 2"	16' - 7"	14' - 10"	17' - 10"	16' - 3"	14' - 6"	16' - 8"	15' - 8"	14' - 1"
		RFPI 400	18' - 11"	17' - 9"	16' - 5"	17' - 11"	16' - 10"	15' - 7"	16' - 8"	15' - 8"	14' - 6"
		RFPI 40	19' - 7"	18' - 5"	17' - 0"	18' - 7"	17' - 5"	16' - 1"	17' - 4"	16' - 3"	15' - 0"
		RFPI 60S	20' - 1"	18' - 10"	17' - 5"	19' - 0"	17' - 10"	16' - 6"	17' - 9"	16' - 8"	15' - 5"
		RFPI 70	21' - 0"	19' - 9"	18' - 3"	19' - 11"	18' - 8"	17' - 4"	18' - 7"	17' - 5"	16' - 2"
		RFPI 90	24' - 0"	22' - 6"	20' - 10"	22' - 9"	21' - 4"	19' - 9"	21' - 3"	19' - 11"	18' - 5"
	11-7/8"	RFPI 20	21' - 0"	19' - 2"	15' - 9"	20' - 5"	18' - 9"	15' - 1"	19' - 0"	17' - 10"	14' - 4"
		RFPI 40S	20' - 9"	18' - 11"	16' - 10"	20' - 4"	18' - 6"	16' - 7"	19' - 9"	18' - 0"	16' - 1"
		RFPI 400	22' - 8"	20' - 10"	18' - 4"	21' - 6"	20' - 2"	17' - 7"	20' - 0"	18' - 9"	16' - 8"
		RFPI 40	23' - 6"	22' - 0"	19' - 9"	22' - 3"	20' - 10"	19' - 4"	20' - 8"	19' - 5"	18' - 0"
		RFPI 60S	24' - 1"	22' - 3"	19' - 11"	22' - 10"	21' - 5"	19' - 6"	21' - 3"	20' - 0"	18' - 6"
		RFPI 70	25' - 2"	23' - 8"	20' - 5"	23' - 10"	22' - 5"	19' - 7"	22' - 3"	20' - 11"	18' - 7"
		RFPI 80S	26' - 9"	25' - 2"	22' - 11"	25' - 4"	23' - 10"	22' - 0"	23' - 8"	22' - 3"	20' - 7"
		RFPI 90	28' - 8"	26' - 11"	24' - 11"	27' - 2"	25' - 6"	23' - 7"	25' - 4"	23' - 10"	22' - 0"
	14"	RFPI 20	22' - 11"	19' - 9"	15' - 9"	22' - 6"	18' - 11"	15' - 1"	21' - 7"	17' - 11"	14' - 4"
		RFPI 40S	22' - 9"	20' - 9"	18' - 6"	22' - 4"	20' - 4"	18' - 2"	21' - 9"	19' - 10"	17' - 8"
		RFPI 400	25' - 0"	22' - 10"	18' - 4"	24' - 5"	22' - 1"	17' - 7"	22' - 9"	20' - 11"	16' - 8"
		RFPI 40	26' - 6"	24' - 2"	20' - 5"	25' - 4"	23' - 9"	19' - 7"	23' - 7"	22' - 2"	18' - 7"
		RFPI 60S	26' - 9"	24' - 5"	20' - 5"	26' - 0"	23' - 11"	19' - 7"	24' - 3"	22' - 9"	18' - 7"
		RFPI 70	28' - 9"	25' - 6"	20' - 5"	27' - 3"	24' - 7"	19' - 7"	25' - 5"	23' - 3"	18' - 7"
		RFPI 80S	30' - 6"	28' - 7"	24' - 8"	28' - 10"	27' - 1"	23' - 9"	26' - 11"	25' - 3"	22' - 6"
		RFPI 90	32' - 8"	30' - 8"	27' - 5"	30' - 11"	29' - 1"	26' - 5"	28' - 10"	27' - 1"	25' - 0"
	16"	RFPI 40S	24' - 6"	22' - 4"	20' - 0"	24' - 1"	21' - 11"	19' - 7"	23' - 5"	21' - 4"	18' - 7"
		RFPI 400	26' - 9"	23' - 0"	18' - 4"	26' - 3"	22' - 1"	17' - 7"	25' - 2"	20' - 11"	16' - 8"
		RFPI 40	28' - 5"	25' - 6"	20' - 5"	27' - 10"	24' - 7"	19' - 7"	26' - 2"	23' - 3"	18' - 7"
		RFPI 60S	28' - 10"	25' - 6"	20' - 5"	28' - 3"	24' - 7"	19' - 7"	26' - 11"	23' - 3"	18' - 7"
		RFPI 70	30' - 8"	25' - 6"	20' - 5"	29' - 6"	24' - 7"	19' - 7"	28' - 0"	23' - 3"	18' - 7"
		RFPI 80S	33' - 10"	30' - 11"	24' - 8"	32' - 0"	29' - 8"	23' - 9"	29' - 10"	28' - 0"	22' - 6"
		RFPI 90	36' - 3"	34' - 0"	27' - 5"	34' - 4"	32' - 3"	26' - 5"	32' - 0"	30' - 1"	25' - 0"

			Slope of 4/12 or less			Slopes over 4/12 up to 8/12			Slope over 8/12 up to 12/12		
	Joist Depth	Joist Series	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.
50 LIVE / 15 DEAD	9-1/2"	RFPI 20	16' - 11"	15' - 3"	12' - 2"	16' - 1"	14' - 9"	11' - 9"	15' - 1"	14' - 1"	11' - 3"
		RFPI 40S	16' - 9"	15' - 3"	13' - 7"	16' - 5"	15' - 0"	13' - 5"	15' - 10"	14' - 8"	13' - 1"
		RFPI 400	17' - 9"	16' - 8"	14' - 10"	16' - 11"	15' - 11"	14' - 4"	15' - 10"	14' - 11"	13' - 8"
		RFPI 40	18' - 5"	17' - 3"	15' - 6"	17' - 7"	16' - 6"	15' - 0"	16' - 5"	15' - 5"	14' - 3"
		RFPI 60S	18' - 10"	17' - 8"	14' - 11"	18' - 0"	16' - 11"	14' - 3"	16' - 10"	15' - 10"	13' - 5"
		RFPI 70	19' - 9"	18' - 7"	16' - 1"	18' - 10"	17' - 8"	15' - 7"	17' - 8"	16' - 7"	14' - 10"
		RFPI 90	22' - 7"	21' - 2"	19' - 6"	21' - 6"	20' - 2"	18' - 8"	20' - 2"	18' - 11"	17' - 6"
	11-7/8"	RFPI 20	19' - 4"	16' - 8"	13' - 4"	19' - 0"	16' - 2"	12' - 10"	18' - 1"	15' - 5"	12' - 3"
		RFPI 40S	19' - 1"	17' - 5"	15' - 6"	18' - 9"	17' - 1"	15' - 3"	18' - 4"	16' - 8"	14' - 11"
		RFPI 400	21' - 1"	19' - 2"	15' - 6"	20' - 4"	18' - 10"	15' - 0"	19' - 0"	17' - 10"	14' - 4"
		RFPI 40	22' - 1"	20' - 5"	17' - 3"	21' - 0"	19' - 9"	16' - 8"	19' - 8"	18' - 5"	15' - 11"
		RFPI 60S	22' - 5"	20' - 6"	17' - 3"	21' - 7"	20' - 2"	16' - 8"	20' - 2"	18' - 11"	15' - 11"
		RFPI 70	23' - 8"	21' - 7"	17' - 3"	22' - 7"	20' - 11"	16' - 8"	21' - 1"	19' - 10"	15' - 11"
		RFPI 80S	25' - 2"	23' - 7"	19' - 5"	24' - 0"	22' - 6"	18' - 9"	22' - 5"	21' - 1"	17' - 11"
		RFPI 90	27' - 0"	25' - 4"	23' - 3"	25' - 9"	24' - 2"	22' - 4"	24' - 1"	22' - 7"	20' - 11"
	14"	RFPI 20	20' - 1"	16' - 8"	13' - 4"	19' - 5"	16' - 2"	12' - 10"	18' - 6"	15' - 5"	12' - 3"
		RFPI 40S	20' - 11"	19' - 1"	17' - 1"	20' - 7"	18' - 9"	16' - 8"	20' - 1"	18' - 4"	15' - 11"
		RFPI 400	23' - 0"	19' - 5"	15' - 6"	22' - 7"	18' - 10"	15' - 0"	21' - 7"	17' - 11"	14' - 4"
		RFPI 40	24' - 5"	21' - 7"	17' - 3"	24' - 0"	20' - 11"	16' - 8"	22' - 5"	20' - 0"	15' - 11"
		RFPI 60S	24' - 8"	21' - 7"	17' - 3"	24' - 3"	20' - 11"	16' - 8"	23' - 0"	20' - 0"	15' - 11"
		RFPI 70	26' - 0"	21' - 7"	17' - 3"	25' - 2"	20' - 11"	16' - 8"	24' - 0"	20' - 0"	15' - 11"
		RFPI 80S	28' - 8"	26' - 2"	20' - 11"	27' - 4"	25' - 4"	20' - 2"	25' - 6"	24' - 0"	19' - 3"
		RFPI 90	30' - 8"	28' - 10"	23' - 3"	29' - 3"	27' - 6"	22' - 6"	27' - 5"	25' - 9"	21' - 5"
	16"	RFPI 40S	22' - 7"	20' - 7"	17' - 3"	22' - 2"	20' - 3"	16' - 8"	21' - 8"	19' - 9"	15' - 11"
		RFPI 400	23' - 4"	19' - 5"	15' - 6"	22' - 7"	18' - 10"	15' - 0"	21' - 7"	17' - 11"	14' - 4"
		RFPI 40	26' - 0"	21' - 7"	17' - 3"	25' - 2"	20' - 11"	16' - 8"	24' - 0"	20' - 0"	15' - 11"
		RFPI 60S	26' - 0"	21' - 7"	17' - 3"	25' - 2"	20' - 11"	16' - 8"	24' - 0"	20' - 0"	15' - 11"
		RFPI 70	26' - 0"	21' - 7"	17' - 3"	25' - 2"	20' - 11"	16' - 8"	24' - 0"	20' - 0"	15' - 11"
		RFPI 80S	31' - 5"	26' - 2"	20' - 11"	30' - 4"	25' - 4"	20' - 2"	28' - 4"	24' - 2"	19' - 3"
		RFPI 90	34' - 1"	29' - 1"	23' - 3"	32' - 6"	28' - 2"	22' - 6"	30' - 5"	26' - 10"	21' - 5"

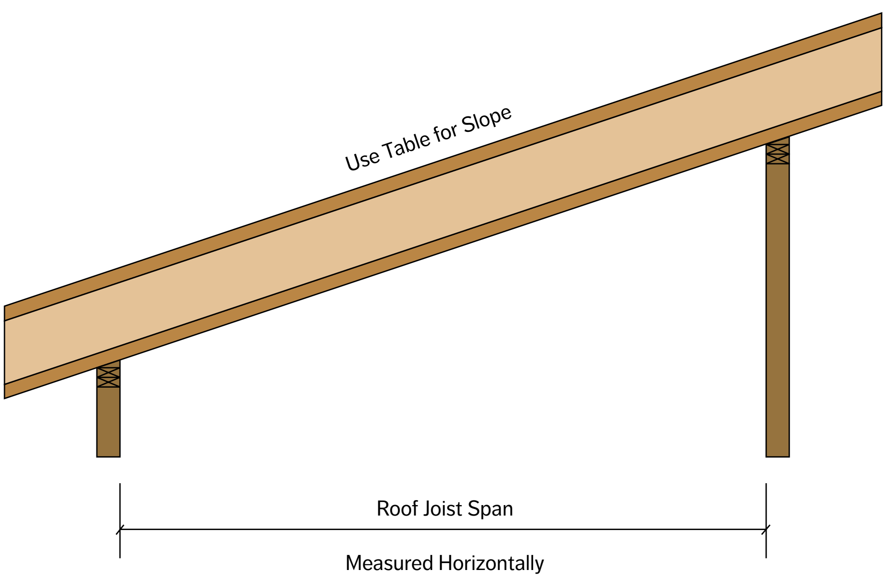
Allowable Roof Clear Spans Non-Snow Load - 125% Load Duration

Load	Joist Depth	Joist Series	Slope of 4/12 or less			Slopes over 4/12 up to 8/12			Slope over 8/12 up to 12/12		
			16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.
20 LIVE / 10 DEAD	9-1/2"	RFPI 20	22' - 1"	20' - 9"	19' - 3"	20' - 10"	19' - 7"	18' - 2"	19' - 4"	18' - 2"	16' - 10"
		RFPI 40S	23' - 4"	21' - 11"	20' - 3"	22' - 0"	20' - 8"	19' - 1"	20' - 5"	19' - 2"	17' - 9"
		RFPI 400	23' - 4"	21' - 11"	20' - 3"	22' - 0"	20' - 8"	19' - 1"	20' - 5"	19' - 2"	17' - 9"
		RFPI 40	24' - 2"	22' - 8"	21' - 0"	22' - 9"	21' - 5"	19' - 10"	21' - 2"	19' - 10"	18' - 5"
		RFPI 60S	24' - 9"	23' - 3"	21' - 6"	23' - 4"	21' - 11"	20' - 4"	21' - 8"	20' - 4"	18' - 10"
		RFPI 70	25' - 11"	24' - 4"	22' - 6"	24' - 5"	23' - 0"	21' - 3"	22' - 8"	21' - 4"	19' - 9"
		RFPI 90	29' - 7"	27' - 10"	25' - 9"	27' - 11"	26' - 3"	24' - 4"	25' - 11"	24' - 4"	22' - 7"
	11-7/8"	RFPI 20	26' - 6"	24' - 11"	23' - 1"	25' - 0"	23' - 6"	21' - 9"	23' - 3"	21' - 10"	20' - 3"
		RFPI 40S	27' - 11"	26' - 3"	23' - 10"	26' - 4"	24' - 9"	22' - 11"	24' - 5"	22' - 11"	21' - 3"
		RFPI 400	27' - 11"	26' - 3"	24' - 3"	26' - 4"	24' - 9"	22' - 11"	24' - 5"	22' - 11"	21' - 3"
		RFPI 40	28' - 10"	27' - 1"	25' - 1"	27' - 3"	25' - 7"	23' - 8"	25' - 3"	23' - 9"	22' - 0"
		RFPI 60S	29' - 8"	27' - 10"	25' - 9"	28' - 0"	26' - 3"	24' - 4"	25' - 11"	24' - 5"	22' - 7"
		RFPI 70	31' - 0"	29' - 2"	27' - 0"	29' - 3"	27' - 6"	25' - 6"	27' - 2"	25' - 6"	23' - 8"
		RFPI 80S	33' - 0"	31' - 0"	28' - 8"	31' - 1"	29' - 3"	27' - 1"	28' - 11"	27' - 2"	25' - 2"
		RFPI 90	35' - 4"	33' - 3"	30' - 9"	33' - 5"	31' - 4"	29' - 0"	31' - 0"	29' - 1"	27' - 0"
	14"	RFPI 20	30' - 3"	28' - 5"	26' - 4"	28' - 7"	26' - 10"	24' - 10"	26' - 6"	24' - 11"	23' - 1"
		RFPI 40S	31' - 8"	29' - 4"	26' - 3"	29' - 11"	28' - 1"	25' - 7"	27' - 9"	26' - 1"	24' - 2"
		RFPI 400	31' - 9"	29' - 10"	27' - 8"	30' - 0"	28' - 2"	26' - 1"	27' - 10"	26' - 2"	24' - 3"
		RFPI 40	32' - 11"	30' - 11"	28' - 8"	31' - 0"	29' - 2"	27' - 0"	28' - 10"	27' - 1"	25' - 1"
		RFPI 60S	33' - 9"	31' - 9"	29' - 5"	31' - 10"	29' - 11"	27' - 9"	29' - 7"	27' - 9"	25' - 9"
		RFPI 70	35' - 4"	33' - 3"	30' - 9"	33' - 4"	31' - 4"	29' - 1"	31' - 0"	29' - 1"	27' - 0"
		RFPI 80S	37' - 6"	35' - 3"	32' - 7"	35' - 5"	33' - 3"	30' - 10"	32' - 10"	30' - 10"	28' - 7"
		RFPI 90	40' - 3"	37' - 9"	35' - 0"	38' - 0"	35' - 8"	33' - 0"	35' - 3"	33' - 2"	30' - 8"
	16"	RFPI 40S	34' - 8"	31' - 7"	28' - 3"	33' - 2"	30' - 10"	27' - 7"	30' - 9"	28' - 11"	26' - 8"
		RFPI 400	35' - 4"	33' - 2"	30' - 9"	33' - 4"	31' - 4"	29' - 0"	30' - 11"	29' - 1"	26' - 11"
		RFPI 40	36' - 6"	34' - 4"	31' - 9"	34' - 5"	32' - 5"	30' - 0"	32' - 0"	30' - 1"	27' - 10"
		RFPI 60S	37' - 6"	35' - 3"	32' - 8"	35' - 5"	33' - 3"	30' - 10"	32' - 10"	30' - 10"	28' - 7"
		RFPI 70	39' - 3"	36' - 11"	34' - 2"	37' - 1"	34' - 10"	32' - 3"	34' - 5"	32' - 4"	29' - 11"
		RFPI 80S	41' - 7"	39' - 1"	36' - 2"	39' - 3"	36' - 11"	34' - 2"	36' - 5"	34' - 3"	31' - 9"
		RFPI 90	44' - 7"	41' - 11"	38' - 10"	42' - 1"	39' - 7"	36' - 8"	39' - 1"	36' - 9"	34' - 0"

Load	Joist Depth	Joist Series	Slope of 4/12 or less			Slopes over 4/12 up to 8/12			Slope over 8/12 up to 12/12		
			16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.
20 LIVE / 15 DEAD	9-1/2"	RFPI 20	20' - 11"	19' - 8"	18' - 2"	19' - 8"	18' - 6"	17' - 1"	18' - 2"	17' - 1"	15' - 10"
		RFPI 40S	22' - 1"	20' - 9"	19' - 2"	20' - 9"	19' - 6"	18' - 0"	19' - 2"	18' - 0"	16' - 8"
		RFPI 400	22' - 1"	20' - 9"	19' - 2"	20' - 9"	19' - 6"	18' - 0"	19' - 2"	18' - 0"	16' - 8"
		RFPI 40	22' - 10"	21' - 6"	19' - 10"	21' - 6"	20' - 2"	18' - 8"	19' - 10"	18' - 7"	17' - 3"
		RFPI 60S	23' - 5"	22' - 0"	20' - 4"	22' - 0"	20' - 8"	19' - 1"	20' - 4"	19' - 1"	17' - 8"
		RFPI 70	24' - 6"	23' - 0"	21' - 4"	23' - 1"	21' - 8"	20' - 0"	21' - 3"	20' - 0"	18' - 6"
		RFPI 90	28' - 0"	26' - 4"	24' - 4"	26' - 4"	24' - 9"	22' - 11"	24' - 4"	22' - 10"	21' - 2"
	11-7/8"	RFPI 20	25' - 1"	23' - 7"	21' - 10"	23' - 7"	22' - 2"	20' - 6"	21' - 9"	20' - 5"	18' - 11"
		RFPI 40S	26' - 5"	24' - 8"	22' - 0"	24' - 10"	23' - 4"	21' - 4"	22' - 11"	21' - 6"	19' - 11"
		RFPI 400	26' - 5"	24' - 10"	23' - 0"	24' - 10"	23' - 4"	21' - 7"	22' - 11"	21' - 6"	19' - 11"
		RFPI 40	27' - 4"	25' - 8"	23' - 9"	25' - 8"	24' - 2"	22' - 4"	23' - 9"	22' - 3"	20' - 8"
		RFPI 60S	28' - 1"	26' - 4"	24' - 5"	26' - 4"	24' - 9"	22' - 11"	24' - 4"	22' - 10"	21' - 2"
		RFPI 70	29' - 5"	27' - 7"	25' - 6"	27' - 7"	25' - 11"	24' - 0"	25' - 6"	23' - 11"	22' - 2"
		RFPI 80S	31' - 3"	29' - 4"	27' - 2"	29' - 4"	27' - 7"	25' - 6"	27' - 1"	25' - 5"	23' - 7"
		RFPI 90	33' - 6"	31' - 5"	29' - 1"	31' - 6"	29' - 7"	27' - 4"	29' - 1"	27' - 4"	25' - 3"
	14"	RFPI 20	28' - 8"	26' - 11"	24' - 4"	26' - 11"	25' - 4"	23' - 5"	24' - 10"	23' - 4"	21' - 8"
		RFPI 40S	29' - 8"	27' - 1"	24' - 2"	28' - 2"	26' - 3"	23' - 6"	26' - 0"	24' - 5"	22' - 7"
		RFPI 400	30' - 1"	28' - 3"	26' - 2"	28' - 3"	26' - 7"	24' - 7"	26' - 1"	24' - 6"	22' - 9"
		RFPI 40	31' - 2"	29' - 3"	27' - 1"	29' - 3"	27' - 6"	25' - 6"	27' - 0"	25' - 5"	23' - 6"
		RFPI 60S	32' - 0"	30' - 0"	27' - 10"	30' - 0"	28' - 3"	26' - 2"	27' - 9"	26' - 1"	24' - 2"
		RFPI 70	33' - 6"	31' - 5"	29' - 1"	31' - 6"	29' - 7"	27' - 5"	29' - 1"	27' - 4"	25' - 3"
		RFPI 80S	35' - 6"	33' - 4"	30' - 10"	33' - 4"	31' - 4"	29' - 0"	30' - 10"	28' - 11"	26' - 10"
		RFPI 90	38' - 1"	35' - 9"	33' - 1"	35' - 10"	33' - 7"	31' - 2"	33' - 1"	31' - 1"	28' - 9"
	16"	RFPI 40S	32' - 0"	29' - 2"	26' - 1"	31' - 0"	28' - 4"	25' - 4"	28' - 10"	27' - 2"	24' - 3"
		RFPI 400	33' - 5"	31' - 5"	28' - 5"	31' - 5"	29' - 6"	27' - 4"	29' - 0"	27' - 3"	25' - 3"
		RFPI 40	34' - 7"	32' - 6"	30' - 1"	32' - 6"	30' - 6"	28' - 3"	30' - 0"	28' - 2"	26' - 1"
		RFPI 60S	35' - 6"	33' - 4"	30' - 8"	33' - 4"	31' - 4"	29' - 0"	30' - 10"	28' - 11"	26' - 10"
		RFPI 70	37' - 2"	34' - 11"	32' - 4"	34' - 11"	32' - 10"	30' - 5"	32' - 3"	30' - 4"	28' - 1"
		RFPI 80S	39' - 5"	37' - 0"	34' - 3"	37' - 0"	34' - 9"	32' - 2"	34' - 2"	32' - 1"	29' - 9"
		RFPI 90	42' - 3"	39' - 8"	36' - 9"	39' - 8"	37' - 3"	34' - 6"	36' - 8"	34' - 5"	31' - 11"

Allowable Roof Clear Spans Non-Snow Load - 125% Load Duration

			Slope of 4/12 or less			Slopes over 4/12 up to 8/12			Slope over 8/12 up to 12/12		
	Joist Depth	Joist Series	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.	16" o.c.	19.2" o.c.	24" o.c.
20 LIVE / 20 DEAD	9-1/2"	RFPI 20	20' - 0"	18' - 9"	17' - 4"	18' - 8"	17' - 7"	16' - 3"	17' - 2"	16' - 2"	14' - 11"
		RFPI 40S	21' - 0"	19' - 9"	18' - 0"	19' - 8"	18' - 6"	17' - 2"	18' - 1"	17' - 0"	15' - 9"
		RFPI 400	21' - 0"	19' - 9"	18' - 3"	19' - 8"	18' - 6"	17' - 2"	18' - 1"	17' - 0"	15' - 9"
		RFPI 40	21' - 10"	20' - 6"	18' - 11"	20' - 5"	19' - 2"	17' - 9"	18' - 9"	17' - 8"	16' - 4"
		RFPI 60S	22' - 4"	21' - 0"	19' - 5"	20' - 11"	19' - 8"	18' - 2"	19' - 3"	18' - 1"	16' - 9"
		RFPI 70	23' - 5"	22' - 0"	20' - 4"	21' - 11"	20' - 7"	19' - 1"	20' - 2"	18' - 11"	17' - 6"
		RFPI 90	26' - 9"	25' - 1"	23' - 2"	25' - 0"	23' - 6"	21' - 9"	23' - 0"	21' - 8"	20' - 0"
	11-7/8"	RFPI 20	23' - 11"	22' - 6"	20' - 10"	22' - 5"	21' - 1"	19' - 6"	20' - 7"	19' - 4"	17' - 11"
		RFPI 40S	25' - 2"	23' - 0"	20' - 7"	23' - 7"	22' - 2"	19' - 10"	21' - 8"	20' - 5"	18' - 11"
		RFPI 400	25' - 2"	23' - 8"	21' - 11"	23' - 7"	22' - 2"	20' - 6"	21' - 8"	20' - 5"	18' - 11"
		RFPI 40	26' - 1"	24' - 6"	22' - 8"	24' - 5"	22' - 11"	21' - 3"	22' - 6"	21' - 1"	19' - 6"
		RFPI 60S	26' - 9"	25' - 2"	23' - 3"	25' - 1"	23' - 7"	21' - 10"	23' - 1"	21' - 8"	20' - 1"
		RFPI 70	28' - 0"	26' - 4"	24' - 4"	26' - 3"	24' - 8"	22' - 10"	24' - 2"	22' - 8"	21' - 0"
		RFPI 80S	29' - 9"	27' - 11"	25' - 10"	27' - 11"	26' - 2"	24' - 3"	25' - 8"	24' - 1"	22' - 4"
		RFPI 90	31' - 11"	30' - 0"	27' - 9"	29' - 11"	28' - 1"	26' - 0"	27' - 6"	25' - 10"	23' - 11"
	14"	RFPI 20	27' - 4"	25' - 5"	22' - 9"	25' - 7"	24' - 1"	21' - 9"	23' - 7"	22' - 2"	19' - 10"
		RFPI 40S	27' - 8"	25' - 3"	22' - 7"	26' - 9"	24' - 5"	21' - 10"	24' - 8"	23' - 2"	20' - 10"
		RFPI 400	28' - 8"	27' - 0"	24' - 10"	26' - 11"	25' - 3"	23' - 5"	24' - 9"	23' - 3"	21' - 6"
		RFPI 40	29' - 9"	27' - 11"	25' - 10"	27' - 10"	26' - 2"	24' - 3"	25' - 7"	24' - 1"	22' - 3"
		RFPI 60S	30' - 6"	28' - 8"	26' - 6"	28' - 7"	26' - 10"	24' - 10"	26' - 3"	24' - 8"	22' - 10"
		RFPI 70	31' - 11"	30' - 0"	27' - 9"	29' - 11"	28' - 1"	26' - 0"	27' - 6"	25' - 10"	23' - 11"
		RFPI 80S	33' - 10"	31' - 10"	29' - 5"	31' - 9"	29' - 10"	27' - 7"	29' - 2"	27' - 5"	25' - 5"
		RFPI 90	36' - 4"	34' - 1"	31' - 7"	34' - 0"	32' - 0"	29' - 7"	31' - 4"	29' - 5"	27' - 3"
	16"	RFPI 40S	29' - 10"	27' - 3"	24' - 4"	28' - 10"	26' - 3"	23' - 6"	27' - 4"	25' - 1"	22' - 5"
		RFPI 400	31' - 11"	29' - 8"	26' - 6"	29' - 10"	28' - 1"	25' - 4"	27' - 6"	25' - 10"	23' - 1"
		RFPI 40	33' - 0"	31' - 0"	28' - 2"	30' - 11"	29' - 0"	26' - 11"	28' - 5"	26' - 8"	24' - 9"
		RFPI 60S	33' - 11"	31' - 10"	28' - 7"	31' - 9"	29' - 10"	27' - 7"	29' - 2"	27' - 5"	25' - 5"
		RFPI 70	35' - 6"	33' - 4"	30' - 2"	33' - 3"	31' - 3"	28' - 2"	30' - 7"	28' - 9"	25' - 8"
		RFPI 80S	37' - 7"	35' - 3"	32' - 8"	35' - 2"	33' - 1"	30' - 7"	32' - 5"	30' - 5"	28' - 2"
		RFPI 90	40' - 4"	37' - 10"	35' - 0"	37' - 9"	35' - 5"	32' - 10"	34' - 9"	32' - 8"	30' - 3"



Notes:

1. Roofs must be sloped at least 1/4" in 12" to assure drainage.
2. Deflection under live load is limited to L/240. Deflection under total load is limited to L/180. Verify that the deflection criteria conform to local building code requirements.
3. Table values apply to uniformly loaded simple or multiple span joists. Span is the horizontal distance from face to face of supports. Use appropriate software (e.g. Simpson Strong-Tie® Component Solutions™) or engineering analysis to analyze multiple span joists if the length of any span is less than half the length of an adjacent span.
4. Minimum end bearing length is 1-3/4". Minimum intermediate bearing length is 3-1/2".
5. Table values are based on cantilever lengths up to 2' max. Use member sizing software for longer cantilever lengths.
6. Web stiffeners are not required for spans shown, except for birdsmouth cuts and hangers.

RigidRim® Rimboard Specifications

As a component of the Roseburg Framing System®, RigidRim® Rimboard allows your customers to quickly frame the perimeter of their floor system and is one of the most cost-effective methods to properly transfer vertical and horizontal loads around the I-joist and directly into the supporting walls. RigidRim Rimboard is dimensionally stable and resists shrinking and warping. It also provides a smooth nailing surface for the attachment of exterior sheathing, siding and ledgers. Refer to page 18 for additional framing information. RigidRim Rimboard is currently available in the following materials, thicknesses and grades*:

1-1/8" RigidRim® OSB Rimboard

1-1/8" RigidRim® Plus OSB Rimboard

1-1/2" & 1-3/4" 1.4E RigidRim® LVL Rimboard

*Not all products are available in all markets. Contact your Roseburg EWP representative for availability.

The RigidRim OSB Rimboard products are available in lengths up to 24 ft, and the 1.4E RigidRim LVL Rimboard is available in lengths up to 60 ft. All Rimboard products are available in all of the standard I-joist depths.

RigidRim Rimboard is manufactured in accordance with *ANSI/APA PRR 410 Standard for Performance-Rated Engineered Wood Rim Boards* which meets or exceeds the requirements given in the ICC-ES Acceptance Criteria for Wood-Based Rim Board Products, AC 124. Furthermore, the 1.4E LVL rimboard is included in ICC-ES code report ESR-1210. See Table 1 below for RigidRim design capacities. All RigidRim Rimboard products have been tested in the edgewise bending orientation and therefore may be designed for applications to support loads over window and door openings. See Table 2 below for allowable design properties for edgewise bending. See Table 3 below for allowable uniform loads for specified spans (see APA publication *W345 Performance Rated Rim Boards®* for additional information).

TABLE 1: RIGIDRIM RIMBOARD DESIGN CAPACITIES (1)(2)(3)

	Rimboard Width (in)	Horizontal Load (plf)	Vertical Load (plf)	1/2" Lag Screw Load (lbs)(4)	Post Load (lbs)
RigidRim® OSB	1-1/8"	180 (8d box or common)	4,850[5] / 3,200[6]	350	3,500[7]
RigidRim® Plus OSB	1-1/8"	200 (8d box or common)	4,850[5] / 3,200[6]	350	3,500[7]
1.4E RigidRim® LVL	1-1/2"	215 (8d box or common)	4,900[5] / N.A.[6]	400	3,500[5]
1.4E RigidRim® LVL	1-3/4"	215 (8d box or common)	5,500[5] / N.A.[6]	400	3,500[5]

1. All design properties assume rimboard nailing of 8d nails at 6" on-center. Additional nailing does not guarantee additional load capacity. Refer to APA document Y250 for additional load transfer details.
2. All design values, except Horizontal Load, are based on a 10-year load duration (100%) and should be adjusted for other load durations in accordance with the applicable code. Horizontal Load may not be adjusted for duration of load.
3. The 16d (box or common) nails used to connect the bottom plate of a wall to the rimboard through the sheathing do not reduce the horizontal load capacity of the rimboard provided that the 8d nail spacing (sheathing to rimboard) is 6" o.c. and the 16d nail spacing (bottom plate to sheathing to rimboard) is in accordance with the prescriptive requirements of the applicable code.
4. Allowable load for lag screw installed perpendicular to wide face of rimboard.
5. Depth ≤ 16"
6. 16" < Depth ≤ 24". Allowable load for intermediate depths can be found in APA publication W345.
7. Depth ≤ 24"

TABLE 2: RIGIDRIM RIMBOARD EDGEWISE DESIGN PROPERTIES

	Flexural Stress	Modulus of Elasticity	Horizontal Shear	Compression Perpendicular to Grain(2)
RigidRim® OSB & RigidRim® Plus OSB	600 psi (1)	0.55 x 10^6 psi	270 psi	550 psi
1.4E RigidRim® LVL	2,250 psi	1.4 x 10^6 psi	200 psi	560 psi

(1) Allowable edgewise bending stress is applicable only to a span of 4' or less

(2) Compression Perpendicular to Grain value may not be increased for duration of load

TABLE 3: ALLOWABLE UNIFORM LOAD FOR RIGIDRIM® OSB AND RIGIDRIM® PLUS OSB RIMBOARD USED AS HEADERS(1)(2)(3)(4)

Rimboard Size	Span				
	24"	30"	36"	42"	48"
	Total Load (plf)/Minimum End Bearing (in)				
1-1/8"x 9-1/2"	1,330 / 3.0	890 / 3.0	630 / 3.0	510 / 1.5	390 / 1.5
1-1/8"x 11-7/8"	1,870 / 4.5	1,270 / 4.5	990 / 3.0	740 / 3.0	580 / 3.0
2 ply 1-1/8"x 14"	4,520 / 6.0	3,540 / 4.5	2,570 / 4.5	1,940 / 4.5	1,610 / 3.0
2 ply 1-1/8"x 16"	5,170 / 6.0	4,250 / 6.0	3,120 / 6.0	2,540 / 4.5	1,990 / 4.5

(1) This table is for preliminary design use only. Final design should include a complete analysis.

(2) Span = clear span for simply supported member with uniform loads only.

(3) Joints in rimboard shall not be located within opening.

(4) Spans shown can conservatively be used for 1-1/4" wide RigidRim Plus and 1.4E RigidRim LVL.

RigidLam® LVL Product Line

You've probably been building with traditional solid sawn lumber beams, headers, columns, studs and stair stringers for as long as you've been building. Now through advances in technology and design, there is a better choice – RigidLam LVL (Laminated Veneer Lumber) beams, headers, columns, studs and stair stringers. They are simply a better alternative than traditional solid sawn lumber pieces. Work with a stronger, stiffer, more consistent and more predictable building material. Compared with similar sized sections, our RigidLam LVL products can support heavier loads and allow greater spans than conventional lumber.

MOISTURE REPELLENT SEALER

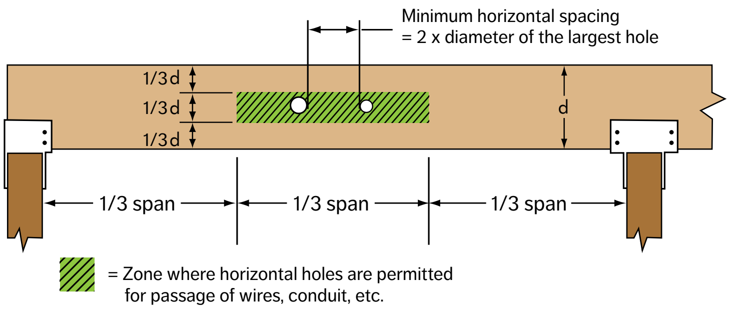
RigidLam LVL is coated with a wax-based moisture repellent sealer that is formulated specifically for LVL to provide temporary protection against moisture issues during normal storage and construction schedules. It is applied to all six sides of the LVL during the manufacturing process.

STORAGE, HANDLING & INSTALLATION

- Do not drop RigidLam LVL off the delivery truck. Best practice is use of a forklift or boom.
- RigidLam LVL should be stored lying flat and protected from the weather.
- Keep the material a minimum of 6" above ground to minimize the absorption of ground moisture and allow circulation of air.
- Bundles should be supported every 10' or less.
- RigidLam LVL is for use in covered, dry conditions only. Protect from the weather on the jobsite both before and after installation.
- 1-1/2" x 14" and deeper and 1-3/4" x 16" and deeper must be a minimum of two plies unless designed by a design professional for a specific application.
- RigidLam LVL headers and beams shall not be cut, notched or drilled except as shown below. Heel cuts may be possible. Contact your Roseburg Forest Products representative.
- It is permissible to rip RigidLam LVL to a non-standard depth provided it is structurally adequate for the applied loads. Use appropriate software (e.g. Simpson Strong-Tie® Component Solutions™) or engineering analysis to analyze non-standard depths.
- Protect RigidLam LVL from direct contact with concrete or masonry.
- Ends of RigidLam LVL bearing in concrete or masonry pockets must have a minimum of 1/2" airspace on top, sides and end.
- RigidLam LVL is manufactured without camber and therefore may be installed with either edge up or down.
- Do not install damaged RigidLam LVL.
- Do not walk on beams until they are fully braced, or serious injuries may result.

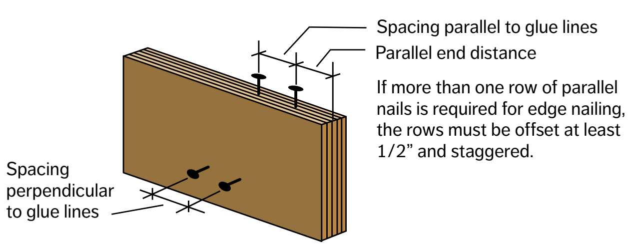
See additional notes on page 7

PERMISSIBLE HORIZONTAL ROUND HOLE LOCATION FOR RIGIDLAM® LVL BEAMS



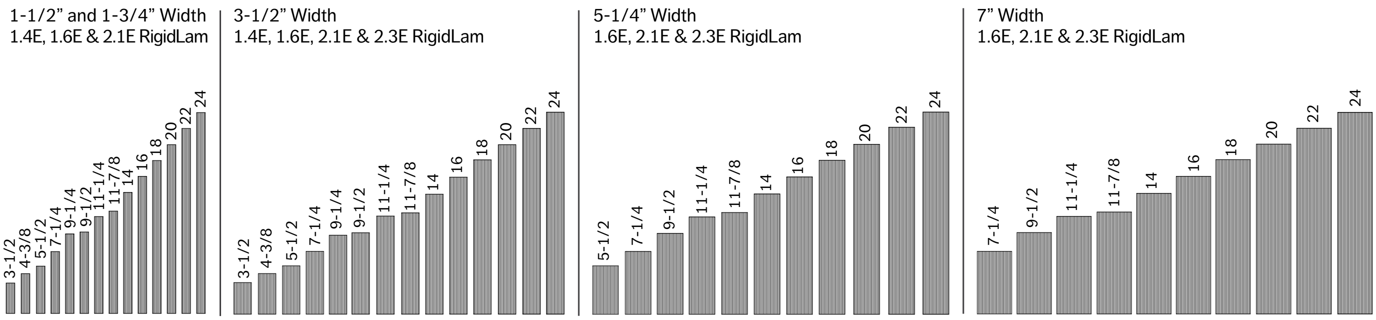
- For beam depths (d) of 4-3/8, 5-1/2, and 7-1/4 inches, the maximum hole diameter is 1, 1-1/8, and 1-1/2 inches, respectively.
- For deeper beams, the maximum hole diameter is 2 inches.
- Diagram applies for simple and multi-span applications with uniform loading.
- No more than 3 holes per span are permitted.
- Holes should not be cut in cantilevers.
- Note: Larger holes, more holes and/or holes that are located outside of the shaded area shown may be permissible as verified by appropriate software (e.g. Simpson Strong-Tie® Component Solutions™) or engineering analysis.

MINIMUM NAIL SPACING FOR RIGIDLAM LVL BEAMS



Nail Size	Minimum Parallel Spacing	Minimum Parallel End Distance	Minimum Perpendicular Spacing
8d Box	2"	1-1/2"	2"
8d Common	3"	2"	2"
10d & 12d Box	3"	2"	2"
10d & 12d Common	4"	3"	3"
16d Sinker	4"	3"	3"
16d Common	6"	4"	3"

Available RigidLam® LVL Sizes*



*Not all grades and/or sizes available in all markets. Contact your Roseburg EWP representative for availability.

RigidLam® LVL Allowable Design Stresses[1]

		1.4E LVL	1.6E LVL	2.1E LVL	2.3E LVL
True Modulus of Elasticity (MOE)[2] – Edgewise or Flatwise	E (psi) =	1,400,000	1,600,000	2,100,000	2,300,000
Apparent Modulus of Elasticity (MOE)[2] – Edgewise or Flatwise	E (psi) =	1,300,000	1,500,000	2,000,000	2,200,000
Bending – Edgewise[3,4]	F_b edge (psi) =	2,250	2,250	3,100	3,100
Bending – Flatwise[5]	F_b flat (psi) =	2,250	2,250	3,100	3,100
Horizontal Shear - Edgewise	F_v edge (psi) =	200	220	290	290
Horizontal Shear - Flatwise	F_v flat (psi) =	130	130	130	130
Compression Perp. To Grain[2] - Edgewise	$F_{c\ perp}$ edge (psi) =	560	575	750	750
Compression Perp. To Grain[2] - Flatwise	$F_{c\ perp}$ flat (psi) =	650	650	650	650
Compression Parallel to Grain	$F_{c\ para}$ (psi) =	1,950	1,950	3,000	3,000
Tension Parallel to Grain[6]	F_t (psi) =	1,500	1,500	2,100	2,100
MOE for stability calculations[2]	E_{min} (psi) =	704,639	805,301	1,056,958	1,157,620

1. These allowable design stresses apply to dry service conditions. RigidLam shall not be used for exterior conditions exposed to elements.
2. No increase is allowed for duration of load.
3. The tabulated values are based on a reference depth of 12 inches. For other depths, when loaded edgewise, the allowable bending stress (Fb) shall be modified by a depth factor, Kd = $(12/d)^{1/8}$ for Douglas-fir (DF) LVL (Mill #1055) or Kd = $(12/d)^{1/5}$ for Southern Pine (SP) LVL (Mill #1125), where d is the LVL depth in inches. For depths less than 3-1/2 inches, multiply the tabulated value by 1.17 for DF LVL or 1.28 for SP LVL.
4. A factor of 1.04 may be applied for repetitive members as defined in the National Design Specification for Wood Construction.
5. Tabulated F_b flat values are based on a width of 1-3/4". For other widths, when loaded flatwise, multiply F_b flat by $(1.75/t)^{1/5}$, where t is the LVL width in inches. For widths less than 1-3/4", use the tabulated value.
6. Tensile stress is based on a 4-foot gage length. For greater lengths, multiply F_t by $(4/L)^{1/9}$ where L = length in feet. For lengths less than four feet, use the tabulated value.

RigidLam® LVL Design Values (1-Ply 1-3/4" Edgewise)

	1.6E Douglas-fir RigidLam LVL				2.1E Douglas-fir RigidLam LVL				2.3E Douglas-fir RigidLam LVL				2.1E Southern Pine RigidLam LVL			
Depth (in)	Max. Vert. Shear (lbs)	Max. Moment (ft-lbs)	EI x10[6] (lbs-in²)	Approx. Weight (lbs/ft)	Max. Vert. Shear (lbs)	Max. Moment (ft-lbs)	EI x10[6] (lbs-in²)	Approx. Weight (lbs/ft)	Max. Vert. Shear (lbs)	Max. Moment (ft-lbs)	EI x10[6] (lbs-in²)	Approx. Weight (lbs/ft)	Max. Vert. Shear (lbs)	Max. Moment (ft-lbs)	EI x10[6] (lbs-in²)	Approx. Weight (lbs/ft)
3-1/2	898	781	10	1.53	1,184	1,077	13	1.62	1,184	1,077	14	1.62	1,184	1,181	13	1.79
4-3/8	1,123	1,187	20	1.91	1,480	1,636	26	2.02	1,480	1,636	28	2.02	1,480	1,765	26	2.23
5-1/4	1,348	1,671	34	2.30	1,776	2,303	44	2.42	1,776	2,303	49	2.42	1,776	2,450	44	2.68
5-1/2	1,412	1,824	39	2.41	1,861	2,513	51	2.54	1,861	2,513	56	2.54	1,861	2,664	51	2.81
7	1,797	2,866	80	3.06	2,368	3,949	105	3.23	2,368	3,949	115	3.23	2,368	4,112	105	3.57
7-1/4	1,861	3,061	89	3.17	2,453	4,218	117	3.35	2,453	4,218	128	3.35	2,453	4,380	117	3.70
9-1/4	2,374	4,834	185	4.05	3,130	6,660	242	4.27	3,130	6,660	265	4.27	3,130	6,791	242	4.72
9-1/2	2,438	5,082	200	4.16	3,214	7,002	263	4.39	3,214	7,002	288	4.39	3,214	7,125	263	4.85
11-1/4	2,888	6,977	332	4.92	3,806	9,613	436	5.20	3,806	9,613	478	5.20	3,806	9,660	436	5.74
11-7/8	3,048	7,722	391	5.20	4,018	10,639	513	5.48	4,018	10,639	562	5.48	4,018	10,647	513	6.06
14	3,593	10,514	640	6.13	4,737	14,486	840	6.47	4,737	14,486	920	6.47	4,737	14,320	840	7.15
16	4,107	13,506	956	7.00	5,413	18,608	1,254	7.39	5,413	18,608	1,374	7.39	5,413	18,210	1,254	8.17
18	4,620	16,843	1,361	7.88	6,090	23,206	1,786	8.31	6,090	23,206	1,956	8.31	6,090	22,511	1,786	9.19
20	5,133	20,522	1,867	8.75	6,767	28,275	2,450	9.24	6,767	28,275	2,683	9.24	6,767	27,212	2,450	10.21
22	5,647	24,537	2,485	9.63	7,443	33,807	3,261	10.16	7,443	33,807	3,572	10.16	7,443	32,305	3,261	11.23
24	6,160	28,886	3,226	10.50	8,120	39,798	4,234	11.08	8,120	39,798	4,637	11.08	8,120	37,782	4,234	12.25

1. Allowable shear and moment values are for 100% Duration of Load and may be adjusted for other durations of load. EI shall not be adjusted for duration of load.
2. For 2-Ply, 3-Ply and 4-Ply LVL members, the values in the tables may be multiplied by 2, 3 and 4 respectively.
3. For 1-1/2" wide LVL members, allowable design values may be obtained by multiplying the table values by 0.857.
4. 1-1/2" wide members 14" and deeper must be a minimum of two plies unless designed by a design professional for a specific application.
5. 1-3/4" wide members 16" and deeper must be a minimum of two plies unless designed by a design professional for a specific application.
6. Single ply 1-1/2" wide members are assumed to be laterally braced at 16" o.c. or less.
7. Single ply 1-3/4" wide members are assumed to be laterally braced at 24" o.c. or less.
8. Single ply for any depth are allowed for ledgers.

RigidLam® LVL Online Resources

The following RigidLam LVL resources can be accessed online at www.roseburg.com:

- PLF (pounds per lineal foot) Tables for Douglas-fir and Southern Pine LVL
- Quick Reference Tables for Douglas-fir and Southern Pine LVL
    - Floor beams
    - 1-story garage door headers
    - 2-story garage door headers
    - 1-story window & door headers
    - 2-story window & door headers
- RigidLam LVL Column Tables for Douglas-fir
- RigidLam LVL Bearing Length Requirements

RigidLam® LVL Columns

Douglas-fir LVL

ALLOWABLE AXIAL LOAD CAPACITY (LBS) FOR 1.6E RIGIDLAM®LVL COLUMNS

Effective Column Length (ft.)	Column Size: 3-1/2" x 3-1/2" Floor 100%	Roof Snow 115%	Roof Live 125%	3-1/2" x 5-1/2" Floor 100%	Roof Snow 115%	Roof Live 125%	3-1/2" x 7-1/4" Floor 100%	Roof Snow 115%	Roof Live 125%	5-1/4" x 5-1/2" Floor 100%	Roof Snow 115%	Roof Live 125%	5-1/4" x 7-1/4" Floor 100%	Roof Snow 115%	Roof Live 125%	7" x 7-1/4" Floor 100%	Roof Snow 115%	Roof Live 125%
6	8,555	9,110	9,425	13,455	14,315	14,815	17,735	18,870	19,530	26,535	29,405	31,170	34,975	38,760	41,090	50,400	56,800	60,905
7	7,160	7,530	7,745	11,250	11,835	12,170	14,830	15,600	16,045	24,270	26,535	27,885	31,990	34,980	36,760	48,020	53,710	57,300
8	6,015	6,275	6,430	9,450	9,870	10,105	12,460	13,010	13,320	21,900	23,615	24,605	28,870	31,130	32,435	45,385	50,320	53,370
9	5,095	5,290	5,400	8,010	8,315	8,485	10,560	10,960	11,190	19,575	20,865	21,615	25,805	27,505	28,490	42,545	46,710	49,230
10	4,360	4,510	4,590	6,855	7,085	7,220	9,035	9,340	9,515	17,425	18,410	18,990	22,970	24,270	25,030	39,560	42,995	45,035
11	3,770	3,880	3,945	5,920	6,100	6,200	7,805	8,040	8,175	15,510	16,290	16,745	20,445	21,475	22,075	36,570	39,350	40,975
12	3,285	3,375	3,425	5,160	5,300	5,385	6,805	6,990	7,095	13,845	14,475	14,840	18,255	19,085	19,565	33,645	35,905	37,220
13	2,885	2,955	3,000	4,535	4,650	4,715	5,980	6,130	6,215	12,410	12,915	13,215	16,360	17,025	17,425	30,870	32,725	33,810
14	2,555	2,610	2,645	4,015	4,105	4,160	5,290	5,410	5,480	11,170	11,585	11,835	14,725	15,275	15,600	28,320	29,870	30,770
15										10,090	10,445	10,645	13,300	13,765	14,035	26,005	27,320	28,070
16										9,155	9,455	9,625	12,070	12,460	12,685	23,920	25,035	25,680
17										8,340	8,590	8,735	10,995	11,325	11,520	22,045	23,000	23,555
18										7,620	7,840	7,965	10,050	10,335	10,500	20,355	21,185	21,665
19										6,995	7,180	7,285	9,220	9,465	9,605	18,850	19,575	19,985
20										6,435	6,600	6,695	8,485	8,700	8,825	17,490	18,120	18,480
21										5,940	6,085	6,165	7,830	8,020	8,125	16,265	16,820	17,140
22																15,160	15,645	15,930
23																14,150	14,590	14,840
24																13,245	13,630	13,855
25																12,420	12,765	12,965

ALLOWABLE AXIAL LOAD CAPACITY (LBS) FOR 2.1E RIGIDLAM®LVL COLUMNS

Effective Column Length (ft.)	Column Size: 3-1/2" x 3-1/2" Floor 100%	Roof Snow 115%	Roof Live 125%	3-1/2" x 5-1/2" Floor 100%	Roof Snow 115%	Roof Live 125%	3-1/2" x 7-1/4" Floor 100%	Roof Snow 115%	Roof Live 125%	5-1/4" x 5-1/2" Floor 100%	Roof Snow 115%	Roof Live 125%	5-1/4" x 7-1/4" Floor 100%	Roof Snow 115%	Roof Live 125%	7" x 7-1/4" Floor 100%	Roof Snow 115%	Roof Live 125%
6	11,585	12,280	12,685	18,205	19,300	19,935	23,995	25,440	26,280	37,155	40,960	43,285	48,975	53,995	57,055	71,625	80,475	86,125
7	9,615	10,085	10,360	15,110	15,850	16,280	19,920	20,895	21,465	33,560	36,465	38,195	44,240	48,070	50,345	67,730	75,460	80,290
8	8,040	8,375	8,570	12,635	13,165	13,470	16,655	17,355	17,755	29,925	32,090	33,355	39,445	42,300	43,970	63,480	70,035	74,045
9	6,795	7,040	7,185	10,680	11,065	11,295	14,075	14,585	14,885	26,495	28,135	29,090	34,925	37,090	38,345	58,980	64,375	67,610
10	5,800	5,990	6,100	9,120	9,420	9,585	12,025	12,415	12,635	23,445	24,715	25,450	30,910	32,580	33,545	54,365	58,730	61,305
11	5,005	5,150	5,235	7,865	8,095	8,225	10,370	10,670	10,845	20,805	21,805	22,380	27,430	28,740	29,505	49,815	53,355	55,425
12	4,355	4,470	4,540	6,845	7,030	7,130	9,025	9,265	9,400	18,515	19,325	19,790	24,410	25,470	26,085	45,545	48,400	50,105
13	3,825	3,915	3,970	6,010	6,155	6,240	7,925	8,115	8,225	16,565	17,215	17,600	21,835	22,695	23,200	41,630	43,985	45,370
14	3,380	3,455	3,500	5,315	5,430	5,500	7,005	7,160	7,250	14,880	15,425	15,735	19,615	20,330	20,740	38,055	40,040	41,195
15										13,430	13,885	14,150	17,705	18,305	18,650	34,855	36,535	37,525
16										12,170	12,550	12,775	16,045	16,545	16,840	31,995	33,425	34,255
17										11,080	11,400	11,585	14,605	15,030	15,275	29,445	30,665	31,385
18										10,115	10,395	10,555	13,335	13,700	13,915	27,165	28,225	28,835
19										9,275	9,515	9,650	12,225	12,540	12,720	25,125	26,045	26,575
20										8,530	8,735	8,855	11,240	11,515	11,675	23,285	24,095	24,565
21										7,870	8,055	8,155	10,375	10,615	10,750	21,635	22,345	22,755
22																20,150	20,780	21,130
23																18,800	19,360	19,685
24																17,580	18,080	18,365
25																16,475	16,920	17,175

Notes:

1. Column is a single, one-piece member for dry-use applications only. **DO NOT use these tables for multi-ply, built-up column applications.**
2. Column is assumed to have adequate bracing in all directions at both ends.
3. Loads are calculated per the 2018 National Design Specification® for axial loads only.
4. For side-loaded columns, use appropriate design software or consult with a design professional.
5. Table assumes an eccentricity of 1/6 of the smaller column dimension.
6. Table assumes column bearing to be steel or concrete. When bearing on a wood plate (with F_C perp = 425 PSI), axial loads shall not exceed the load shown below for the given column size for all durations of load:

Column Size	3½" x 3½"	3½" x 5½"	3½" x 7¼"	5¼" x 5½"	5¼" x 7¼"	7" x 7¼"
Load (lbs.)	5,206	8,181	10,784	12,272	16,177	21,569

Note: The 2.1E chart is the same as 2.0E apparent because 2.1E is 5% higher than 2.0E and the multiplier for Emin went from 1.05 to 1.0 when switching to True MOE. This will not be the case for other MOE values. The values for 1.6E true will be slightly higher than the values for 1.5E apparent because 1.6E is 6.67% higher than 1.5E but Emin is still reduced by 5%. The values for 2.3E true will be slightly lower than the values for 2.2E app since 2.3 is only 4.5% higher than 2.2. Douglas-fir and Southern pine values are the same.

1.6E RigidLam LVL Allowable Design Stresses(1)

True Modulus of Elasticity (MOE) E = 1,600,000 psi(2)
Bending (edgewise & flatwise) F_b = 2,250 psi(3)(4)
Compression Parallel to Grain F_c = 1,950 psi

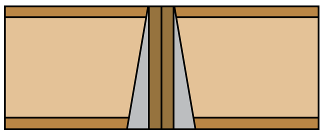
2.1E RigidLam LVL Allowable Design Stresses(1)

True Modulus of Elasticity (MOE) E = 2,100,000 psi(2)
Bending (edgewise & flatwise) F_b = 3,100 psi(3)(4)
Compression Parallel to Grain F_c = 3,000 psi

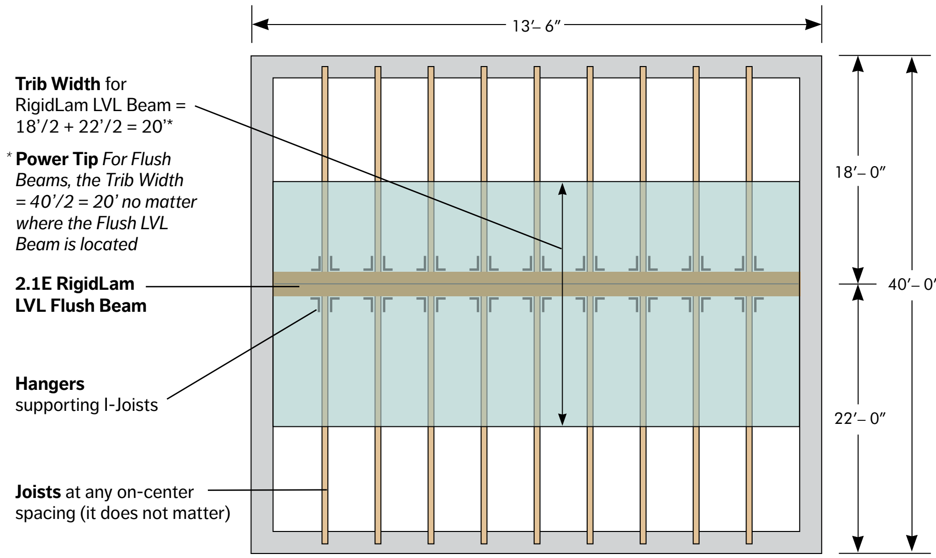
(1) These allowable design stresses apply to dry service conditions.
(2) No increase is allowed for duration of load.
(3) Edgewise bending: For depths other than 12" multiply F_b by $(12/d)^{1/8}$, where d = depth of member (inches).
(4) Flatwise bending: For thicknesses greater than 1-3/4" multiply F_b by $(1.75/t)^{1/5}$, where t = thickness of member (inches).

Load Development (Pounds per Lineal Foot)

CASE ONE: FLUSH BEAM



Typical **Flush Beam** Framing



Step 1 Determine the Trib Width (expressed in units of feet). In the example at right, the Trib Width = 20'.

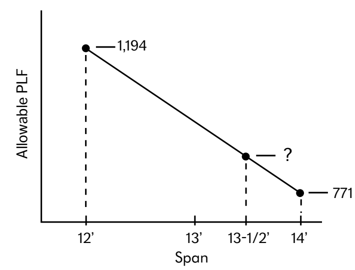
Step 2 Determine the Live Load plf and Total Load plf on the Beam:
plf_{LL} = (psf_{LL}) x (Trib Width). Here,
plf_{LL} = 40 psf x 20' = 800 plf_{LL}
plf_{TL} = (psf_{TL}) x (Trib Width). Here,
plf_{TL} = 50 psf x 20' = 1,000 plf_{TL}

Step 3 Use the appropriate PLF Table (pages 48 - 53), and match the span of the LVL beam with the left "Span" column of the table. Always round the beam span up to the next whole foot (14' for this example).

Step 4 For a span of 14', going from left to right, find a beam that supports a LL equal to or greater than 800 plf and a TL equal to or greater than 1,000 plf. Both checks must be made to properly size the beam.

Step 5 A 2 ply 14" RigidLam LVL will work (820>800 and 1,155>1,000) but a 3 ply 11-7/8," comes close. To check if the 3 ply 11-7/8," LVL works at the actual span of 13'– 6", interpolate the table between 12' and 14'. If you are not familiar with this, use the diagram as shown below to set up the interpolation as follows:

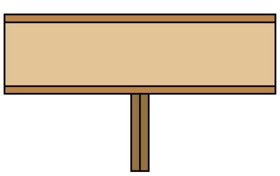
For LL $\dfrac{(1{,}194-771)}{(14'-12')} = \dfrac{(\,?-771)}{(14'-13.5')} \Rightarrow 211.5 = \dfrac{(\,?-771)}{0.5} \Rightarrow (211.5 \times 0.5) + 771 = \,? \Rightarrow \,? = 876.75$ plf > 800 plf OK



The plf value for TL at 14' is 1,139 plf and since this is greater than the required 1,000 plf, interpolation is not required for total load.

Therefore, an alternative solution would be a 3 ply 11-7/8," 2.1E RigidLam LVL (877>800 and 1,139>1,000)

CASE TWO: DROPPED BEAM



Typical **Dropped Beam** Framing

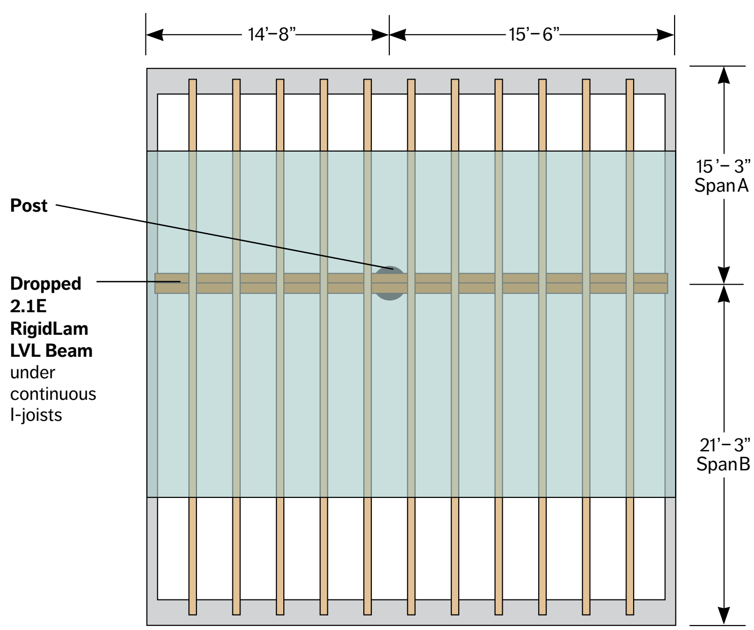
When the LVL beam is dropped and the I-joists are continuous over the beam, there is more load transferred to the beam. This is because the continuous I-joists increase the trib width of the beam (green shaded area).

If both spans of the I-joist are equal, there is 25% more load put onto the LVL beam. If both spans are not equal, like shown in the diagram to the right (Span B > Span A), there is even more load placed onto the LVL beam. The exact formula is complicated but fortunately there is a simple and safe way to size the LVL beam:

Step 1 Assume both spans of the I-joist to be the longest span. In the example to the right, this would be Span B (21.25 ft).

Step 2 Calculate the plf on the LVL beam as if it were flush and increase by 25%:
plf_{LL}= 40 psf x 21.25' x 1.25 = 1,063 plf_{LL}
plf_{TL}= 50 psf x 21.25' x 1.25 = 1,329 plf_{TL}

Step 3 Use the longest span of the LVL beam (round up to the next whole foot , 16' for this example) and use the appropriate plf table. In this example, use a 2 ply 2.1E 18" RigidLam LVL beam (1,138>1,063 & 1,389>1,329).

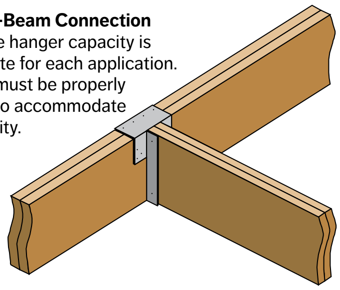


This method will always be safe provided the long span of the I-joist (Span B) is not more than five times longer than the shorter span (Span A). When possible, use appropriate software (e.g. Simpson Strong-Tie® Component Solutions™) or engineering analysis to determine solution.

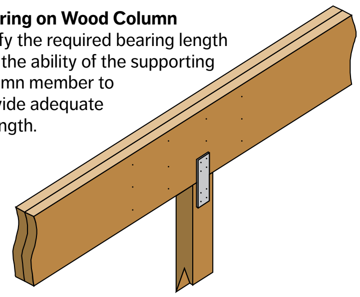
RigidLam LVL Bearing Details

Please refer to the RigidLam LVL Bearing Length Requirements document on the Roseburg website (www.roseburg.com).

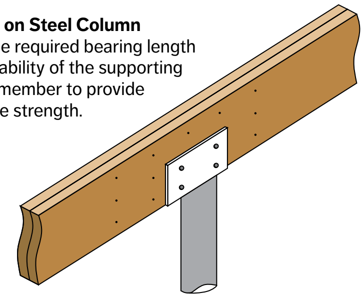
Beam-to-Beam Connection
Make sure hanger capacity is appropriate for each application. Hangers must be properly installed to accommodate full capacity.



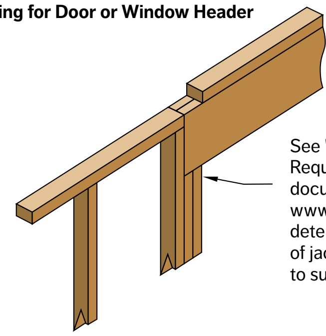
Bearing on Wood Column
Verify the required bearing length and the ability of the supporting column member to provide adequate strength.



Bearing on Steel Column
Verify the required bearing length and the ability of the supporting column member to provide adequate strength.

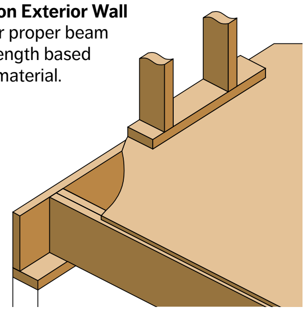


Bearing for Door or Window Header

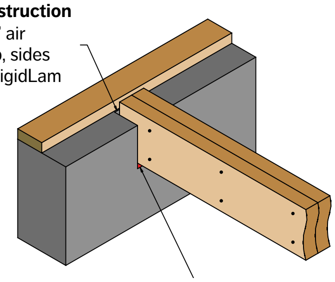


See "Bearing Length Requirements" document online at www.roseburg.com to determine the number of jack studs required to support header.

Bearing on Exterior Wall
Check for proper beam bearing length based on plate material.



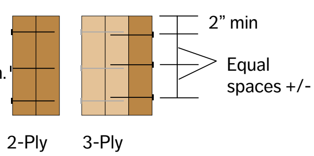
Pocket Construction
Provide 1/2" air space on top, sides and end of RigidLam LVL beams.



Provide moisture barrier between RigidLam LVL beams and concrete.

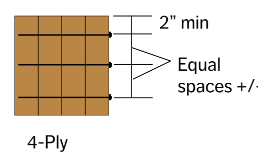
Fastening Recommendations For Multiple Ply Members

Top Loaded Members - 2 & 3 Ply



For 12" deep (or less) members, nail plies together with two rows of 16dx3-1/2" com. nails at 12" o.c. (add 1 row for 16d sinkers).
For 14", 16" or 18" deep members, nail plies together with three rows of 16dx3-1/2" com. nails at 12" o.c. (add one row for 16d sinkers). For 20", 22" or 24" deep members, nail plies together with four rows of 16dx3-1/2" com. nails at 12" o.c. (add one row for 16d sinkers).

Top Loaded Members - 4 Ply



For 4-Ply Top Loaded members, it is recommended to connect the plies together with appropriate wood screws (see page 42 for approved wood screws).
The recommended fastener spacing is two rows at 24" o.c. for up to and including 16" deep members, and three rows at 24" o.c. for members up to and including 24" deep. If the fastener point penetrates a minimum of 75% of the 4th ply, they may be applied from one side of the beam; otherwise, the fasteners must be applied from both sides and staggered. Load must be applied evenly to all four plies; otherwise, use connections for side loaded members.

Side Loaded Members

MAXIMUM UNIFORM LOAD APPLIED TO EITHER OUTSIDE PLY - POUNDS PER LINEAL FOOT

# of 1-1/2" Plies	Nailed: 10d common (0.148" ø X 3")		Bolted: 1/2" ø Through Bolt					
	2 rows at 12" o.c.	3 rows at 12" o.c.	2 rows at 24" o.c.		2 rows at 12" o.c.		3 rows at 12" o.c.	
	All Grades	All Grades	1.4E / 1.6E	2.1E / 2.3E	1.4E / 1.6E	2.1E / 2.3E	1.4E / 1.6E	2.1E / 2.3E
2	465	700	395	435	795	870	1,190	1,305
3	350	525	295	325	595	650	895	980
4	-	-	265	290	530	580	795	870
# of 1-3/4" Plies	**Nailed: 16d common (0.162" ø X 3-1/2")**		**Bolted: 1/2" ø Through Bolt**					
	2 rows at 12" o.c.	3 rows at 12" o.c.	2 rows at 24" o.c.		2 rows at 12" o.c.		3 rows at 12" o.c.	
	All Grades	All Grades	1.4E / 1.6E	2.1E / 2.3E	1.4E / 1.6E	2.1E / 2.3E	1.4E / 1.6E	2.1E / 2.3E
2	560	845	460	505	925	1,015	1,390	1,520
3	420	635	345	380	695	760	1,040	1,140
4	-	-	305	335	615	675	925	1,015
(2) 3-1/2"	-	-	820	860	1,640	1,720	2,465	2,580

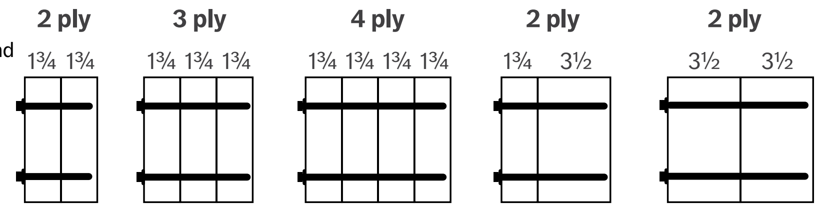
RIGIDLAM LVL EQUIVALENT SPECIFIC GRAVITY VALUES FOR FASTENER DESIGN

	Face			Edge		
	DF		SP	DF		SP
	1.4E & 1.6E LVL	2.1E & 2.3E LVL	1.6E & 2.1E LVL	1.4E & 1.6E LVL	2.1E & 2.3E LVL	1.6E & 2.1E LVL
Withdrawal - nail	0.50	0.50	0.50	0.47	0.50	0.43
Dowel Bearing - nail	0.50	0.50	0.55	0.50	0.50	0.49
Dowel Bearing - bolt	0.47	0.50	0.55	Not applicable		

- Use appropriate software (e.g. Simpson Strong-Tie® Component Solutions™) or beam/header Quick Reference Tables or PLF load tables to size the beam.
- The table values apply to common (A307) bolts. Bolt holes must be centered at least two inches from the top and bottom edges of the beam. Bolt holes must be the same diameter as the bolts. Washers must be used under the bolt heads and nuts. Offset or stagger rows of bolt holes by one-half of the bolt spacing.
- The specified nailing applies to both sides of a three-ply beam.
- Seven inch wide beams may not be loaded from one side only. They must be loaded from both sides and/or top-loaded.
- The side loaded table values for nails may be doubled for 6" o.c. spacing and tripled for 4" o.c. spacing.
- Duration of load factors (e.g. 115%, 125% etc...) may be applied to the table values.

Fastening Recommendations For Multiple Ply LVL Members (cont.)

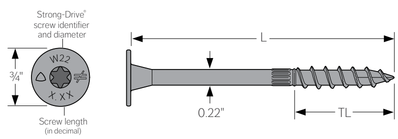
- The wood screws listed are approved for use in connecting multiple plies of RigidLam® LVL together and may be used as an alternative to the nailing or bolting guidelines on the previous page.
- Pre-drilling of the LVL members is not required for the screws listed below.
- Carefully review and adhere to the design and installation information available from each of the screw manufacturers listed below.



The diagrams above are for illustrative purposes only, screws may need to be applied to both sides. Refer to the manufacturers' information for the appropriate design and installation guidelines.

Simpson SDW Wood Screws

SIMPSON Strong-Tie® CONNECTORS

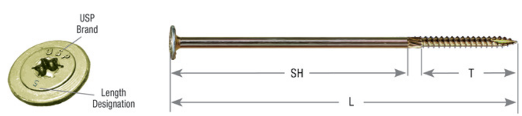


Model No.	L (in)	TL (in)	Head Stamp Length
SDW22338	3-3/8	1-9/16	3.37
SDW22500	5	1-9/16	5.00
SDW22634	6-3/4	1-9/16	6.75

- Code Evaluation Report – IAPMO ER-0192
- For SDW design and installation information or hanger information, refer to the current Simpson Strong-Tie literature, www.strongtie.com or contact Simpson Strong-Tie at 800-999-5099.

MiTek WSWH Washer Head Structural Wood Screws

MiTek®

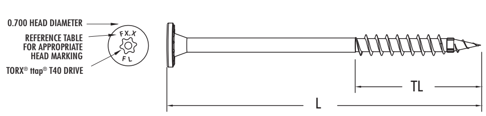


Model No.	L (in)	SH (in)	T (in)
WSWH338	3-3/8	1-1/8	2
WSWH5	5	2-3/4	2
WSWH634	6-3/4	4-1/2	2

- Code Evaluation Report: ICC-ES ESR-2761
- For WSWH design and installation information or hanger information, refer to the current MiTek Structural Product Catalog, www.MiTek-us.com or contact MiTek at 800-328-5934.

FastenMaster FlatLOK™ Wood Screws

FastenMaster FlatLOK™ Structural Wood Screw



Product	L (in)	TL (in)	Head Marking
FL312	3-1/2	2	F3.5FL
FL005	5	2	F5.0FL
FL634	6-3/4	2	F6.75FL

- Code Evaluation Report – DrJ - TER 1501-08
- For FlatLOK design and installation information, refer to the current FastenMaster literature, www.fastenmaster.com or contact FastenMaster at 800-518-3569.

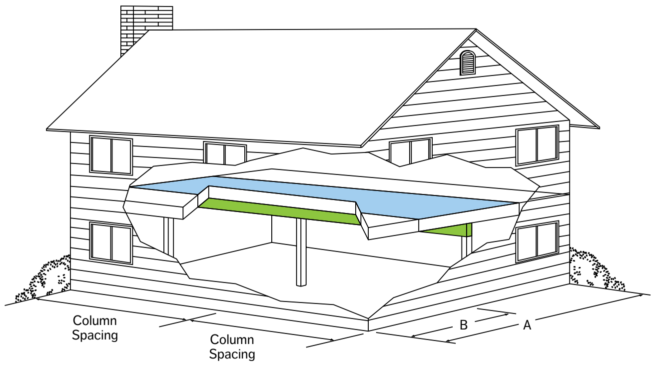
LVL QUICK REFERENCE TABLES

Floor Beams

Douglas-fir LVL and Southern Pine LVL

The tables below show the size of the beams needed to support various floor systems. The tables are valid for loads of one floor only, i.e., a second story floor or one story floor over a basement.

When floor joists span continuously from wall to wall (not cut at beam) these tables require that "B" be not less than 45%, or greater than 55% of "A".



FLOOR BEAM - 1.6E RIGIDLAM LVL (40 PSF LL + 10 PSF DL)

Width of Building "A" (ft.)	Beam Support Spacing (ft.)									
	11	12	13	14	15	16	17	18	19	20
24	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 14 3 - 14	2 - 16 3 - 14	2 - 16 * 3 - 14	2 - 18 * 3 - 16	2 - 18 * 3 - 16	2 - 20 * 3 - 18	2 - 20 * 3 - 18
28	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 14 3 - 14	2 - 16 * 3 - 14	2 - 16 * 3 - 14	2 - 18 * 3 - 16	2 - 18 * 3 - 16	2 - 20 * 3 - 18	- 3 - 18	- 3 - 20
32	2 - 14 3 - 11-7/8	2 - 14 * 3 - 11-7/8	2 - 16 * 3 - 14	2 - 16 * 3 - 14	2 - 18 * 3 - 16	2 - 18 * 3 - 16	- 3 - 18	- 3 - 18 *	- 3 - 18 *	- 3 - 20 *
36	2 - 14 * 3 - 11-7/8	2 - 16 * 3 - 14	2 - 16 * 3 - 14	2 - 18 * 3 - 14	- 3 - 16	- 3 - 16 *	- 3 - 18 *	- 3 - 18 *	- 3 - 20 *	- 3 - 20 *
40	2 - 16 * 3 - 11-7/8	2 - 16 * 3 - 14	2 - 18 * 3 - 14	- 3 - 16	- 3 - 16 *	- 3 - 18 *	- 3 - 18 *	- 3 - 20 *	- 3 - 20 *	- -
44	2 - 16 * 3 - 14	2 - 18 * 3 - 14	- 3 - 14 *	- 3 - 16 *	- 3 - 16 *	- 3 - 18 *	- 3 - 20 *	- 3 - 20 *	- -	- -

FLOOR BEAM - 2.1E RIGIDLAM LVL (40 PSF LL + 10 PSF DL)

Width of Building "A" (ft.)	Beam Support Spacing (ft.)									
	11	12	13	14	15	16	17	18	19	20
24	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 16 3 - 14	2 - 18 3 - 14	2 - 18 3 - 16	2 - 18 3 - 16
28	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 16 3 - 14	2 - 18 3 - 14	2 - 18 * 3 - 16	2 - 18 * 3 - 16	2 - 20 * 3 - 18
32	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 14 3 - 14	2 - 16 3 - 14	2 - 16 * 3 - 14	2 - 18 * 3 - 16	2 - 18 * 3 - 16	2 - 20 * 3 - 18	2 - 20 * 3 - 18
36	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 16 * 3 - 14	2 - 16 * 3 - 14	2 - 18 * 3 - 16	2 - 18 * 3 - 16	2 - 20 * 3 - 18	2 - 20 * 3 - 18	- 3 - 18
40	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 14 * 3 - 14	2 - 16 * 3 - 14	2 - 18 * 3 - 14	2 - 18 * 3 - 16	2 - 20 * 3 - 16	- 3 - 18	- 3 - 18 *	- 3 - 20 *
44	2 - 14 3 - 11-7/8	2 - 14 * 3 - 11-7/8	2 - 16 * 3 - 14	2 - 16 * 3 - 14	2 - 18 * 3 - 16	- 3 - 16	- 3 - 18 *	- 3 - 18 *	- 3 - 20 *	- 3 - 20 *

* see note 3

Notes:

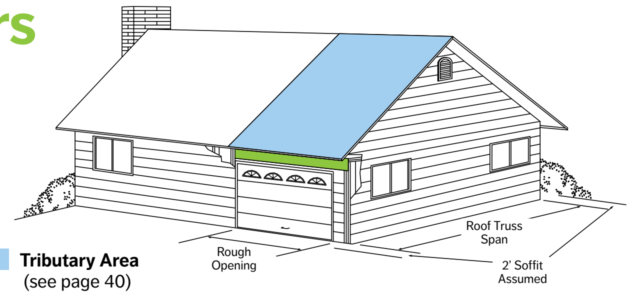
1. **Beam sizes are listed as the number of 1-3/4" wide plies by the LVL depth (e.g. 2 - 9-1/2" indicates two 1-3/4" plies by 9-1/2" deep).**
2. Beam sizes are based on continuous floor joist spans and simple or continuous beam spans. If the floor joists are not continuous, it is permissible to consider a Total Floor Joist Span "A" that is equal to 0.8 times the actual "A" dimension.
3. The minimum required end and intermediate bearing lengths (based on 575 PSI for 1.6E LVL and 750 PSI for 2.1E LVL) are 3" and 7-1/2" respectively unless the * symbol is shown. In that case, 4-1/2" and 10-1/2" end and intermediate bearing lengths are required.
4. All beams require support across their full width.
5. Beam sizes are based on residential floor loading of 40 PSF live load and 10 PSF dead load. The roof framing must be trusses supported at the exterior walls only.
6. Deflection is limited to L/360 at live load and L/240 at total load.
7. Allowable loads shown for multiple ply LVL members are also applicable to factory glued LVL beams with the same thickness as the combined multiple plies.
8. The beam sizes shown are based on the controlling size for RigidLam LVL produced from Douglas-fir or Southern Pine veneer and therefore can be used for either species. Quick Reference tables separated by species are available on the Roseburg website.

LVL QUICK REFERENCE TABLES

1-Story Garage Door Headers

Douglas-fir LVL and Southern Pine LVL

The tables indicate the appropriate size header for various roof truss spans with 2' soffit. If the soffit is greater than 2', additional engineering is necessary.



Tributary Area
(see page 40)

1 STORY – 1.6E RIGIDLAM® LVL

Roof Loading		Snow - 115% Load Duration								
		25 PSF LL + 20 PSF DL			30 PSF LL + 20 PSF DL			40 PSF LL + 20 PSF DL		
Rough Opening (ft.)		9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 14
	24	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16
	28	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 18 3 - 14	2 - 20 * 3 - 16
	32	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 18 3 - 14	2 - 20 3 - 16	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 16	2 - 22 * 3 - 18
	36	2 - 9-1/2 3 - 9-1/2	2 - 18 3 - 14	2 - 20 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 18 3 - 14	2 - 20 * 3 - 16	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 16	2 - 22 * 3 - 18

Roof Loading		Non-Snow - 125% Load Duration								
		20 PSF LL + 15 PSF DL			20 PSF LL + 20 PSF DL			20 PSF LL + 25 PSF DL		
Rough Opening (ft.)		9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
	24	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
	28	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 14	2 - 16 3 - 14
	32	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 14	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16
	36	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 14	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16

1 STORY – 2.1E RIGIDLAM® LVL

Roof Loading		Snow - 115% Load Duration								
		25 PSF LL + 20 PSF DL			30 PSF LL + 20 PSF DL			40 PSF LL + 20 PSF DL		
Rough Opening (ft.)		9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
	24	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 14 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
	28	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 14
	32	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16
	36	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 18 3 - 14	2 - 20 3 - 16

Roof Loading		Non-Snow - 125% Load Duration								
		20 PSF LL + 15 PSF DL			20 PSF LL + 20 PSF DL			20 PSF LL + 25 PSF DL		
Rough Opening (ft.)		9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8
	24	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 14 3 - 11-7/8
	28	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
	32	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
	36	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 14 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14

* see note 2

Notes:

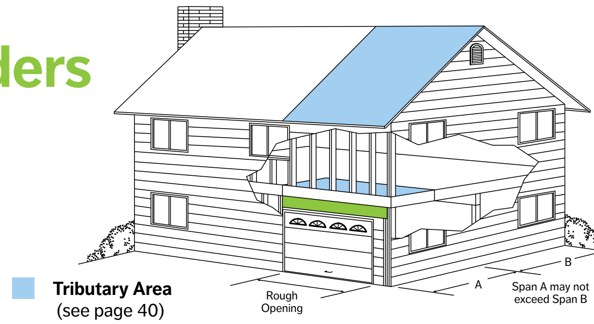
1. **Header sizes are listed as the number of 1-3/4" wide plies by the LVL depth (e.g. 2 - 9-1/2" indicates two 1-3/4" plies by 9-1/2" deep).**
2. The minimum required end bearing length (based on 575 PSI for 1.6E LVL and 750 PSI for 2.1E LVL) is 4-1/2" unless the * symbol is shown. In that case, 6" is required.
3. All headers require support across their full width. Use 2x4 cripples for two-ply headers and 2x6 cripples for three-ply headers.
4. The roof framing is assumed to be trusses supported by the exterior walls only.
5. Deflection is limited to L/240 at live load and L/180 at total load.
6. Allowable loads shown for multiple ply LVL members are also applicable to single billet LVL members with the same width as the combined multiple plies.
7. The header sizes shown are based on the controlling size for RigidLam LVL produced from Douglas-fir or Southern Pine veneer and therefore can be used for either species. Quick Reference tables separated by species are available on the Roseburg website.

LVL QUICK REFERENCE TABLES

2-Story Garage Door Headers

Douglas-fir LVL and Southern Pine LVL

The tables consider the combined loads from a wall, second story floor (1/4 of total floor joist span) and various roof truss spans with a 2' soffit. Intermediate floor beam assumed. If the soffit exceeds 2', additional engineering will be necessary.



2 STORY – 1.6E RIGIDLAM® LVL

Roof Loading		Snow - 115% Load Duration								
		25 PSF LL + 20 PSF DL			30 PSF LL + 20 PSF DL			40 PSF LL + 20 PSF DL		
Rough Opening (ft.)		9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 18 3 - 16	2 - 20 3 - 16	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 22 * 3 - 18
	24	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 16	2 - 22 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 16	2 - 22 * 3 - 18
	28	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 16	2 - 22 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 16	2 - 24 * 3 - 18	2 - 11-7/8 3 - 11-7/8	2 - 22 * 3 - 18	- 3 - 20
	32	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 18	- 3 - 20	2 - 11-7/8 3 - 11-7/8	2 - 22 * 3 - 18	- 3 - 20	2 - 14 3 - 11-7/8	- 3 - 18	- 3 - 22 *
	36	2 - 11-7/8 3 - 11-7/8	2 - 22 * 3 - 18	- 3 - 20 *	2 - 14 3 - 11-7/8	- 3 - 18	- 3 - 20 *	2 - 14 3 - 11-7/8	- 3 - 20 *	- 3 - 22 *

Roof Loading		Non-Snow - 125% Load Duration								
		20 PSF LL + 15 PSF DL			20 PSF LL + 20 PSF DL			20 PSF LL + 25 PSF DL		
Rough Opening (ft.)		9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 18 3 - 16	2 - 20 3 - 16
	24	2 - 9-1/2 3 - 9-1/2	2 - 18 3 - 16	2 - 20 3 - 16	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 * 3 - 18
	28	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 18 * 3 - 16	2 - 22 * 3 - 18
	32	2 - 11-7/8 3 - 9-1/2	2 - 18 * 3 - 16	2 - 20 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 16	2 - 22 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 18	- 3 - 20
	36	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 16	2 - 22 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 18	- 3 - 20	2 - 11-7/8 3 - 11-7/8	2 - 22 * 3 - 18	- 3 - 20 *

2 STORY – 2.1E RIGIDLAM® LVL

Roof Loading		Snow - 115% Load Duration								
		25 PSF LL + 20 PSF DL			30 PSF LL + 20 PSF DL			40 PSF LL + 20 PSF DL		
Rough Opening (ft.)		9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16
	24	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 3 - 18
	28	2 - 9-1/2 3 - 9-1/2	2 - 18 3 - 16	2 - 20 3 - 16	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 3 - 16	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 * 3 - 18
	32	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 16	2 - 22 * 3 - 18
	36	2 - 11-7/8 3 - 9-1/2	2 - 18 * 3 - 16	2 - 22 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 16	2 - 22 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 20 * 3 - 18	- 3 - 20

Roof Loading		Non-Snow - 125% Load Duration								
		20 PSF LL + 15 PSF DL			20 PSF LL + 20 PSF DL			20 PSF LL + 25 PSF DL		
Rough Opening (ft.)		9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"	9'-3"	16'-3"	18'-3"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16
	24	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16
	28	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 18 3 - 16	2 - 20 3 - 16
	32	2 - 9-1/2 3 - 9-1/2	2 - 18 3 - 14	2 - 20 3 - 16	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 * 3 - 18
	36	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 18 3 - 16	2 - 20 * 3 - 18	2 - 11-7/8 3 - 9-1/2	2 - 18 * 3 - 16	2 - 20 * 3 - 18

* see note 3

Notes:

1. **Header sizes are listed as the number of 1-3/4" wide plies by the LVL depth (e.g. 2 - 9-1/2" indicates two 1-3/4" plies by 9-1/2" deep).**
2. Header sizes are based on the assumption that the floor joists are supported in the middle of the building by a beam or wall.
3. The minimum required end bearing length (based on 575 PSI for 1.6E LVL and 750 PSI for 2.1E LVL) is 4-1/2" unless the * symbol is shown. In that case, 6" is required.
4. All headers require support across their full width. Use 2x4 cripples for two-ply headers and 2x6 cripples for three-ply headers.
5. Header sizes are based on residential floor loading of 40 PSF live load, 10 PSF dead load and 80 PLF wall dead load. The roof framing must be trusses supported by the exterior walls only.
6. Deflection is limited to L/360 at live load and L/240 at total load.
7. Allowable loads shown for multiple ply LVL members are also applicable to single billet LVL members with the same width as the combined multiple plies.
8. The header sizes shown are based on the controlling size for RigidLam LVL produced from Douglas-fir or Southern Pine veneer and therefore can be used for either species. Quick Reference tables separated by species are available on the Roseburg website.

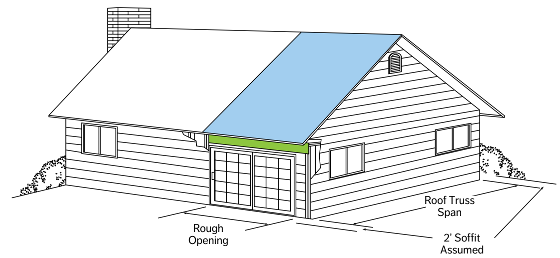
LVL QUICK REFERENCE TABLES

1-Story Window & Door Headers

Douglas-fir LVL and Southern Pine LVL

The tables indicate the appropriate size header for various roof truss spans with 2' soffit. If the soffit is greater than 2', additional engineering is necessary.

Tributary Area
(see page 40)



1 STORY – 1.6E RIGIDLAM® LVL

Roof Loading	Snow - 115% Load Duration									
	25 PSF LL + 20 PSF DL					40 PSF LL + 20 PSF DL				
Rough Opening (ft.)	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"
Roof Truss Span with 2' Soffit Assumed: 20	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14
24	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
28	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 14
32	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16
36	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16
Roof Loading	Non-Snow - 125% Load Duration									
	20 PSF LL + 15 PSF DL					20 PSF LL + 25 PSF DL				
Rough Opening (ft.)	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"
Roof Truss Span with 2' Soffit Assumed: 20	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8
24	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 14
28	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14
32	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
36	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14

1 STORY – 2.1E RIGIDLAM® LVL

Roof Loading	Snow - 115% Load Duration									
	25 PSF LL + 20 PSF DL					40 PSF LL + 20 PSF DL				
Rough Opening (ft.)	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"
Roof Truss Span with 2' Soffit Assumed: 20	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8
24	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 14
28	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14
32	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
36	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
Roof Loading	Non-Snow - 125% Load Duration									
	20 PSF LL + 15 PSF DL					20 PSF LL + 25 PSF DL				
Rough Opening (ft.)	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"
Roof Truss Span with 2' Soffit Assumed: 20	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8
24	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8
28	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8
32	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8
36	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14

* see note 2

Notes:

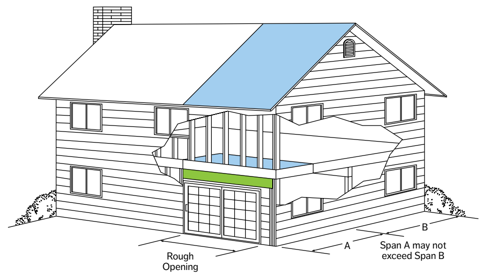
1. **Header sizes are listed as the number of 1-3/4" thick plies by the header depth (e.g. 2 - 9-1/2" indicates two 1-3/4" plies by 9-1/2" deep).**
2. The minimum required bearing length (based on 575 PSI for 1.6E LVL and 750 PSI for 2.1E LVL) is 4-1/2" unless the * symbol is shown. In that case, 6" is required.
3. All headers require support across their full width. Use 2x4 cripples for two ply headers and 2x6 cripples for three ply headers.
4. The roof framing is assumed to be trusses supported by the exterior walls only.
5. Deflection is limited to L/240 at live load and the lesser of L/180 or 5/16" at total load.
6. Allowable loads shown for multiple ply LVL members are also applicable to single billet LVL members with the same width as the combined multiple plies.
7. The header sizes shown are based on the controlling size for RigidLam LVL produced from Douglas-fir or Southern Pine veneer and therefore can be used for either species. Quick Reference tables separated by species are available on the Roseburg website.

2-Story Window & Door Headers

Douglas-fir LVL and Southern Pine LVL

The tables consider the combined loads from a wall, second story floor (1/4 of total floor joist span) and various roof truss spans with a 2' soffit. Intermediate floor beam assumed. If the soffit exceeds 2', additional engineering will be necessary.

Tributary Area
(see page 40)



2 STORY – 1.6E RIGIDLAM® LVL

Roof Loading		Snow - 115% Load Duration									
		25 PSF LL + 20 PSF DL					40 PSF LL + 20 PSF DL				
Rough Opening (ft.)		6'-0"	8'-0"	9'-0"	10'-0"	12'-0"	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16
	24	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 14	2 - 18 3 - 16
	28	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 20 3 - 16
	32	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 20 * 3 - 18
	36	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 20 3 - 18	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 16 * 3 - 14	2 - 22 * 3 - 18

Roof Loading		Non-Snow - 125% Load Duration									
		20 PSF LL + 15 PSF DL					20 PSF LL + 25 PSF DL				
Rough Opening (ft.)		6'-0"	8'-0"	9'-0"	10'-0"	12'-0"	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
	24	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16
	28	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16
	32	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 18 3 - 16
	36	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 14 3 - 14	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 20 3 - 18

2 STORY – 2.1E RIGIDLAM® LVL

Roof Loading		Snow - 115% Load Duration									
		25 PSF LL + 20 PSF DL					40 PSF LL + 20 PSF DL				
Rough Opening (ft.)		6'-0"	8'-0"	9'-0"	10'-0"	12'-0"	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14
	24	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
	28	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16
	32	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16
	36	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 20 3 - 16

Roof Loading		Non-Snow - 125% Load Duration									
		20 PSF LL + 15 PSF DL					20 PSF LL + 25 PSF DL				
Rough Opening (ft.)		6'-0"	8'-0"	9'-0"	10'-0"	12'-0"	6'-0"	8'-0"	9'-0"	10'-0"	12'-0"
Roof Truss Span with 2' Soffit Assumed	20	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14
	24	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14
	28	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14
	32	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 14
	36	2 - 9-1/2 3 - 9-1/2	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 14 3 - 11-7/8	2 - 16 3 - 14	2 - 9-1/2 3 - 9-1/2	2 - 11-7/8 3 - 9-1/2	2 - 11-7/8 3 - 11-7/8	2 - 14 3 - 11-7/8	2 - 18 3 - 16

* see note 3

Notes:

1. **Header sizes are listed as the number of 1-3/4" thick plies by the header depth (e.g. 2 - 9-1/2" indicates two 1-3/4" plies by 9-1/2" deep).**
2. Header sizes are based on the assumption that the floor joists are supported in the middle of the building by a beam or wall.
3. The minimum required end bearing length (based on 575 PSI for 1.6E LVL and 750 PSI for 2.1E LVL) is 4-1/2" unless the * symbol is shown. In that case, 6" is required.
4. All headers require support across their full width. Use 2x4 cripples for two-ply headers and 2x6 cripples for three-ply headers.
5. Header sizes are based on residential floor loading of 40 PSF live load, 10 PSF dead load and 80 PLF wall dead load. The roof framing must be trusses supported by the exterior walls only.
6. Deflection is limited to L/360 at live load and the lesser of L/240 or 5/16" at total load.
7. Allowable loads shown for multiple ply LVL members are also applicable to single billet LVL members with the same width as the combined multiple plies.
8. The header sizes shown are based on the controlling size for RigidLam LVL produced from Douglas-fir or Southern Pine veneer and therefore can be used for either species. Quick Reference tables separated by species are available on the Roseburg website.

RIGIDLAM® LVL

LVL ALLOWABLE UNIFORM LOAD (Pounds per Lineal Foot)

PLF Tables Douglas-fir LVL and Southern Pine LVL

1-PLY 1-3/4" 2.1E RIGIDLAM® LVL - FLOOR (PLF) 100% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
6	LL	166	321	693										
	TL	247	478	776	1,046	1,082	1,348	1,449	1,826					
	BRG	1.5 / 3	1.5 / 3	1.8 / 4.5	2.4 / 6	2.5 / 6.2	3.1 / 7.7	3.3 / 8.3	4.2 / 10.5					
8	LL	72	140	310	614	660								
	TL	106	208	462	735	759	931	996	1,229					
	BRG	1.5 / 3	1.5 / 3	1.5 / 3.5	2.3 / 5.6	2.3 / 5.8	2.9 / 7.1	3.1 / 7.6	3.8 / 9.4					
10	LL	37	73	164	329	355	569	660						
	TL	54	107	242	489	527	711	758	925					
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2 / 5.1	2.7 / 6.8	2.9 / 7.3	3.5 / 8.9					
12	LL		43	96	195	211	342	398	629					
	TL		61	141	288	312	507	585	741					
	BRG		1.5 / 3	1.5 / 3	1.5 / 3.4	1.5 / 3.6	2.3 / 5.9	2.7 / 6.8	3.4 / 8.5					
14	LL			61	125	135	220	257	410					
	TL			88	183	198	325	380	577					
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.4	2.1 / 5.1	3.1 / 7.8					
16	LL			41	85	92	150	175	281					
	TL			58	122	132	219	257	414					
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.6 / 4	2.6 / 6.4					
18	LL				60	65	106	124	201					
	TL				85	92	154	181	294					
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2	2.1 / 5.2					
20	LL				44	47	78	92	148					
	TL				61	66	111	131	215					
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2					
22	LL					36	59	69	112					
	TL					49	83	98	161					
	BRG						1.5 / 3	1.5 / 3	1.5 / 3.5					
24	LL						46	54	87					
	TL						63	74	123					
	BRG						1.5 / 3	1.5 / 3	1.5 / 3					
26	LL							42	69					
	TL							57	96					
	BRG							1.5 / 3	1.5 / 3					
28	LL								55					
	TL								76					
	BRG								1.5 / 3					
30	LL								45					
	TL								60					
	BRG								1.5 / 3					

NOT APPLICABLE

2-PLY 1-3/4" 2.1E RIGIDLAM® LVL - FLOOR (PLF) 100% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
6	LL	333	641	1,385										
	TL	495	957	1,552	2,092	2,163	2,695	2,899	3,653	4,464	5,395	6,476	7,744	9,256
	BRG	1.5 / 3	1.5 / 3	1.8 / 4.5	2.4 / 6	2.5 / 6.2	3.1 / 7.7	3.3 / 8.3	4.2 / 10.5	5.1 / 12.8	6.2 / 15.5	7.4 / 18.6	8.9 / 22.2	10.6 / 26.5
8	LL	144	281	621	1,228	1,321								
	TL	211	415	924	1,471	1,518	1,862	1,992	2,457	2,936	3,462	4,040	4,679	5,389
	BRG	1.5 / 3	1.5 / 3	1.5 / 3.5	2.3 / 5.6	2.3 / 5.8	2.9 / 7.1	3.1 / 7.6	3.8 / 9.4	4.5 / 11.2	5.3 / 13.3	6.2 / 15.5	7.2 / 17.9	8.2 / 20.6
10	LL	74	146	327	658	710	1,138	1,321						
	TL	107	214	484	978	1,055	1,421	1,515	1,849	2,186	2,546	2,932	3,348	3,797
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2 / 5.1	2.7 / 6.8	2.9 / 7.3	3.5 / 8.9	4.2 / 10.5	4.9 / 12.2	5.6 / 14.1	6.4 / 16.1	7.3 / 18.2
12	LL	43	85	193	391	422	684	796	1,258					
	TL	61	123	282	577	623	1,014	1,171	1,481	1,739	2,012	2,300	2,605	2,928
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.5 / 3.6	2.3 / 5.9	2.7 / 6.8	3.4 / 8.5	44,661	4.6 / 11.6	5.3 / 13.3	44,727	6.7 / 16.9
14	LL		54	123	250	270	441	514	820	1,189	1,639			
	TL		76	176	366	396	649	759	1,155	1,443	1,662	1,890	2,130	2,381
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.4	2.1 / 5.1	3.1 / 7.8	3.9 / 9.7	4.5 / 11.2	5.1 / 12.7	5.7 / 14.3	6.4 / 16
16	LL		36	83	169	183	300	350	562	820	1,138	1,519		
	TL		49	117	245	265	438	513	829	1,122	1,389	1,604	1,800	2,006
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.6 / 4	2.6 / 6.4	3.5 / 8.7	4.3 / 10.7	4.9 / 12.4	5.6 / 13.9	6.2 / 15.5
18	LL			58	120	130	213	249	401	588	820	1,100	1,429	
	TL			80	170	185	308	361	587	865	1,093	1,323	1,558	1,731
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2	2.1 / 5.2	3 / 7.6	3.8 / 9.5	4.6 / 11.5	5.4 / 13.6	44,727
20	LL			43	88	95	156	183	296	435	609	820	1,070	1,359
	TL			57	122	133	223	262	429	636	882	1,068	1,270	1,487
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2	2.5 / 6.2	3.4 / 8.6	4.1 / 10.4	4.9 / 12.3	5.8 / 14.4
22	LL				66	72	118	138	224	330	464	627	820	1,045
	TL				90	98	166	195	322	479	677	879	1,045	1,224
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.1 / 5.2	2.9 / 7.3	3.8 / 9.4	4.5 / 11.2	5.2 / 13.1
24	LL				51	55	91	107	174	257	361	489	641	820
	TL				67	73	125	149	246	369	523	713	875	1,025
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.4	2.5 / 6.2	3.4 / 8.4	4.1 / 10.3	4.8 / 12
26	LL				40	44	72	85	137	203	286	389	511	654
	TL				51	56	97	115	192	289	411	562	742	870
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.1 / 5.3	2.9 / 7.2	3.8 / 9.5	4.4 / 11.1
28	LL						58	68	110	164	231	314	413	530
	TL						75	90	151	229	328	450	597	747
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.3	1.8 / 4.6	2.5 / 6.3	3.3 / 8.3	4.1 / 10.3
30	LL						47	55	90	134	189	257	338	435
	TL						59	71	121	184	265	365	485	628
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.2 / 5.5	2.9 / 7.3	3.7 / 9.3

- The PLF load values in this table are based on the LVL member having lateral bracing at 24" O.C. or less along its entire length.
- 1-3/4" LVL members 16" and deeper and 1-1/2" LVL members 14" and deeper, must be a minimum of two plies unless designed by a design professional. Except for ledgers.
- Allowable PLF loads for single or multiple ply 1-1/2" wide LVL members can be obtained by multiplying the table values by 0.85. (Required bearing lengths are the same)
- This table may be used for either simple or multiple spans.
- Span is centerline of bearing to centerline of bearing.
- Loads shown can be applied to the beam in addition to its own weight.
- See pages 41 and 42 for details on attaching multiple ply members.
- Allowable loads shown for multiple ply LVL members are also applicable to factory single billet members with the same width as the combined multiple plies.
- The values shown are based on the lower allowable uniform load for RigidLam LVL produced from Douglas-fir or Southern Pine veneer and therefore can be used for either species. PLF tables separated by species are available on the Roseburg website.

Key to Table:
LL = Maximum live load – limits deflection to L/360
TL = Maximum total load – limits deflections to L/240
BRG = Required end/interior bearing length (inches), based on bearing stress of 750 PSI.

PLF Tables Douglas-fir LVL and Southern Pine LVL

3-PLY 1-3/4" 2.1E RIGIDLAM® LVL - FLOOR (PLF) 100% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
10	LL	112	219	491	987	1,065	1,707	1,981						
	TL	161	321	726	1,467	1,582	2,132	2,273	2,774	3,279	3,819	4,398	5,022	5,695
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2 / 5.1	2.7 / 6.8	2.9 / 7.3	3.5 / 8.9	4.2 / 10.5	4.9 / 12.2	5.6 / 14.1	6.4 / 16.1	7.3 / 18.2
12	LL	65	128	289	586	633	1,025	1,194	1,887					
	TL	91	184	422	865	935	1,521	1,756	2,222	2,609	3,017	3,449	3,907	4,392
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.5 / 3.6	2.3 / 5.9	2.7 / 6.8	3.4 / 8.5	44,661	4.6 / 11.6	5.3 / 13.3	44,727	6.7 / 16.9
14	LL	41	81	184	375	405	661	771	1,230	1,783	2,459			
	TL	55	113	265	549	594	974	1,139	1,732	2,165	2,492	2,835	3,195	3,572
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.4	2.1 / 5.1	3.1 / 7.8	3.9 / 9.7	4.5 / 11.2	5.1 / 12.7	5.7 / 14.3	6.4 / 16
16	LL		55	124	254	275	449	526	843	1,230	1,707	2,279		
	TL		73	175	367	397	657	770	1,243	1,683	2,083	2,405	2,701	3,008
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.6 / 4	2.6 / 6.4	3.5 / 8.7	4.3 / 10.7	4.9 / 12.4	5.6 / 13.9	6.2 / 15.5
18	LL		38	87	180	194	319	373	602	882	1,230	1,650	2,144	
	TL		49	120	255	277	461	542	881	1,298	1,640	1,985	2,338	2,597
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2	2.1 / 5.2	3 / 7.6	3.8 / 9.5	4.6 / 11.5	5.4 / 13.6	44,727
20	LL			64	132	142	234	275	444	652	913	1,230	1,605	2,039
	TL			85	183	199	334	394	644	954	1,323	1,602	1,905	2,230
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2	2.5 / 6.2	3.4 / 8.6	4.1 / 10.4	4.9 / 12.3	5.8 / 14.4
22	LL			48	99	107	177	208	336	496	696	940	1,230	1,568
	TL			61	135	147	248	293	483	719	1,016	1,319	1,568	1,837
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.1 / 5.2	2.9 / 7.3	3.8 / 9.4	4.5 / 11.2	5.2 / 13.1
24	LL				77	83	137	161	261	385	542	733	962	1,230
	TL				101	110	188	223	370	553	785	1,069	1,312	1,537
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.4	2.5 / 6.2	3.4 / 8.4	4.1 / 10.3	4.8 / 12
26	LL				60	65	108	127	206	305	430	583	766	981
	TL				77	84	145	172	288	433	617	844	1,113	1,305
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.1 / 5.3	2.9 / 7.2	3.8 / 9.5	4.4 / 11.1
28	LL				49	53	87	102	166	245	346	470	619	795
	TL				59	64	113	135	227	344	492	675	895	1,120
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.3	1.8 / 4.6	2.5 / 6.3	3.3 / 8.3	4.1 / 10.3
30	LL					43	71	83	135	200	283	385	508	652
	TL					50	89	106	181	276	397	547	728	942
	BRG					1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.2 / 5.5	2.9 / 7.3	3.7 / 9.3
32	LL						58	69	112	166	234	319	421	542
	TL						70	85	146	224	324	448	598	776
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	1.9 / 4.9	2.6 / 6.4	3.3 / 8.3
34	LL						49	57	93	139	196	267	353	455
	TL						56	68	119	183	267	370	496	645
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2	1.7 / 4.3	2.3 / 5.7	2.9 / 7.4
36	LL							48	79	117	166	226	299	385
	TL							54	97	151	221	308	414	541
	BRG							1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.9	2 / 5.1	2.6 / 6.6

4-PLY 1-3/4" 2.1E RIGIDLAM® LVL - FLOOR (PLF) 100% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
10	LL	149	293	655	1,316	1,419	2,277	2,642						
	TL	214	428	968	1,955	2,110	2,843	3,031	3,699	4,371	5,092	5,865	6,696	7,593
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2 / 5.1	2.7 / 6.8	2.9 / 7.3	3.5 / 8.9	4.2 / 10.5	4.9 / 12.2	5.6 / 14.1	6.4 / 16.1	7.3 / 18.2
12	LL	87	171	385	782	844	1,367	1,592	2,517					
	TL	121	245	563	1,154	1,247	2,028	2,342	2,963	3,479	4,023	4,599	5,209	5,856
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.5 / 3.6	2.3 / 5.9	2.7 / 6.8	3.4 / 8.5	44,661	4.6 / 11.6	5.3 / 13.3	44,727	6.7 / 16.9
14	LL	55	108	245	500	540	881	1,029	1,640	2,378	3,279			
	TL	73	151	353	731	791	1,299	1,519	2,309	2,887	3,323	3,780	4,260	4,763
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.4	2.1 / 5.1	3.1 / 7.8	3.9 / 9.7	4.5 / 11.2	5.1 / 12.7	5.7 / 14.3	6.4 / 16
16	LL		73	165	339	366	599	701	1,124	1,640	2,277	3,038		
	TL		98	233	489	530	876	1,027	1,657	2,244	2,777	3,207	3,601	4,011
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.6 / 4	2.6 / 6.4	3.5 / 8.7	4.3 / 10.7	4.9 / 12.4	5.6 / 13.9	6.2 / 15.5
18	LL		51	117	240	259	425	498	802	1,176	1,640	2,200	2,858	
	TL		66	160	340	369	615	723	1,175	1,731	2,187	2,647	3,117	3,462
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2	2.1 / 5.2	3 / 7.6	3.8 / 9.5	4.6 / 11.5	5.4 / 13.6	44,727
20	LL			85	176	190	312	366	592	870	1,218	1,640	2,139	2,718
	TL			113	244	265	446	525	859	1,272	1,764	2,136	2,539	2,974
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2	2.5 / 6.2	3.4 / 8.6	4.1 / 10.4	4.9 / 12.3	5.8 / 14.4
22	LL			64	132	143	236	277	448	661	928	1,253	1,640	2,091
	TL			82	180	196	331	391	644	959	1,355	1,758	2,091	2,449
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.1 / 5.2	2.9 / 7.3	3.8 / 9.4	4.5 / 11.2	5.2 / 13.1
24	LL			50	102	111	183	214	348	513	722	978	1,283	1,640
	TL			60	135	147	251	297	493	737	1,047	1,426	1,750	2,050
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.4	2.5 / 6.2	3.4 / 8.4	4.1 / 10.3	4.8 / 12
26	LL				81	87	144	169	275	407	573	777	1,021	1,308
	TL				102	112	193	229	384	577	823	1,125	1,484	1,739
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.1 / 5.3	2.9 / 7.2	3.8 / 9.5	4.4 / 11.1
28	LL				65	70	116	136	221	327	462	627	826	1,060
	TL				78	86	151	180	303	458	656	900	1,194	1,493
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.3	1.8 / 4.6	2.5 / 6.3	3.3 / 8.3	4.1 / 10.3
30	LL				53	57	94	111	180	267	378	513	677	870
	TL				60	66	118	142	242	368	530	729	970	1,256
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.2 / 5.5	2.9 / 7.3	3.7 / 9.3
32	LL					47	78	91	149	221	312	425	561	722
	TL					51	94	113	195	299	432	597	797	1,034
	BRG					1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	1.9 / 4.9	2.6 / 6.4	3.3 / 8.3
34	LL						65	76	124	185	261	356	471	606
	TL						75	90	158	244	355	494	661	860
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.2	1.7 / 4.3	2.3 / 5.7	2.9 / 7.4
36	LL						55	64	105	156	221	301	398	513
	TL						59	72	129	201	295	411	553	721
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.9	2 / 5.1	2.6 / 6.6

Refer to notes on previous page.

LVL ALLOWABLE UNIFORM LOAD (Pounds per Lineal Foot)

PLF Tables Douglas-fir LVL and Southern Pine LVL

1-PLY 1-3/4" 2.1E RIGIDLAM® LVL - ROOF SNOW (PLF) 115% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
6	LL	250	481											
	TL	331	639	893	1,203	1,245	1,551	1,668	2,101					
	BRG	1.5 / 3	1.5 / 3.7	2 / 5.1	2.8 / 6.9	2.9 / 7.1	3.6 / 8.9	3.8 / 9.6	4.8 / 12					
8	LL	108	211	466										
	TL	142	278	603	846	873	1,072	1,146	1,414					
	BRG	1.5 / 3	1.5 / 3	1.9 / 4.7	2.6 / 6.5	2.7 / 6.7	3.3 / 8.2	3.5 / 8.8	4.3 / 10.8					
10	LL	56	110	246	494	532								
	TL	72	143	324	609	640	818	872	1,064					
	BRG	1.5 / 3	1.5 / 3	1.5 / 3.1	2.4 / 6	2.5 / 6.2	3.1 / 7.8	3.3 / 8.4	4.1 / 10.2					
12	LL		64	144	293	317	513	597						
	TL		83	189	386	417	609	674	853					
	BRG		1.5 / 3	1.5 / 3	1.8 / 4.5	1.9 / 4.8	2.8 / 7.1	3.1 / 7.8	3.9 / 9.8					
14	LL		41	92	188	203	330	386	615					
	TL		51	119	245	265	435	494	665					
	BRG		1.5 / 3	1.5 / 3	1.5 / 3.3	1.5 / 3.6	2.3 / 5.9	2.7 / 6.7	3.6 / 9					
16	LL			62	127	137	225	263	421					
	TL			79	165	178	294	344	507					
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.6	2.1 / 5.3	3.1 / 7.8					
18	LL			44	90	97	160	187	301					
	TL			55	115	125	207	243	394					
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	1.7 / 4.3	2.8 / 6.9					
20	LL				66	71	117	137	222					
	TL				83	90	150	177	289					
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.3 / 5.6					
22	LL				50	54	89	104	168					
	TL				61	67	112	132	217					
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7					
24	LL					42	68	80	130					
	TL					51	86	101	167					
	BRG					1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4					
26	LL						54	63	103					
	TL						66	79	130					
	BRG						1.5 / 3	1.5 / 3	1.5 / 3.4					
28	LL						43	51	83					
	TL						52	62	103					
	BRG						1.5 / 3	1.5 / 3	1.5 / 3					
30	LL								68					
	TL								83					
	BRG								1.5 / 3					

NOT APPLICABLE

2-PLY 1-3/4" 2.1E RIGIDLAM® LVL - ROOF SNOW (PLF) 115% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
6	LL	499	962											
	TL	661	1,277	1,786	2,407	2,489	3,101	3,335	4,203	5,136	6,207	7,450	8,910	10,648
	BRG	1.5 / 3	1.5 / 3.7	2 / 5.1	2.8 / 6.9	2.9 / 7.1	3.6 / 8.9	3.8 / 9.6	4.8 / 12	5.9 / 14.7	7.1 / 17.8	8.5 / 21.3	10.2 / 25.5	12.2 / 30.5
8	LL	216	421	931										
	TL	283	556	1,206	1,693	1,747	2,143	2,292	2,828	3,379	3,984	4,649	5,384	6,201
	BRG	1.5 / 3	1.5 / 3	1.9 / 4.7	2.6 / 6.5	2.7 / 6.7	3.3 / 8.2	3.5 / 8.8	4.3 / 10.8	5.2 / 12.9	6.1 / 15.2	7.1 / 17.8	8.2 / 20.6	9.5 / 23.7
10	LL	112	219	491	987	1,065								
	TL	144	287	647	1,217	1,280	1,636	1,745	2,129	2,516	2,930	3,375	3,854	4,370
	BRG	1.5 / 3	1.5 / 3	1.5 / 3.1	2.4 / 6	2.5 / 6.2	3.1 / 7.8	3.3 / 8.4	4.1 / 10.2	4.8 / 12.1	5.6 / 14	6.5 / 16.2	7.4 / 18.5	8.4 / 20.9
12	LL	65	128	289	586	633	1,025	1,194						
	TL	82	165	378	772	834	1,219	1,348	1,706	2,003	2,316	2,648	2,999	3,371
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.5	1.9 / 4.8	2.8 / 7.1	3.1 / 7.8	3.9 / 9.8	4.6 / 11.5	5.3 / 13.3	6.1 / 15.2	6.9 / 17.3	7.8 / 19.4
14	LL	41	81	184	375	405	661	771	1,230					
	TL	50	103	238	491	531	870	987	1,330	1,662	1,914	2,177	2,453	2,742
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.3	1.5 / 3.6	2.3 / 5.9	2.7 / 6.7	3.6 / 9	4.5 / 11.2	5.2 / 12.9	5.9 / 14.6	6.6 / 16.5	7.4 / 18.4
16	LL		55	124	254	275	449	526	843	1,230				
	TL		67	158	329	356	588	689	1,015	1,293	1,600	1,847	2,074	2,310
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.6	2.1 / 5.3	3.1 / 7.8	44,661	4.9 / 12.3	5.7 / 14.2	6.4 / 16	7.1 / 17.8
18	LL			87	180	194	319	373	602	882	1,230			
	TL			109	230	249	414	486	788	1,018	1,260	1,525	1,796	1,995
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	1.7 / 4.3	2.8 / 6.9	3.5 / 8.9	4.4 / 11	5.3 / 13.2	6.2 / 15.6	6.9 / 17.3
20	LL			64	132	142	234	275	444	652	913	1,230		
	TL			78	166	180	301	354	577	821	1,017	1,231	1,464	1,713
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.3 / 5.6	3.2 / 8	3.9 / 9.9	4.8 / 11.9	5.7 / 14.2	6.6 / 16.6
22	LL			48	99	107	177	208	336	496	696	940		
	TL			57	123	134	225	265	434	644	837	1,014	1,206	1,412
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2.8 / 6.9	3.6 / 9	4.3 / 10.8	5.1 / 12.9	44,727
24	LL				77	83	137	161	261	385	542	733	962	
	TL				93	101	171	202	333	497	701	849	1,009	1,182
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.3 / 5.9	3.3 / 8.2	4 / 9.9	4.7 / 11.8	5.5 / 13.8
26	LL				60	65	108	127	206	305	430	583	766	981
	TL				71	78	133	157	261	390	555	720	857	1,004
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	44,597	2.8 / 7.1	3.7 / 9.2	4.4 / 10.9	5.1 / 12.7
28	LL				49	53	87	102	166	245	346	470	619	795
	TL				55	60	104	124	207	311	443	607	736	862
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.4	2.5 / 6.2	3.3 / 8.4	4 / 10.1	4.7 / 11.8
30	LL						71	83	135	200	283	385	508	652
	TL						83	99	166	251	359	493	638	748
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.2 / 5.4	2.9 / 7.3	3.8 / 9.4	4.4 / 11

- The PLF load values in this table are based on the LVL member having lateral bracing at 24" O.C. or less along its entire length.
- 1-3/4" LVL members 16" and deeper and 1-1/2" LVL members 14" and deeper, must be a minimum of two plies unless designed by a design professional. Except for ledgers.
- Allowable PLF loads for single or multiple ply 1-1/2" wide LVL members can be obtained by multiplying the table values by 0.85. (Required bearing lengths are the same)
- This table may be used for either simple or multiple spans.
- Span is centerline of bearing to centerline of bearing.
- Loads shown can be applied to the beam in addition to its own weight.
- See pages 41 and 42 for details on attaching multiple ply members.
- Allowable loads shown for multiple ply LVL members are also applicable to single billet LVL members with the same width as the combined multiple plies.
- The values shown are based on the lower allowable uniform load for RigidLam LVL produced from Douglas-fir or Southern Pine veneer and therefore can be used for either species. PLF tables separated by species are available on the Roseburg website.

Key to Table:
LL = Maximum live load – limits deflection to L/240
TL = Maximum total load – limits deflections to L/180
BRG = Required end/interior bearing length (inches), based on bearing stress of 750 PSI.

LVL ALLOWABLE UNIFORM LOAD (Pounds per Lineal Foot)

PLF Tables Douglas-fir LVL and Southern Pine LVL

3-PLY 1-3/4" 2.1E RIGIDLAM® LVL - ROOF SNOW (PLF) 115% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
10	LL	168	329	737	1,481	1,597								
	TL	217	430	971	1,826	1,920	2,455	2,617	3,193	3,774	4,396	5,063	5,781	6,555
	BRG	1.5 / 3	1.5 / 3	1.5 / 3.1	2.4 / 6	2.5 / 6.2	3.1 / 7.8	3.3 / 8.4	4.1 / 10.2	4.8 / 12.1	5.6 / 14	6.5 / 16.2	7.4 / 18.5	8.4 / 20.9
12	LL	98	192	433	879	950	1,538	1,791						
	TL	123	248	567	1,158	1,251	1,828	2,023	2,559	3,004	3,474	3,971	4,498	5,057
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.5	1.9 / 4.8	2.8 / 7.1	3.1 / 7.8	3.9 / 9.8	4.6 / 11.5	5.3 / 13.3	6.1 / 15.2	6.9 / 17.3	7.8 / 19.4
14	LL	62	122	276	563	608	991	1,157	1,845					
	TL	76	154	356	736	796	1,304	1,481	1,995	2,494	2,870	3,265	3,679	4,113
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.3	1.5 / 3.6	2.3 / 5.9	2.7 / 6.7	3.6 / 9	4.5 / 11.2	5.2 / 12.9	5.9 / 14.6	6.6 / 16.5	7.4 / 18.4
16	LL		82	186	381	412	674	788	1,264	1,845				
	TL		101	237	494	535	882	1,033	1,522	1,939	2,399	2,771	3,111	3,465
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.6	2.1 / 5.3	3.1 / 7.8	44,661	4.9 / 12.3	5.7 / 14.2	6.4 / 16	7.1 / 17.8
18	LL		58	131	269	291	479	560	902	1,322	1,845			
	TL		68	164	345	374	621	729	1,182	1,527	1,890	2,287	2,693	2,992
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	1.7 / 4.3	2.8 / 6.9	3.5 / 8.9	4.4 / 11	5.3 / 13.2	6.2 / 15.6	6.9 / 17.3
20	LL			96	197	214	352	412	666	979	1,370	1,845		
	TL			117	249	270	451	531	866	1,232	1,526	1,847	2,195	2,570
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.3 / 5.6	3.2 / 8	3.9 / 9.9	4.8 / 11.9	5.7 / 14.2	6.6 / 16.6
22	LL			72	149	161	266	311	504	743	1,044	1,410		
	TL			85	184	200	337	397	651	967	1,256	1,521	1,808	2,118
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2.8 / 6.9	3.6 / 9	4.3 / 10.8	5.1 / 12.9	44,727
24	LL			56	115	125	205	241	391	578	813	1,100	1,443	
	TL			63	139	152	257	303	500	746	1,051	1,273	1,514	1,774
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.3 / 5.9	3.3 / 8.2	4 / 9.9	4.7 / 11.8	5.5 / 13.8
26	LL				91	98	162	190	309	457	645	874	1,149	1,472
	TL				107	116	199	236	391	585	832	1,080	1,285	1,506
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	44,597	2.8 / 7.1	3.7 / 9.2	4.4 / 10.9	5.1 / 12.7
28	LL				73	79	130	153	249	368	520	706	929	1,192
	TL				83	90	156	186	310	466	665	910	1,104	1,293
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.4	2.5 / 6.2	3.3 / 8.4	4 / 10.1	4.7 / 11.8
30	LL				59	64	106	125	203	301	425	578	761	979
	TL				65	71	124	148	249	376	539	739	957	1,122
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.2 / 5.4	2.9 / 7.3	3.8 / 9.4	4.4 / 11
32	LL				49	53	88	103	168	249	352	479	632	813
	TL				51	56	100	119	202	307	441	607	808	982
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.9 / 4.8	2.6 / 6.5	3.4 / 8.6	4.1 / 10.3
34	LL						73	86	140	208	294	401	529	682
	TL						80	96	165	253	365	504	672	865
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2	2.3 / 5.8	3 / 7.6	3.9 / 9.7
36	LL						62	72	118	176	249	339	448	578
	TL						65	78	136	210	304	421	564	733
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.1 / 5.2	2.7 / 6.8	3.5 / 8.8

4-PLY 1-3/4" 2.1E RIGIDLAM® LVL - ROOF SNOW (PLF) 115% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
10	LL	223	439	982	1,974	2,129								
	TL	289	574	1,295	2,435	2,560	3,273	3,489	4,258	5,032	5,861	6,750	7,707	8,740
	BRG	1.5 / 3	1.5 / 3	1.5 / 3.1	2.4 / 6	2.5 / 6.2	3.1 / 7.8	3.3 / 8.4	4.1 / 10.2	4.8 / 12.1	5.6 / 14	6.5 / 16.2	7.4 / 18.5	8.4 / 20.9
12	LL	130	256	578	1,173	1,266	2,051	2,389						
	TL	165	331	756	1,544	1,669	2,437	2,697	3,412	4,005	4,632	5,295	5,997	6,742
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.5	1.9 / 4.8	2.8 / 7.1	3.1 / 7.8	3.9 / 9.8	4.6 / 11.5	5.3 / 13.3	6.1 / 15.2	6.9 / 17.3	7.8 / 19.4
14	LL	82	162	368	750	811	1,322	1,543	2,460					
	TL	101	205	475	981	1,062	1,739	1,975	2,660	3,325	3,827	4,354	4,905	5,485
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.3	1.5 / 3.6	2.3 / 5.9	2.7 / 6.7	3.6 / 9	4.5 / 11.2	5.2 / 12.9	5.9 / 14.6	6.6 / 16.5	7.4 / 18.4
16	LL	55	109	248	508	549	899	1,051	1,686	2,460				
	TL	65	134	316	658	713	1,176	1,377	2,030	2,585	3,199	3,694	4,148	4,620
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.6	2.1 / 5.3	3.1 / 7.8	44,661	4.9 / 12.3	5.7 / 14.2	6.4 / 16	7.1 / 17.8
18	LL		77	175	359	389	638	747	1,203	1,763	2,460			
	TL		91	218	460	499	828	972	1,576	2,036	2,520	3,050	3,591	3,989
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	1.7 / 4.3	2.8 / 6.9	3.5 / 8.9	4.4 / 11	5.3 / 13.2	6.2 / 15.6	6.9 / 17.3
20	LL		56	128	263	285	469	549	887	1,305	1,827	2,460		
	TL		64	156	332	360	602	708	1,155	1,643	2,034	2,463	2,927	3,427
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.3 / 5.6	3.2 / 8	3.9 / 9.9	4.8 / 11.9	5.7 / 14.2	6.6 / 16.6
22	LL			96	199	215	354	415	672	991	1,392	1,880		
	TL			114	246	267	449	529	868	1,289	1,675	2,028	2,411	2,824
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2.8 / 6.9	3.6 / 9	4.3 / 10.8	5.1 / 12.9	44,727
24	LL			74	153	166	274	321	521	770	1,083	1,467	1,924	
	TL			84	186	202	342	404	667	994	1,401	1,698	2,019	2,365
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.3 / 5.9	3.3 / 8.2	4 / 9.9	4.7 / 11.8	5.5 / 13.8
26	LL			59	121	131	216	254	412	610	859	1,166	1,532	1,963
	TL			63	142	155	265	314	521	780	1,109	1,441	1,714	2,008
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	44,597	2.8 / 7.1	3.7 / 9.2	4.4 / 10.9	5.1 / 12.7
28	LL				97	105	174	204	331	491	693	941	1,239	1,590
	TL				110	121	208	247	413	622	887	1,214	1,471	1,724
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.4	2.5 / 6.2	3.3 / 8.4	4 / 10.1	4.7 / 11.8
30	LL				79	86	141	166	270	401	566	770	1,015	1,305
	TL				86	95	166	197	332	502	718	986	1,276	1,496
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.2 / 5.4	2.9 / 7.3	3.8 / 9.4	4.4 / 11
32	LL				65	71	117	137	223	331	469	638	842	1,083
	TL				68	75	133	159	269	409	588	810	1,078	1,309
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.9 / 4.8	2.6 / 6.5	3.4 / 8.6	4.1 / 10.3
34	LL				54	59	97	114	187	277	392	534	706	909
	TL				54	59	107	128	220	337	486	672	896	1,154
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2	2.3 / 5.8	3 / 7.6	3.9 / 9.7
36	LL						82	97	158	234	331	452	597	770
	TL						87	105	181	279	405	562	752	978
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.1 / 5.2	2.7 / 6.8	3.5 / 8.8

Refer to notes on previous page.

LVL ALLOWABLE UNIFORM LOAD (Pounds per Lineal Foot)

PLF Tables Douglas-fir LVL and Southern Pine LVL

1-PLY 1-3/4" 2.1E RIGIDLAM® LVL - ROOF NON-SNOW (PLF) 125% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
6	LL	250	481											
	TL	331	639	971	1,308	1,353	1,686	1,813	2,285					
	BRG	1.5 / 3	1.5 / 3.7	2.2 / 5.6	3 / 7.5	3.1 / 7.8	3.9 / 9.7	4.2 / 10.4	5.2 / 13.1					
8	LL	108	211	466										
	TL	142	278	617	920	950	1,165	1,246	1,537					
	BRG	1.5 / 3	1.5 / 3	1.9 / 4.7	2.8 / 7	2.9 / 7.3	3.6 / 8.9	3.8 / 9.5	4.7 / 11.8					
10	LL	56	110	246	494	532	854							
	TL	72	143	324	653	696	890	949	1,158					
	BRG	1.5 / 3	1.5 / 3	1.5 / 3.1	2.5 / 6.3	2.7 / 6.8	3.4 / 8.5	3.6 / 9.1	4.4 / 11.1					
12	LL		64	144	293	317	513	597						
	TL		83	189	386	417	663	733	928					
	BRG		1.5 / 3	1.5 / 3	1.8 / 4.5	1.9 / 4.8	3.1 / 7.7	3.4 / 8.5	4.3 / 10.7					
14	LL		41	92	188	203	330	386	615					
	TL		51	119	245	265	435	508	723					
	BRG		1.5 / 3	1.5 / 3	1.5 / 3.3	1.5 / 3.6	2.3 / 5.9	2.7 / 6.9	3.9 / 9.7					
16	LL			62	127	137	225	263	421					
	TL			79	165	178	294	344	552					
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.6	2.1 / 5.3	3.4 / 8.5					
18	LL			44	90	97	160	187	301					
	TL			55	115	125	207	243	394					
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	1.7 / 4.3	2.8 / 6.9					
20	LL				66	71	117	137	222					
	TL				83	90	150	177	289					
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.3 / 5.6					
22	LL				50	54	89	104	168					
	TL				61	67	112	132	217					
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7					
24	LL					42	68	80	130					
	TL					51	86	101	167					
	BRG					1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4					
26	LL						54	63	103					
	TL						66	79	130					
	BRG						1.5 / 3	1.5 / 3	1.5 / 3.4					
28	LL						43	51	83					
	TL						52	62	103					
	BRG						1.5 / 3	1.5 / 3	1.5 / 3					
30	LL								68					
	TL								83					
	BRG								1.5 / 3					

NOT APPLICABLE

2-PLY 1-3/4" 2.1E RIGIDLAM® LVL - ROOF NON-SNOW (PLF) 125% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
6	LL	499	962											
	TL	661	1,277	1,942	2,617	2,706	3,372	3,627	4,570	5,584	6,748	8,100	9,686	11,576
	BRG	1.5 / 3	1.5 / 3.7	2.2 / 5.6	3 / 7.5	3.1 / 7.8	3.9 / 9.7	4.2 / 10.4	5.2 / 13.1	6.4 / 16	7.7 / 19.3	9.3 / 23.2	11.1 / 27.7	13.3 / 33.1
8	LL	216	421	931										
	TL	283	556	1,235	1,841	1,900	2,331	2,492	3,075	3,675	4,332	5,055	5,854	6,742
	BRG	1.5 / 3	1.5 / 3	1.9 / 4.7	2.8 / 7	2.9 / 7.3	3.6 / 8.9	3.8 / 9.5	4.7 / 11.8	5.6 / 14.1	6.6 / 16.6	7.7 / 19.3	9 / 22.4	10.3 / 25.8
10	LL	112	219	491	987	1,065	1,707							
	TL	144	287	647	1,307	1,392	1,780	1,897	2,315	2,736	3,187	3,670	4,191	4,752
	BRG	1.5 / 3	1.5 / 3	1.5 / 3.1	2.5 / 6.3	2.7 / 6.8	3.4 / 8.5	3.6 / 9.1	4.4 / 11.1	5.2 / 13.1	6.1 / 15.3	7 / 17.6	8 / 20.1	9.1 / 22.7
12	LL	65	128	289	586	633	1,025	1,194						
	TL	82	165	378	772	834	1,325	1,467	1,855	2,178	2,519	2,880	3,261	3,666
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.5	1.9 / 4.8	3.1 / 7.7	3.4 / 8.5	4.3 / 10.7	5 / 12.5	5.8 / 14.5	6.6 / 16.6	7.5 / 18.8	8.4 / 21.1
14	LL	41	81	184	375	405	661	771	1,230	1,783				
	TL	50	103	238	491	531	870	1,016	1,447	1,808	2,082	2,368	2,668	2,983
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.3	1.5 / 3.6	2.3 / 5.9	2.7 / 6.9	3.9 / 9.7	4.9 / 12.2	5.6 / 14	6.4 / 15.9	7.2 / 17.9	44,793
16	LL		55	124	254	275	449	526	843	1,230	1,707			
	TL		67	158	329	356	588	689	1,104	1,406	1,740	2,010	2,256	2,513
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.6	2.1 / 5.3	3.4 / 8.5	4.3 / 10.8	5.4 / 13.4	6.2 / 15.5	6.9 / 17.4	7.7 / 19.3
18	LL			87	180	194	319	373	602	882	1,230	1,650		
	TL			109	230	249	414	486	788	1,108	1,371	1,659	1,954	2,170
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	1.7 / 4.3	2.8 / 6.9	3.9 / 9.6	4.8 / 11.9	5.8 / 14.4	6.8 / 16.9	7.5 / 18.8
20	LL			64	132	142	234	275	444	652	913	1,230		
	TL			78	166	180	301	354	577	853	1,107	1,340	1,593	1,865
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.3 / 5.6	3.3 / 8.3	4.3 / 10.7	5.2 / 13	6.2 / 15.4	7.2 / 18
22	LL			48	99	107	177	208	336	496	696	940	1,230	
	TL			57	123	134	225	265	434	644	909	1,104	1,312	1,537
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2.8 / 6.9	3.9 / 9.7	4.7 / 11.8	5.6 / 14	6.5 / 16.4
24	LL				77	83	137	161	261	385	542	733	962	1,230
	TL				93	101	171	202	333	497	704	924	1,099	1,287
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.3 / 5.9	3.3 / 8.3	4.3 / 10.8	5.1 / 12.8	44,727
26	LL				60	65	108	127	206	305	430	583	766	981
	TL				71	78	133	157	261	390	555	757	933	1,093
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	44,597	2.8 / 7.1	3.8 / 9.6	4.7 / 11.8	5.5 / 13.8
28	LL				49	53	87	102	166	245	346	470	619	795
	TL				55	60	104	124	207	311	443	607	802	939
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.4	2.5 / 6.2	3.3 / 8.4	4.4 / 11	5.1 / 12.9
30	LL						71	83	135	200	283	385	508	652
	TL						83	99	166	251	359	493	654	815
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.2 / 5.4	2.9 / 7.3	3.9 / 9.7	4.8 / 12

- The PLF load values in this table are based on the LVL member having lateral bracing at 24" O.C. or less along its entire length.
- 1-3/4" LVL members 16" and deeper and 1-1/2" LVL members 14" and deeper, must be a minimum of two plies unless designed by a design professional. Except for ledgers.
- Allowable PLF loads for single or multiple ply 1-1/2" wide LVL members can be obtained by multiplying the table values by 0.85. (Required bearing lengths are the same)
- This table may be used for either simple or multiple spans.
- Span is centerline of bearing to centerline of bearing.
- Loads shown can be applied to the beam in addition to its own weight.
- See pages 41 and 42 for details on attaching multiple ply members.
- Allowable loads shown for multiple ply LVL members are also applicable to single billet LVL members with the same width as the combined multiple plies.
- The values shown are based on the lower allowable uniform load for RigidLam LVL produced from Douglas-fir or Southern Pine veneer and therefore can be used for either species. PLF tables separated by species are available on the Roseburg website.

Key to Table:
LL = Maximum live load – limits deflection to L/240
TL = Maximum total load – limits deflections to L/180
BRG = Required end/interior bearing length (inches), based on bearing stress of 750 PSI.

PLF Tables Douglas-fir LVL and Southern Pine LVL

3-PLY 1-3/4" 2.1E RIGIDLAM® LVL - ROOF NON-SNOW (PLF) 125% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
10	LL	168	329	737	1,481	1,597	2,561							
	TL	217	430	971	1,960	2,088	2,670	2,846	3,473	4,104	4,780	5,506	6,286	7,128
	BRG	1.5 / 3	1.5 / 3	1.5 / 3.1	2.5 / 6.3	2.7 / 6.8	3.4 / 8.5	3.6 / 9.1	4.4 / 11.1	5.2 / 13.1	6.1 / 15.3	7 / 17.6	8 / 20.1	9.1 / 22.7
12	LL	98	192	433	879	950	1,538	1,791						
	TL	123	248	567	1,158	1,251	1,988	2,200	2,783	3,267	3,779	4,319	4,892	5,500
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.5	1.9 / 4.8	3.1 / 7.7	3.4 / 8.5	4.3 / 10.7	5 / 12.5	5.8 / 14.5	6.6 / 16.6	7.5 / 18.8	8.4 / 21.1
14	LL	62	122	276	563	608	991	1,157	1,845	2,675				
	TL	76	154	356	736	796	1,304	1,525	2,170	2,713	3,122	3,552	4,002	4,474
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.3	1.5 / 3.6	2.3 / 5.9	2.7 / 6.9	3.9 / 9.7	4.9 / 12.2	5.6 / 14	6.4 / 15.9	7.2 / 17.9	44,793
16	LL		82	186	381	412	674	788	1,264	1,845	2,561			
	TL		101	237	494	535	882	1,033	1,657	2,110	2,610	3,014	3,384	3,770
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.6	2.1 / 5.3	3.4 / 8.5	4.3 / 10.8	5.4 / 13.4	6.2 / 15.5	6.9 / 17.4	7.7 / 19.3
18	LL		58	131	269	291	479	560	902	1,322	1,845	2,475		
	TL		68	164	345	374	621	729	1,182	1,662	2,057	2,489	2,930	3,255
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	1.7 / 4.3	2.8 / 6.9	3.9 / 9.6	4.8 / 11.9	5.8 / 14.4	6.8 / 16.9	7.5 / 18.8
20	LL			96	197	214	352	412	666	979	1,370	1,845		
	TL			117	249	270	451	531	866	1,280	1,661	2,010	2,389	2,797
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.3 / 5.6	3.3 / 8.3	4.3 / 10.7	5.2 / 13	6.2 / 15.4	7.2 / 18
22	LL			72	149	161	266	311	504	743	1,044	1,410	1,845	
	TL			85	184	200	337	397	651	967	1,364	1,656	1,969	2,305
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2.8 / 6.9	3.9 / 9.7	4.7 / 11.8	5.6 / 14	6.5 / 16.4
24	LL			56	115	125	205	241	391	578	813	1,100	1,443	1,845
	TL			63	139	152	257	303	500	746	1,056	1,387	1,649	1,931
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.3 / 5.9	3.3 / 8.3	4.3 / 10.8	5.1 / 12.8	44,727
26	LL				91	98	162	190	309	457	645	874	1,149	1,472
	TL				107	116	199	236	391	585	832	1,135	1,400	1,640
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	44,597	2.8 / 7.1	3.8 / 9.6	4.7 / 11.8	5.5 / 13.8
28	LL				73	79	130	153	249	368	520	706	929	1,192
	TL				83	90	156	186	310	466	665	910	1,202	1,409
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.4	2.5 / 6.2	3.3 / 8.4	4.4 / 11	5.1 / 12.9
30	LL				59	64	106	125	203	301	425	578	761	979
	TL				65	71	124	148	249	376	539	739	982	1,223
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.2 / 5.4	2.9 / 7.3	3.9 / 9.7	4.8 / 12
32	LL				49	53	88	103	168	249	352	479	632	813
	TL				51	56	100	119	202	307	441	607	808	1,047
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.9 / 4.8	2.6 / 6.5	3.4 / 8.6	4.4 / 11
34	LL						73	86	140	208	294	401	529	682
	TL						80	96	165	253	365	504	672	872
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2	2.3 / 5.8	3 / 7.6	3.9 / 9.8
36	LL						62	72	118	176	249	339	448	578
	TL						65	78	136	210	304	421	564	733
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.1 / 5.2	2.7 / 6.8	3.5 / 8.8

4-PLY 1-3/4" 2.1E RIGIDLAM® LVL - ROOF NON-SNOW (PLF) 125% LOAD DURATION

Span (ft.)	Depth	4-3/8"	5-1/2"	7-1/4"	9-1/4"	9-1/2"	11-1/4"	11-7/8"	14"	16"	18"	20"	22"	24"
10	LL	223	439	982	1,974	2,129	3,415							
	TL	289	574	1,295	2,614	2,784	3,559	3,795	4,630	5,472	6,374	7,341	8,381	9,504
	BRG	1.5 / 3	1.5 / 3	1.5 / 3.1	2.5 / 6.3	2.7 / 6.8	3.4 / 8.5	3.6 / 9.1	4.4 / 11.1	5.2 / 13.1	6.1 / 15.3	7 / 17.6	8 / 20.1	9.1 / 22.7
12	LL	130	256	578	1,173	1,266	2,051	2,389						
	TL	165	331	756	1,544	1,669	2,651	2,933	3,711	4,357	5,038	5,759	6,523	7,333
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.5	1.9 / 4.8	3.1 / 7.7	3.4 / 8.5	4.3 / 10.7	5 / 12.5	5.8 / 14.5	6.6 / 16.6	7.5 / 18.8	8.4 / 21.1
14	LL	82	162	368	750	811	1,322	1,543	2,460	3,567				
	TL	101	205	475	981	1,062	1,739	2,033	2,894	3,617	4,163	4,736	5,336	5,966
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.3	1.5 / 3.6	2.3 / 5.9	2.7 / 6.9	3.9 / 9.7	4.9 / 12.2	5.6 / 14	6.4 / 15.9	7.2 / 17.9	44,793
16	LL	55	109	248	508	549	899	1,051	1,686	2,460	3,415			
	TL	65	134	316	658	713	1,176	1,377	2,209	2,813	3,481	4,019	4,512	5,026
	BRG	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.8 / 4.6	2.1 / 5.3	3.4 / 8.5	4.3 / 10.8	5.4 / 13.4	6.2 / 15.5	6.9 / 17.4	7.7 / 19.3
18	LL		77	175	359	389	638	747	1,203	1,763	2,460	3,300		
	TL		91	218	460	499	828	972	1,576	2,216	2,742	3,319	3,907	4,340
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.6	1.7 / 4.3	2.8 / 6.9	3.9 / 9.6	4.8 / 11.9	5.8 / 14.4	6.8 / 16.9	7.5 / 18.8
20	LL		56	128	263	285	469	549	887	1,305	1,827	2,460		
	TL		64	156	332	360	602	708	1,155	1,707	2,214	2,680	3,186	3,729
	BRG		1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.5	2.3 / 5.6	3.3 / 8.3	4.3 / 10.7	5.2 / 13	6.2 / 15.4	7.2 / 18
22	LL			96	199	215	354	415	672	991	1,392	1,880	2,460	
	TL			114	246	267	449	529	868	1,289	1,819	2,208	2,625	3,073
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.9 / 4.7	2.8 / 6.9	3.9 / 9.7	4.7 / 11.8	5.6 / 14	6.5 / 16.4
24	LL			74	153	166	274	321	521	770	1,083	1,467	1,924	2,460
	TL			84	186	202	342	404	667	994	1,408	1,849	2,198	2,575
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.6 / 4	2.3 / 5.9	3.3 / 8.3	4.3 / 10.8	5.1 / 12.8	44,727
26	LL			59	121	131	216	254	412	610	859	1,166	1,532	1,963
	TL			63	142	155	265	314	521	780	1,109	1,513	1,867	2,187
	BRG			1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	44,597	2.8 / 7.1	3.8 / 9.6	4.7 / 11.8	5.5 / 13.8
28	LL				97	105	174	204	331	491	693	941	1,239	1,590
	TL				110	121	208	247	413	622	887	1,214	1,603	1,879
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.4	2.5 / 6.2	3.3 / 8.4	4.4 / 11	5.1 / 12.9
30	LL				79	86	141	166	270	401	566	770	1,015	1,305
	TL				86	95	166	197	332	502	718	986	1,309	1,630
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.2 / 5.4	2.9 / 7.3	3.9 / 9.7	4.8 / 12
32	LL				65	71	117	137	223	331	469	638	842	1,083
	TL				68	75	133	159	269	409	588	810	1,078	1,396
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.4	1.9 / 4.8	2.6 / 6.5	3.4 / 8.6	4.4 / 11
34	LL				54	59	97	114	187	277	392	534	706	909
	TL				54	59	107	128	220	337	486	672	896	1,163
	BRG				1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.7 / 4.2	2.3 / 5.8	3 / 7.6	3.9 / 9.8
36	LL						82	97	158	234	331	452	597	770
	TL						87	105	181	279	405	562	752	978
	BRG						1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3	1.5 / 3.8	2.1 / 5.2	2.7 / 6.8	3.5 / 8.8

Refer to notes on previous page.

RigidLam® LVL Studs*

*Currently, only Douglas-fir (Mill #1055) RigidLam LVL, grades 1.6E through 2.1E, have been qualified for use in conventional or engineered stud wall construction.

Although conventional construction methods have allowed builders to meet the needs of homeowners, they are constantly being challenged with the need for straighter, stronger and taller wall framing components. Roseburg Forest Products RigidLam® LVL studs are an answer to the needs of both homeowners and builders. RigidLam studs are manufactured to the industry's highest standards and unlike solid-sawn lumber, RigidLam studs are straight, strong, and stiff, resulting in a faster installation time, fewer callbacks, and straight walls that give homeowners peace of mind.

FIRE RATED STUD WALL APPLICATIONS

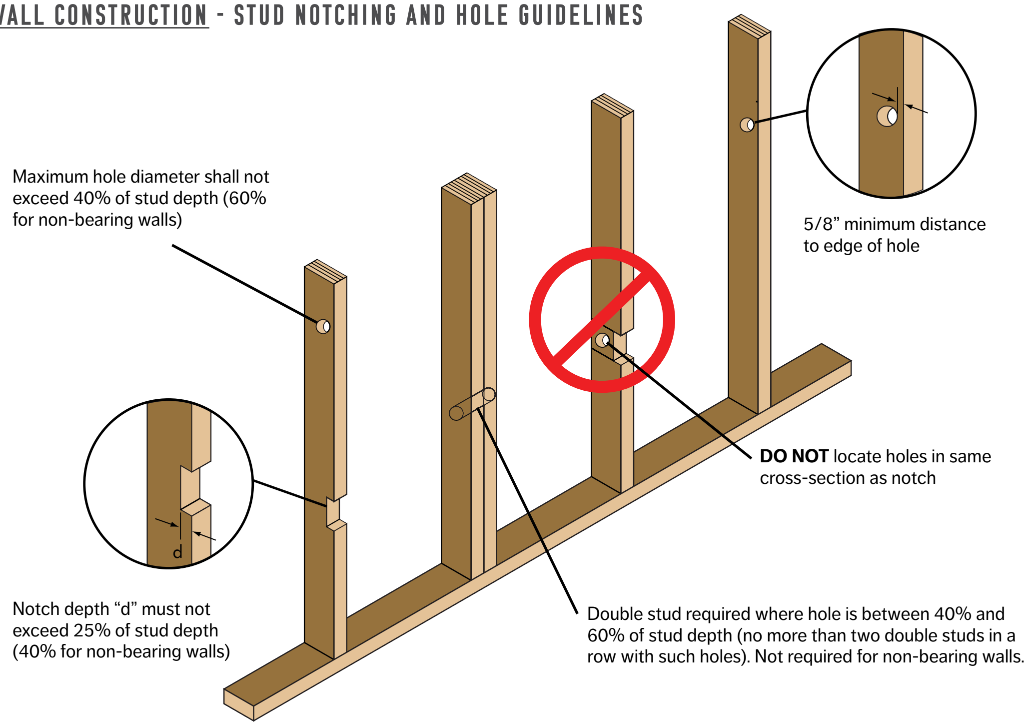
Conventional Stud Wall Construction: RigidLam studs are permitted to be used in fire-resistance-rated conventional wall construction and are considered to be a direct replacement for solid-sawn lumber, having the same dimensions, in any fire-resistance-rated wall assembly listed in Table 721.1(2) of the IBC. A minimum of 2.5 pcf of mineral wool insulation must be placed in the stud cavity.

Engineered Stud Wall Construction: See APA Product Report PR-L289 for additional limitations and design value adjustments when using RigidLam studs in fire-resistance-rated engineered wall construction. PR-L289 can be found on the Roseburg website (www.roseburg.com) in the Engineered Wood Products section or on the APA website (www.apawood.org).

CONVENTIONAL CONSTRUCTION

Based on testing conducted in accordance with ICC Evaluation Service Acceptance Criteria for Wood-Based Studs, AC202, RigidLam LVL studs are considered to be alternatives to sawn lumber studs complying with Section 2308.5 of the IBC, and Section R602 of the IRC.

CONVENTIONAL WALL CONSTRUCTION - STUD NOTCHING AND HOLE GUIDELINES



ENGINEERED CONSTRUCTION

For building applications that fall outside the scope of conventional construction, RigidLam LVL studs may be used provided they are designed in accordance with accepted engineering practice. RigidLam LVL studs are available in 1.6E and 2.1E grades in widths of 1-1/2" and 1-3/4".

RIGIDLAM® LVL STUD ALLOWABLE DESIGN STRESSES VS. SOLID-SAWN LUMBER[1][a]

2x4		Joist (edgewise)			Plank (flatwise)			Axial		MOE
		F_b	F_v	$Fc_{\perp}$[2]	F_b	F_v	$Fc_{\perp}$[2]	F_c	F_t	
Species	Grade	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)
RigidLam LVL Stud	**1.6E**	**2,730[4]**	**220**	**575**	**2,250**	**130**	**650**	**1,950**	**1,500[3]**	**1,600,000**
RigidLam LVL Stud	**2.1E**	**3,761[4]**	**290**	**750**	**3,100**	**130**	**650**	**3,000**	**2,100[3]**	**2,100,000**
Douglas-fir[b]	No. 2	1,553[c]	180	625	1,485[d]	180	625	1,553[e]	863[e]	1,600,000
Spruce-Pine-Fir[b]	No. 2	1,509[c]	135	425	1,444[d]	135	425	1,323[e]	675[e]	1,400,000

2x6		Joist (edgewise)			Plank (flatwise)			Axial		MOE
		F_b	F_v	$Fc_{\perp}$[2]	F_b	F_v	$Fc_{\perp}$[2]	F_c	F_t	
Species	Grade	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)	(psi)
RigidLam LVL Stud	**1.6E**	**2,580[4]**	**220**	**575**	**2,250**	**130**	**650**	**1,950**	**1,500[3]**	**1,600,000**
RigidLam LVL Stud	**2.1E**	**3,554[4]**	**290**	**750**	**3,100**	**130**	**650**	**3,000**	**2,100[3]**	**2,100,000**
Douglas-fir[b]	No. 2	1,346[c]	180	625	1,346[d]	180	625	1,485[e]	748[e]	1,600,000
Spruce-Pine-Fir[b]	No. 2	1,308[c]	135	425	1,308[d]	135	425	1,265[e]	585[e]	1,400,000

RigidLam LVL Notes
1. These allowable design stresses apply to dry service conditions
2. Duration of Load increases not allowed
3. Tabulated values are based on a 4 ft length. For lengths greater than 4 ft, multiply by $(4/\text{Length})^{1/9}$. For lengths less than 4 ft, use the table values.
4. Bending values have been multiplied by $(12/d)^{1/8}$ and a repetitive member factor of 1.04

Solid-Sawn Notes
a. These allowable design stresses apply to dry service conditions
b. Solid-sawn design values taken from 2018 National Design Specification
c. F_b has been adjusted for repetitive member use and size factor increases
d. F_b has been adjusted for size factor increases and flat-use increases
e. F_c and F_t have been adjusted for size factor increases

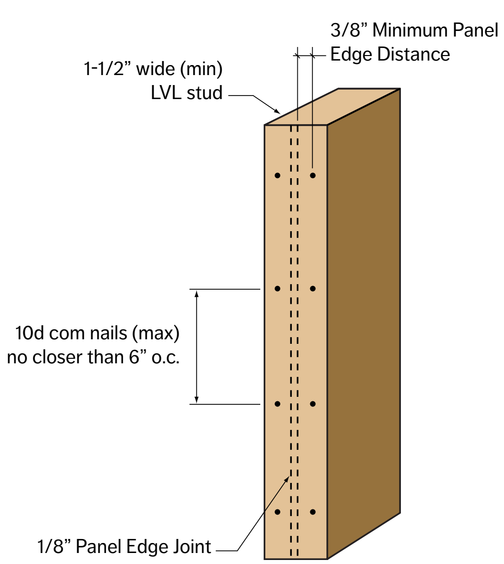
ENGINEERED WALL CONSTRUCTION - RIGIDLAM STUD HOLE AND NOTCHING GUIDELINES

Notches: A notch up to 40% of the depth of the stud may be placed anywhere along the stud provided the reduced section is accounted for using standard engineering analysis and the allowable bending and/or tension stress is reduced by 30% to account for the stress concentrations that occur at the corners of the notch.

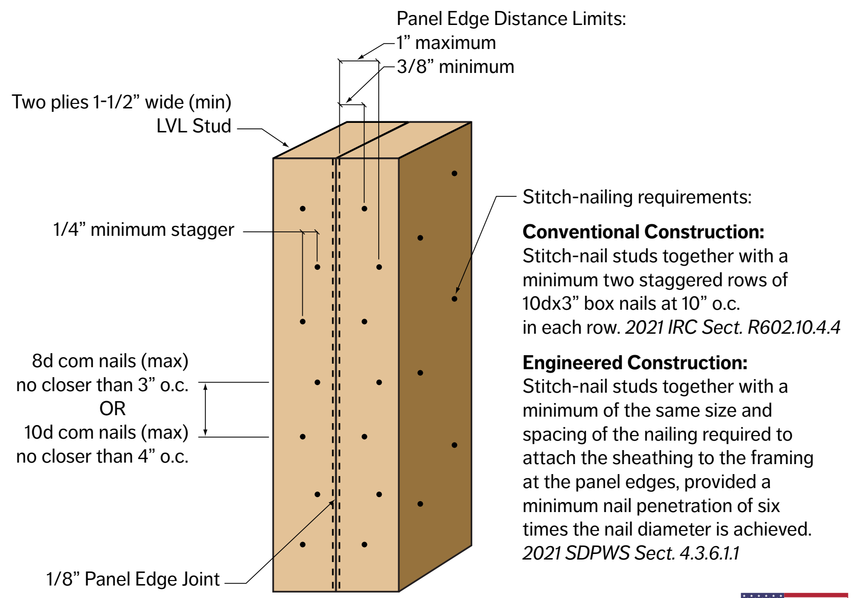
Holes: A hole with a maximum diameter of 30% of the depth of the stud may be placed anywhere along the stud **at the centerline of the stud depth** without further engineering analysis for lateral bending considerations. For other conditions, holes may be placed anywhere along the stud provided the reduced section is accounted for using standard engineering analysis.

CONVENTIONAL AND ENGINEERED WALL CONSTRUCTION - RIGIDLAM LVL NAILING RESTRICTIONS

Nailing Restrictions for Single Stud at Adjoining Panel Edges



Nailing Restrictions for Double Studs at Adjoining Panel Edges



RigidLam® LVL Stair Stringers

Maximum Horizontal Stair Stringer Run for Both Douglas-fir and Southern Pine LVL

1.4E RigidLam LVL – 1-1/2” Wide

Gross Stringer Depth	Tread Width 36” 2 Stringers	36” 3 Stringers	42” 3 Stringers	44” 3 Stringers	48” 3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2”	4’-10”	5’-5”	5’-2”	5’-1”	5’-0”
11-7/8”	8’-8”	9’-10”	9’-4”	9’-3”	9’-0”
14”	12’-2”	13’-9”	13’-1”	12’-11”	12’-7”
16”	15’-5”	17’-5”	16’-7”	16’-5”	15’-11”
100 psf Live Load and 12 psf Dead Load					
9-1/2”	4’-3”	4’-9”	4’-7”	4’-6”	4’-5”
11-7/8”	7’-3”	8’-2”	7’-9”	7’-8”	7’-6”
14”	9’-11”	11’-2”	10’-8”	10’-6”	10’-3”
16”	12’-5”	14’-0”	13’-5”	13’-3”	12’-11”

1.4E RigidLam LVL – 1-3/4” Wide

Gross Stringer Depth	Tread Width 36” 2 Stringers	36” 3 Stringers	42” 3 Stringers	44” 3 Stringers	48” 3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2”	5’-0”	5’-8”	5’-5”	5’-4”	5’-3”
11-7/8”	9’-1”	10’-3”	9’-10”	9’-8”	9’-5”
14”	12’-9”	14’-4”	13’-9”	13’-6”	13’-2”
16”	16’-2”	18’-2”	17’-5”	17’-2”	16’-9”
100 psf Live Load and 12 psf Dead Load					
9-1/2”	4’-5”	5’-0”	4’-9”	4’-9”	4’-7”
11-7/8”	7’-7”	8’-6”	8’-2”	8’-1”	7’-10”
14”	10’-5”	11’-8”	11’-2”	11’-0”	10’-9”
16”	13’-0”	14’-8”	14’-0”	13’-10”	13’-6”

1.6E RigidLam LVL – 1-1/2” Wide

Gross Stringer Depth	Tread Width 36” 2 Stringers	36” 3 Stringers	42” 3 Stringers	44” 3 Stringers	48” 3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2”	5’-0”	5’-8”	5’-5”	5’-4”	5’-2”
11-7/8”	9’-1”	10’-3”	9’-9”	9’-8”	9’-5”
14”	12’-8”	14’-4”	13’-8”	13’-6”	13’-2”
16”	16’-1”	18’-2”	17’-4”	17’-1”	16’-8”
100 psf Live Load and 12 psf Dead Load					
9-1/2”	4’-5”	5’-0”	4’-9”	4’-8”	4’-7”
11-7/8”	7’-7”	8’-6”	8’-2”	8’-0”	7’-10”
14”	10’-4”	11’-8”	11’-2”	11’-0”	10’-8”
16”	13’-0”	14’-8”	14’-0”	13’-9”	13’-5”

1.6E RigidLam LVL – 1-3/4” Wide

Gross Stringer Depth	Tread Width 36” 2 Stringers	36” 3 Stringers	42” 3 Stringers	44” 3 Stringers	48” 3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2”	5’-3”	5’-11”	5’-8”	5’-7”	5’-5”
11-7/8”	9’-6”	10’-9”	10’-3”	10’-1”	9’-10”
14”	13’-3”	15’-0”	14’-4”	14’-2”	13’-9”
16”	16’-10”	18’-11”	18’-2”	17’-11”	17’-6”
100 psf Live Load and 12 psf Dead Load					
9½”	4’-8”	5’-3”	5’-0”	4’-11”	4’-10”
11-7/8”	7’-11”	8’-11”	8’-6”	8’-5”	8’-2”
14”	10’-10”	12’-3”	11’-8”	11’-6”	11’-3”
16”	13’-7”	15’-4”	14’-8”	14’-5”	14’-1”

2.1E RigidLam LVL – 1-1/2” Wide

Gross Stringer Depth	Tread Width 36” 2 Stringers	36” 3 Stringers	42” 3 Stringers	44” 3 Stringers	48” 3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2”	5’-6”	6’-2”	5’-11”	5’-10”	5’-8”
11-7/8”	9’-11”	11’-3”	10’-8”	10’-6”	10’-3”
14”	13’-10”	15’-8”	15’-0”	14’-9”	14’-4”
16”	17’-7”	19’-10”	19’-0”	18’-9”	18’-3”
100 psf Live Load and 12 psf Dead Load					
9-1/2”	4’-10”	5’-5”	5’-2”	5’-1”	5’-0”
11-7/8”	8’-3”	9’-3”	8’-10”	8’-9”	8’-6”
14”	11’-3”	12’-9”	12’-2”	12’-0”	11’-8”
16”	14’-2”	15’-11”	15’-3”	15’-0”	14’-8”

2.1E RigidLam LVL – 1-3/4” Wide

Gross Stringer Depth	Tread Width 36” 2 Stringers	36” 3 Stringers	42” 3 Stringers	44” 3 Stringers	48” 3 Stringers
40 psf Live Load and 12 psf Dead Load					
9-1/2”	5’-9”	6’-6”	6’-2”	6’-1”	5’-11”
11-7/8”	10’-4”	11’-9”	11’-3”	11’-1”	10’-9”
14”	14’-6”	16’-5”	15’-8”	15’-6”	15’-1”
16”	18’-5”	20’-9”	19’-10”	19’-7”	19’-1”
100 psf Live Load and 12 psf Dead Load					
9-1/2”	5’-1”	5’-8”	5’-5”	5’-4”	5’-3”
11-7/8”	8’-7”	9’-9”	9’-3”	9’-2”	8’-11”
14”	11’-10”	13’-4”	12’-9”	12’-7”	12’-3”
16”	14’-10”	16’-9”	15’-11”	15’-9”	15’-4”

How To Use Tables

1. Determine grade and width of Roseburg RigidLam LVL
2. Locate appropriate table
3. Locate appropriate load (40 or 100 psf live load)
4. Locate appropriate gross depth of LVL (9-1/2”, 11-7/8”, 14” or 16”)
5. Determine maximum allowable horizontal stringer run based on tread width and number of stringers

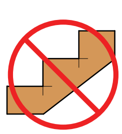
General Notes

- For 40/12 loading (residential), stringer runs are based on a rise of 7-3/4” (maximum per 2021 IRC) and a run of 11” (1” longer than minimum run of 10” per 2021 IRC).
- For 100/12 loading (commercial), stringer runs are based on a rise of 7” (maximum per 2021 IBC) and a run of 11” (minimum per 2021 IBC).
- Consult a design professional for allowable stringer run if above rise and/or run values are exceeded.
- Stringer runs are based on deflection criteria of L/360 Live Load and L/240 Total Load.
- All stringer runs are based on a 100% duration of load.
- Stringer runs account for self-weight of member.
- Stringers are unstable until connections at low and high ends are completed and treads are attached.
- Use subfloor adhesive to minimize squeaks and improve stair performance.
- When stringer is in direct contact with concrete, use moisture barrier.
- Refer to appropriate building code for story height restrictions.
- For loading and/or framing conditions outside the scope of this document, consult a design professional.
- Refer to pages 7 and 36 for RigidLam LVL storage and handling information.
- RigidLam LVL Stair Stringers shall not be used for exterior conditions exposed to elements.

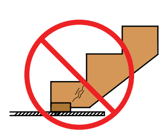
RigidLam LVL Code Evaluation ICC ESR-1210

INSTALLATION GUIDELINES

DO NOT notch or drill holes in stringer



DO NOT overcut stringer. Use hand saw to finish cut



DO NOT support stringer on nailer only

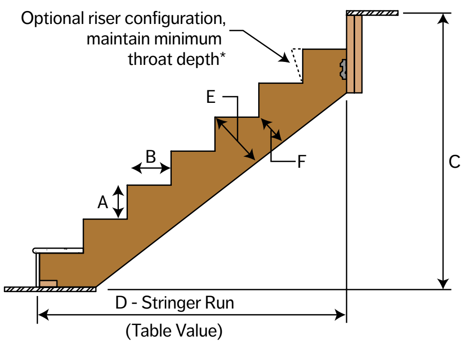
DO NOT walk on stringers until treads are attached

RIGIDLAM® LVL ALLOWABLE DESIGN STRESSES[1]

		1.4E RigidLam LVL	1.6E RigidLam LVL	2.1E RigidLam LVL
True Modulus of Elasticity (MOE)[2] – Edgewise or Flatwise	E (psi) =	1,400,000	1,600,000	2,100,000
Apparent Modulus of Elasticity (MOE)[2] – Edgewise or Flatwise	E (psi) =	1,300,000	1,500,000	2,000,000
Bending – Edgewise[3,4]	F_b edge (psi) =	2,250	2,250	3,100
Bending – Flatwise[5]	F_b flat (psi) =	2,250	2,250	3,100
Horizontal Shear - Edgewise	F_v edge (psi) =	200	220	290
Horizontal Shear - Flatwise	F_v flat (psi) =	130	130	130
Compression Perp. To Grain[2] - Edgewise	$F_{c\ perp}$ edge (psi) =	560	575	750
Compression Perp. To Grain[2] - Flatwise	$F_{c\ perp}$ flat (psi) =	650	650	650
Compression Parallel to Grain	$F_{c\ para}$ (psi) =	1,950	1,950	3,000
Tension Parallel to Grain[6]	F_t (psi) =	1,500	1,500	2,100
MOE for stability calculations[2]	E_{min} (psi) =	687,023	792,718	1,056,958

1. These allowable design stresses apply to dry service conditions.
2. No increase is allowed for duration of load.
3. For depths other than 12", multiply F_b by $(12/d)^{1/8}$ for DF (Mill #1055) or $(12/d)^{1/5}$ for SP (Mill #1125), where d = depth of member (inches).
4. A factor of 1.04 may be applied for repetitive members as defined in the *National Design Specification for Wood Construction*.
5. Tabulated F_b flat values are based on a width of 1-3/4”. For other widths, when loaded flatwise, multiply F_b flat by $(1.75/t)^{1/5}$, where t is the LVL width in inches. For widths less than 1-3/4”, use the tabulated value.
6. Tensile stress is based on a 4-foot gage length. For greater lengths, multiply F_t by $(4/L)^{1/9}$ where L = length in feet. For lengths less than 4-feet, use the published value.

STAIR STRINGER TERMS AND DEFINITIONS

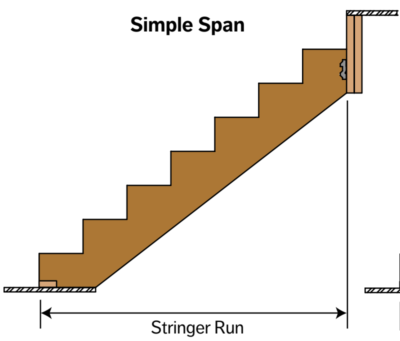


A - Step Rise:	Vertical rise of a single step
B - Step Run:	Horizontal length of a single step
C - Total Rise:	Vertical distance from top of finished framing on low end to top of finished framing on high end
D - Stringer Run:	Out-to-out horizontal span of stringer (table value)
E - Gross Stringer Depth:	Depth of stringer before steps are cut
F - Throat Depth*:	Net stringer depth after steps are cut (measured perpendicular to bottom edge of stringer)

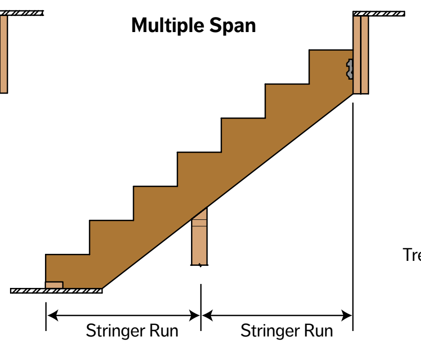
LVL Stringer Depth	*Minimum Throat Depth	
	Residential - 7-3/4” rise & 11” run	Commercial - 7” rise & 11” run
9-1/2”	3-1/8”	3-9/16”
11-7/8”	5-1/2”	5-15/16”
14”	7-5/8”	8-1/16”
16”	9-5/8”	10-1/16”

STAIR STRINGER CONFIGURATIONS

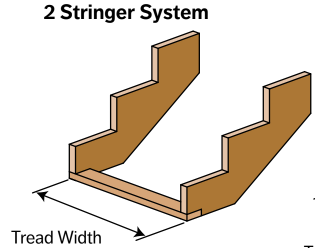
Simple Span



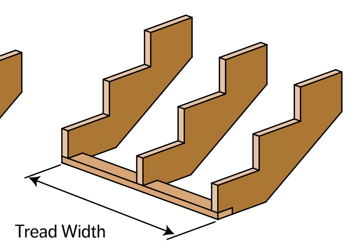
Multiple Span



2 Stringer System

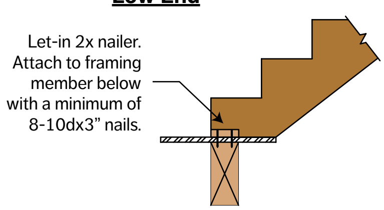


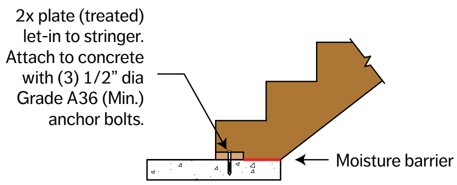
3 Stringer System



CONNECTION DETAILS - 40 PSF LIVE LOAD & 12 PSF DEAD LOAD (FOR HIGHER LOADING, CONSULT DESIGN PROFESSIONAL)

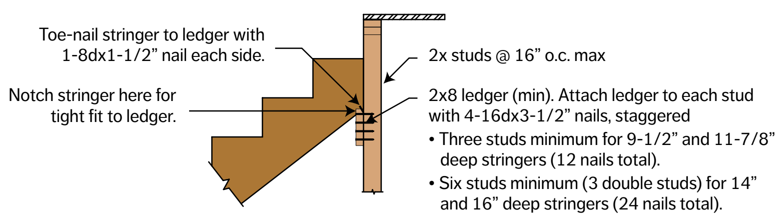
Low End

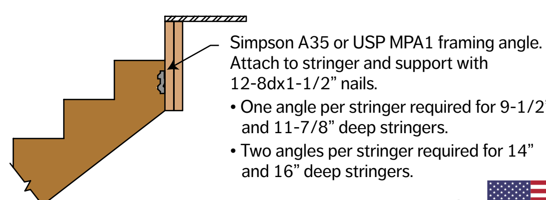




NOTE: Only use fasteners approved for use with the corresponding wood treatment.

High End



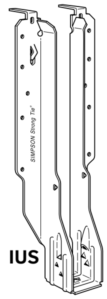


I-Joist Framing Connectors

SIMPSON Strong-Tie® CONNECTORS

FACE MOUNT HANGERS

Single I-Joist				Double I-Joist			
Width	Depth	Hanger	Down Load	Width	Depth	Hanger	Down Load
1-3/4"	9-1/2"	IUS1.81/9.5	950	3-1/2"	9-1/2"	MIU3.56/9	2,305
	11-7/8"	IUS1.81/11.88	1,185		11-7/8"	MIU3.56/11	2,880
	14"	IUS1.81/14	1,420		14"	MIU3.56/14	3,170
	16"	IUS1.81/16	1,660		16"	MIU3.56/16	3,455
2-1/16"	9-1/2"	IUS2.06/9.5	950	4-1/8"	9-1/2"	MIU4.28/9	2,305
	11-7/8"	IUS2.06/11.88	1,185		11-7/8"	MIU4.28/11	2,880
	14"	IUS2.06/14	1,420		14"	MIU4.28/14	3,170
	16"	IUS2.06/16	1,660		16"	MIU4.28/16	3,455
2-5/16"	9-1/2"	IUS2.37/9.5	950	4-5/8"	9-1/2"	MIU4.75/9	2,305
	11-7/8"	IUS2.37/11.88	1,185		11-7/8"	MIU4.75/11	2,880
	14"	IUS2.37/14	1,420		14"	MIU4.75/14	3,170
	16"	IUS2.37/16	1,660		16"	MIU4.75/16	3,455
2-1/2"	9-1/2"	IUS2.56/9.5	950	5"	9-1/2"	MIU5.12/9	2,305
	11-7/8"	IUS2.56/11.88	1,185		11-7/8"	MIU5.12/11	2,880
	14"	IUS2.56/14	1,420		14"	MIU5.12/14	3,170
	16"	IUS2.56/16	1,660		16"	MIU5.12/16	3,455
3-1/2"	9-1/2"	IUS3.56/9.5	1,185	7"	9-1/2"	HU410-2	2,680
	11-7/8"	IUS3.56/11.88	1,420		11-7/8"	HU412-2	3,275
	14"	IUS3.56/14	1,420		14"	HU414-2	3,870
	16"	IUS3.56/16	1,660		16"	HU414-2	3,870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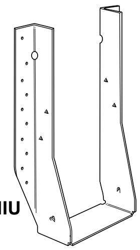
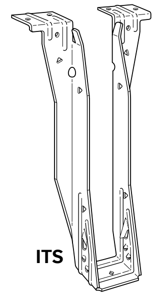

MIU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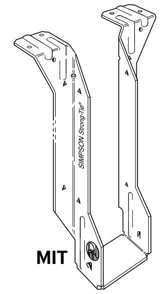
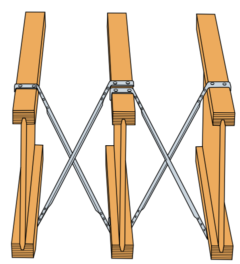

MIT

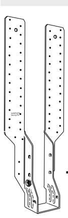
TENSION BRIDGING FOR I-JOIST

Joist Height	Joist Spacing (in)							
	12	16	19.2	24	30	32	36	42	48
9-1/2"	TB20	TB27	TB27	TB30	TB36	TB36	TB42	TB48	TB54
11-7/8"	TB20	TB27	TB27	TB30	TB36	TB36	TB42	TB48	TB54
14"	TB27	TB27	TB27	TB36	TB36	TB42	TB42	TB48	TB54
16"	TB27	TB27	TB30	TB36	TB42	TB42	TB42	TB48	TB54



TOP FLANGE HANGERS

Single I-Joist				Double I-Joist			
Width	Depth	Hanger	Down Load	Width	Depth	Hanger	Down Load
1-3/4"	9-1/2"	ITS1.81/9.5	1,550	3-1/2"	9-1/2"	MIT49.5	2,550
	11-7/8"	ITS1.81/11.88	1,550		11-7/8"	MIT411.88	2,550
	14"	ITS1.81/14	1,550		14"	MIT414	2,550
	16"	ITS1.81/16	1,550		16"	MIT416	2,550
2-1/16"	9-1/2"	ITS2.06/9.5	1,550	4-1/8"	9-1/2"	MIT4.28/9.5	2,550
	11-7/8"	ITS2.06/11.88	1,550		11-7/8"	MIT4.28/11.88	2,550
	14"	ITS2.06/14	1,550		14"	MIT4.28/14	2,550
	16"	ITS2.06/16	1,550		16"	BA4.28/16	4,715
2-5/16"	9-1/2"	ITS2.37/9.5	1,550	4-5/8"	9-1/2"	MIT359.5-2	2,550
	11-7/8"	ITS2.37/11.88	1,550		11 7/8"	MIT3511.88-2	2,550
	14"	ITS2.37/14	1,550		14"	MIT3514-2	2,550
	16"	ITS2.37/16	1,550		16"	MIT4.75/16	2,550
2-1/2"	9-1/2"	ITS2.56/9.5	1,550	5"	9-1/2"	MIT39.5-2	2,550
	11-7/8"	ITS2.56/11.88	1,550		11-7/8"	MIT311.88-2	2,550
	14"	ITS2.56/14	1,550		14"	MIT314-2	2,550
	16"	ITS2.56/16	1,550		16"	MIT5.12/16	2,550
3-1/2"	9-1/2"	ITS3.56/9.5	1,550	7"	9-1/2"	HB7.12/9.5	5,815
	11-7/8"	ITS3.56/11.88	1,550		11-7/8"	HB7.12/11.88	5,815
	14"	ITS3.56/14	1,550		14"	HB7.12/14	5,815
	16"	ITS3.56/16	1,550		16"	HB7.12/16	5,815


THAI Series

SKEWED 45° HANGERS

Single I-Joist				Double I-Joist			
Width	Depth	Hanger	Down Load	Width	Depth	Hanger	Down Load
1-3/4"	9-1/2"	SUR/L1.81/9	1,730	3-1/2"	9-1/2"	SUR/L410	2,015
	11-7/8"	SUR/L1.81/11	2,305		11-7/8"	SUR/L410	2,015
	14"	SUR/L1.81/14	2,470		14"	SUR/L414	2,400
	16"	SUR/L1.81/14	2,470		16"	SUR/L414	2,400
2-1/16"	9-1/2"	SUR/L2.1/9	2,015	4-1/8"	9-1/2"	HSUR/L4.28/9	1,785
	11-7/8"	SUR/L2.1/11	2,305		11-7/8"	HSUR/L4.28/11	2,380
	14"	SUR/L2.1/14	2,525		14"	HSUR/L4.28/11	2,380
	16"	SUR/L2.1/14	2,525		16"	HSUR/L4.28/11	2,380
2-5/16"	9-1/2"	SUR/L2.37/9	2,015	4-5/8"	9-1/2"	HSUR/L4.75/9	1,785
	11-7/8"	SUR/L2.37/11	2,305		11-7/8"	HSUR/L4.75/11	2,380
	14"	SUR/L2.37/14	2,525		14"	HSUR/L4.75/14	2,975
	16"	SUR/L2.37/14	2,525		16"	HSUR/L4.75/16	3,330
2-1/2"	9-1/2"	SUR/L2.56/9	2,015	5"	9-1/2"	HSUR/L5.12/9	1,785
	11-7/8"	SUR/L2.56/11	2,305		11-7/8"	HSUR/L5.12/11	2,380
	14"	SUR/L2.56/14	2,525		14"	HSUR/L5.12/14	2,975
	16"	SUR/L2.56/14	2,525		16"	HSUR/L5.12/16	3,330
3-1/2"	9-1/2"	SUR/L410	2,015	7"	9-1/2"	HU410-2X	2,145
	11-7/8"	SUR/L410	2,015		11-7/8"	HU412-2X	2,620
	14"	SUR/L414	2,400		14"	HU414-2X	3,095
	16"	SUR/L414	2,400		16"	HU414-2X	3,095

HU4-X are special order. Specify angle and direction.

ADJUSTABLE HEIGHT HANGERS

Single I-Joist				Double I-Joist			
Width	Depth	Hanger	Down Load	Width	Depth	Hanger	Down Load
1-3/4"	9-1/2"-14"	THAI1.8/22	1,465	3-1/2"	9-1/2"-14"	THAI422	1,465
2-1/16"	9-1/2"-14"	THAI2.1/22	1,465	4-1/8"	9-1/2"-14"	THAI-2	1,445
2-5/16"	9-1/2"-14"	THAI3522	1,465	4-5/8"	9-1/2"-14"	THAI-2	1,445
2-1/2"	9-1/2"-14"	THAI322	1,465	5"	9-1/2"-14"	THAI-2	1,445
3-1/2"	9-1/2"-14"	THAI422	1,465	7"	-	-	-

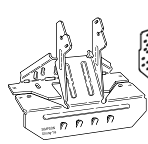
THAI-2 are special order. Specify width.

FIELD SLOPE AND SKEW

Single I-Joist				Double I-Joist			
Width	Depth	Hanger	Down Load	Width	Depth	Hanger	Down Load
1-3/4"	9-1/2"-14"	LSSR1.81Z	1,205	3-1/2"	9-1/2"-14"	LSSR410Z	1,810
2-1/16"	9-1/2"-14"	LSSR2.1Z	1,205	4-1/8"	9-1/2"-14"	LSU4.28	2,300
2-5/16"	9-1/2"-14"	LSSR2.37Z	1,205	4-5/8"	9-1/2"-14"	LSU3510-2	2,300
2-1/2"	9-1/2"-14"	LSSR2.56Z	1,205	5"	9-1/2"-14"	LSU5.12	1,790
3-1/2"	9-1/2"-14"	LSSR410Z	1,810	7"	-	-	-

VARIABLE PITCH - SINGLE I-JOISTS

Width	Depth	Hanger	Down Load
1-3/4"	ALL	VPA25	1,105
2-1/16"	ALL	VPA2.1	1,245
2-5/16"	ALL	VPA35	1,245
2-1/2"	ALL	VPA3	1,245
3-1/2"	ALL	VPA4	1,245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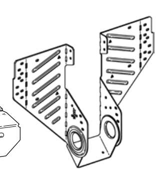

LSSR

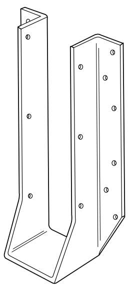
Orange highlighted hangers require web stiffeners at I-joist ends.

LVL Framing Connectors

FACE MOUNT LVL HANGERS

Single Ply-1-3/4" wide			Double Ply-3-1/2" wide			Triple Ply-5-1/4" wide			Quadruple-Ply 7" wide		
Depth	Hanger	Down Load	Depth	Hanger	Down Load	Depth	Hanger	Down Load	Depth	Hanger	Down Load
9-1/4"	HU9	3,570	9-1/4"	HHUS410	5,635	9-1/4"	HHUS5.50/10	5,635	9-1/4"	HHUS7.25/10	5,635
	HUS1.81/10	5,510		HGUS410	9,100		HGUS5.50/10	9,100		HGUS7.25/10	9,100
9-1/2"	HU9	3,570	9-1/2"	HHUS410	5,635	9-1/2"	HHUS5.50/10	5,635	9-1/2"	HHUS7.25/10	5,635
	HUS1.81/10	5,510		HGUS410	9,100		HGUS5.50/10	9,100		HGUS7.25/10	9,100
11-1/4"	HU11	4,465	11-1/4"	HHUS410	5,635	11-1/4"	HHUS5.50/10	5,635	11-1/4"	HHUS7.25/10	5,635
	HUS1.81/10	5,510		HGUS412	9,100		HGUS5.50/12	11,915		HGUS7.25/12	11,915
11-7/8"	HU11	4,465	11-7/8"	HHUS410	5,635	11-7/8"	HHUS5.50/10	5,635	11-7/8"	HHUS7.25/10	5,635
	HUS1.81/10	5,510		HGUS412	11,915		HGUS5.50/12	11,915		HGUS7.25/12	11,915
14"	HU14	5,055	14"	HHUS410	5,635	14"	HHUS5.50/10	5,635	14"	HGUS7.25/14	13,860
	HUS1.81/10	5,510		HGUS414	13,860		HGUS5.50/14	13,860		HGU7.25-SDS	13,160
16"	HU14	5,055	16"	HHUS410	5,635	16"	HGUS5.50/14	13,860	16"	HGUS7.25/14	13,860
	HUS1.81/10	5,510		HGUS414	13,860		HGU5.50-SDS	13,160		HHGU7.25-SDS	17,345
18"	-	-	18"	HHUS410	5,635	18"	HGUS5.50/14	13,860	18"	HGUS7.25/14	13,860
	-	-		HGUS414	13,860		HGU5.50-SDS	13,160		HHGU7.25-SDS	17,345

HGU AND HHGU Hangers specify height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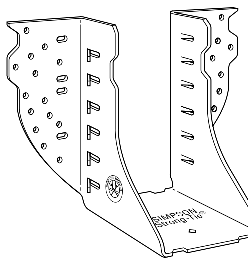
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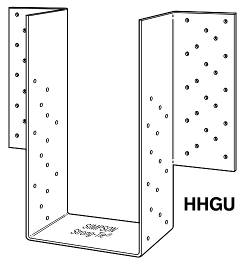
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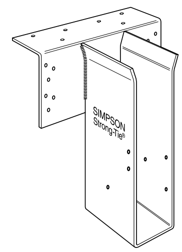
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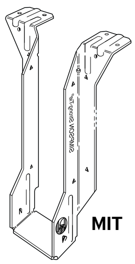
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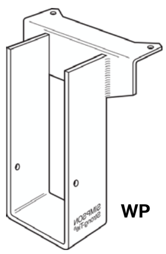
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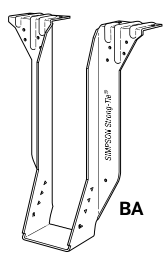
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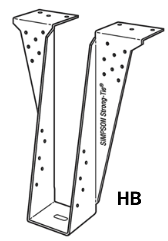
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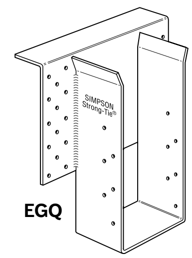

EGQ

TOP FLANGE LVL HANGERS

Single Ply-1-3/4" wide			Double Ply-3-1/2" wide			Triple Ply-5-1/4" wide			Quadruple Ply-7" wide		
Depth	Hanger	Down Load	Depth	Hanger	Down Load	Depth	Hanger	Down Load	Depth	Hanger	Down Load
9-1/4"	WP1.81X(H=9.25)	3,095	9-1/4"	BA3.56/9.25	4,715	9-1/4"	HGLTV5.37	10,585	9-1/4"	HGLTV7.12	10,585
	BA1.81/9.25	4,715		HB3.56/9.25	5,815		HB5.50/9.25	5,815		HB7.12/9.25	5,815
9-1/2"	MIT9.5	2,550	9-1/2"	BA3.56/9.5	4,715	9-1/2"	HGLTV5.37	10,585	9-1/2"	HGLTV7.12	10,585
	BA1.81/9.5	4,715		HB3.56/9.5	5,815		HB5.50/9.5	5,815		HB7.12/9.5	5,815
11-1/4"	WP1.81X(H=11.25)	3,095	11-1/4"	BA3.56/11.25	4,715	11-1/4"	HGLTV5.37	10,585	11-1/4"	HGLTV7.12	10,585
	BA1.81/11.25	4,715		HB3.56/11.25	5,815		HB5.50/11.25	5,815		HB7.12/11.25	5,815
11-7/8"	MIT11.88	2,550	11-7/8"	BA3.56/11.88	4,715	11-7/8"	HGLTV5.37	10,585	11-7/8"	HB7.12/11.88	5,815
	BA1.81/11.88	4,715		HB3.56/11.88	5,815		HB5.50/11.88	5,815		EGQ7.25-SDS	19,800
14"	MIT1.81/14	2,550	14"	HGLTV3.514	10,585	14"	HB5.50/14	5,815	14"	HGLTV7.12	10,585
	BA1.81/14	4,715		BA3.56/14	4,715		EGQ5.37-SDS	19,800		EGQ7.25-SDS	19,800
16"	MIT1.81/16	2,550	16"	HGLTV3.516	10,585	16"	HB5.50/16	5,815	16"	HGLTV7.12	10,585
	BA1.81X(H=16)	4,715		BA3.56/16	4,715		EGQ5.37-SDS	19,800		EGQ7.25-SDS	19,800
18"	BA1.81X(H=18)	4,715	18"	HGLTV3.518	10,585	18"	HGLTV5.37	10,585	18"	HGLTV7.12	10,585
	HB1.81X(H=18)	5,815		HB3.56/18	5,815		EGQ5.37-SDS	19,800		EGQ7.25-SDS	19,800

EGQ Hanger specify height

General Notes

1. Loads listed are the lowest hanger/header limitations assuming header material is Douglas-fir-Larch, Southern Pine, or LVL manufactured in the United States. Top Flange LVL Hanger loads assume header material is LVL. Joist reaction should be checked by a qualified designer to ensure proper hanger selection.
2. Refer to current Simpson Strong-Tie *Wood Construction Connectors* catalog to verify allowable loads and fastener size and quantity.
3. Loads shown are gravity (floor) loads (100% D.O.L.). Other load durations may apply. Refer to the current version of *Wood Construction Connectors* for allowable increases.
4. Top Flange Hanger configurations and thickness of top flange needs to be considered for flush frame conditions.
5. All loads shown are based on 16d common nails into the header and all nail holes filled (Exceptions: IUS and ITS use 10d common nails and some hangers use SDS screws which are supplied with the hanger).

All hangers listed are manufactured by Simpson Strong-Tie® Co., Inc. For additional information, refer to the current Simpson Strong-Tie literature, www.strongtie.com or contact Simpson Strong-Tie at 800-999-5099.

I-Joist Framing Connectors

MiTek®

FACE MOUNT HANGERS

Single I-Joists				Double I-Joists			
Width	Depth	Hanger	Down Load	Width	Depth	Hanger	Down Load
1-3/4"	9-1/2"	IHFL17925	960	3-1/2"	9-1/2"	IHF35925	3,530
	11-7/8"	IHFL17112	1,200		11-7/8"	IHF35112	3,530
	14"	IHFL1714	1,680		14"	IHF3514	4,115
2-1/16"	9-1/2"	IHFL20925	960	4-1/8"	9-1/2"	IHF20925-2	3,530
	11-7/8"	IHFL20112	1,200		11-7/8"	IHF20112-2	3,530
	14"	IHFL2014	1,680		14"	IHF2014-2	3,960
	16"	IHFL2016	1,920		16"	IHF2014-2	3,960
2-5/16"	9-1/2"	IHFL23925	960	4-5/8"	9-1/2"	IHF23925-2	3,530
	11-7/8"	IHFL23112	1,200		11-7/8"	THF23118-2	1,890
	14"	IHFL2314	1,680		14"	THF23140-2	2,660
	16"	IHFL2316	1,920		16"	THF23160-2	3,190
2-1/2"	9-1/2"	THFI2595	960	5"	9-1/2"	IHF25925-2	3,530
	11-7/8"	THFI25118	1,200		11-7/8"	IHF25112-2	3,530
	14"	THFI2514	1,680		14"	THF25140-2	2,660
	16"	IHFL2516	1,920		16"	THF25160-2	3,190
3-1/2"	9-1/2"	IHFL35925	1,200	7"	9-1/2"	HD7100	2,770
	11-7/8"	IHFL35112	1,440		11-7/8"	HD7120	3,390
	14"	IHFL3514	1,680		14"	HD7140	4,005
	16"	IHFL3516	1,920		16"	HD7160	3,695

MiTek Notes: (1) Loads assume maximum nailing schedule for single I-Joists.

TOP FLANGE HANGERS

Single I-Joists				Double I-Joists			
Width	Depth	Hanger	Down Load	Width	Depth	Hanger	Down Load
1-3/4"	9-1/2"	THO17950	1,235	3-1/2"	9-1/2"	THO35950	2,370
	11-7/8"	THO17118	1,235		11-7/8"	THO35118	2,525
	14"	TFL1714	1,585		14"	THO35140	2,400
2-1/16"	9-1/2"	TFL2095	1,585	4-1/8"	9-1/2"	THO20950-2	2,920
	11-7/8"	TFL20118	1,585		11-7/8"	THO20118-2	2,920
	14"	TFL2014	1,585		14"	THO20140-2	3,640
	16"	TFL2016	1,585		16"	THO20160-2	3,640
2-5/16"	9-1/2"	TFL2395	1,585	4-5/8"	9-1/2"	THO23950-2	3,640
	11-7/8"	TFL23118	1,585		11-7/8"	THO23118-2	3,640
	14"	TFL2314	1,585		14"	THO23140-2	4,420
	16"	TFL2316	1,585		16"	THO23160-2	4,420
2-1/2"	9-1/2"	TFL2595	1,585	5"	9-1/2"	THO25950-2	3,640
	11-7/8"	TFL25118	1,585		11-7/8"	THO25118-2	3,640
	14"	TFL2514	1,585		14"	THO25140-2	4,420
	16"	TFL2516	1,585		16"	THO25160-2	4,420
3-1/2"	9-1/2"	THO35950	2,370	7"	9-1/2"	BPH7195	3,100
	11-7/8"	THO35118	2,525		11-7/8"	BPH71118	3,075
	14"	THO35140	2,400		14"	BPH7114	3,075
	16"	THO35160	2,400		16"	BPH7116	3,075

MiTek Notes: For I-Joists, consult MiTek for joist limitations.

ADJUSTABLE HEIGHT HANGERS

Single I-Joists				Double I-Joists			
Width	Depth	Hanger	Down Load	Width	Depth	Hanger	Down Load
1-3/4"	9-1/2"	MSH1722	2,390	3-1/2"	9-1/2"	MSH422	2,530
	11-7/8"	MSH1722	2,390		11-7/8"	MSH422	2,530
	14"	MSH1722	2,390		14"	MSH422	2,530
2-1/16"	9-1/2"	MSH2022	2,390	4-1/8"	9-1/2"	-- --	-- --
	11-7/8"	MSH2022	2,390		11-7/8"	-- --	-- --
	14"	MSH2022	2,390		14"	-- --	-- --
	16"	MSH2022	2,390		16"	-- --	-- --
2-5/16"	9-1/2"	MSH2322	2,395	4-5/8"	9-1/2"	MSH2322-2	2,530
	11-7/8"	MSH2322	2,395		11-7/8"	MSH2322-2	2,530
	14"	MSH2322	2,395		14"	MSH2322-2	2,530
	16"	MSH2322	2,395		16"	MSH2322-2	2,530
2-1/2"	9-1/2"	MSH322	2,395	5"	9-1/2"	MSH2622-2	2,530
	11-7/8"	MSH322	2,395		11-7/8"	MSH2622-2	2,530
	14"	MSH322	2,395		14"	MSH2622-2	2,530
	16"	MSH322	2,395		16"	MSH2622-2	2,530
3-1/2"	9-1/2"	MSH422	2,530	7"	9-1/2"	MSH422-2	3,740
	11-7/8"	MSH422	2,530		11-7/8"	MSH422-2	3,740
	14"	MSH422	2,530		14"	MSH422-2	3,740
	16"	MSH422	2,530		16"	MSH422-2	3,740

Blue highlighted areas require web stiffeners at joist ends.

SKEWED 45° HANGERS

Single I-Joists				Double I-Joists			
Width	Depth	Hanger	Down Load	Width	Depth	Hanger	Down Load
1-3/4"	9-1/2"	SKH1720L/R	1,650	3-1/2"	9-1/2"	HD410_SK45L/R_BV[1,2]	3,080
	11-7/8"	SKH1720L/R	1,650		11-7/8"	HD410_SK45L/R_BV[1,2]	3,080
	14"	SKH1724L/R	1,890		14"	HD414_SK45L/R_BV[1,2]	4,005
2-1/16"	9-1/2", 11-7/8"	SKH2020L/R	1,650	4-1/8"	9-1/2", 11-7/8"	SKH2020L/R-2[1]	1,710
	14", 16"	SKH2024L/R	1,890		14", 16"	SKH2024L/R-2[1]	1,950
2-5/16"	9-1/2", 11-7/8"	SKH2320L/R	1,650	4-5/8"	9-1/2", 11-7/8"	SKH2320L/R-2[1]	1,710
	14", 16"	SKH2324L/R	1,890		14", 16"	SKH2324L/R-2[1]	1,950
2-1/2"	9-1/2", 11-7/8"	SKH2520L/R	1,650	5"	9-1/2", 11-7/8"	SKH2520L/R-2[1]	1,710
	14", 16"	SKH2524L/R	1,890		14", 16"	SKH2524L/R-2[1]	1,950
3-1/2"	9-1/2"	HD410_SK45L/R_BV[1,2]	3,080	7"	9-1/2"	HD7100_SK45L/R_BV[1,2]	2,770
	11-7/8"	HD410_SK45L/R_BV[1,2]	3,080		11-7/8"	HD7120_SK45L/R_BV[1,2]	3,390
	14"	HD414_SK45L/R_BV[1,2]	4,005		14"	HD7140_SK45L/R_BV[1,2]	4,005
	16"	HD414_SK45L/R_BV[1,2]	4,005		16"	HD7160_SK45L/R_BV[1,2]	3,695

MiTek Notes: (1) Bevel cut required on end of joist to achieve design loads. (2) Hangers are special order and loads assume maximum nailing schedule. Consult MiTek for pricing and lead times.

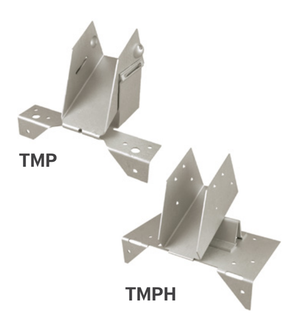
FIELD SLOPE AND SKEW

Single I-Joists				Double I-Joists			
Width	Depth	Hanger	Down Load	Width	Depth	Hanger	Down Load
1-3/4"	9-1/2"-14"	LSSH179	1,200	3-1/2"	9-1/2"-14"	LSSH35	1,610
2-1/16"	9-1/2"-14"	LSSH20	1,200	4-1/8"	9-1/2"-14"	--	--
	16"	LSSH20[1]	1,200		16"	--	--
2-5/16"	9-1/2"-14"	LSSH23	1,200	4-5/8"	9-1/2"-14"	--	--
	16"	LSSH23[1]	1,200		16"	--	--
2-1/2"	9-1/2"-14"	LSSH25	1,610	5"	9-1/2"-14"	--	--
	16"	LSSH25[1]	1,610		16"	--	--
3-1/2"	9-1/2"-14"	LSSH35	1,610	7"	9-1/2"-14"	--	--
	16"	LSSH35[1]	1,610		16"	--	--

MiTek Notes: (1) Supplemental lateral support connection recommended when hanger height is less than 60% of joist height.

VARIABLE PITCH HANGERS

Single I-Joists			
Width	Depth	Hanger	Down Load
1-3/4"	9-1/2" -	TMP175	1,705
	16"	TMPH175[1]	3,190
2-1/8"	9-1/2" -	TMP21	1,705
	16"	TMPH21[1]	3,190
2-5/16"	9-1/2" -	TMP23	1,705
	16"	TMPH23[1]	3,190
2-1/2"	9-1/2" -	TMP25	1,705
	16"	TMPH25[1]	3,190
3-1/2"	9-1/2" -	TMP4	1,705
	16"	TMPH4[1]	3,190



MiTek Notes: (1) TMPH design values are based on a 6/12 Pitch.

LVL Framing Connectors

MiTek®

FACE MOUNT HANGERS

Single Ply - 1-3/4" wide			Double Ply - 3-1/2" wide			Triple Ply - 5-1/4" wide			Quadruple Ply - 7" wide		
Depth	Hanger	Down Load	Depth	Hanger	Down Load	Depth	Hanger	Down Load	Depth	Hanger	Down Load
9-1/4", 9-1/2"	HD17925[2] HUS179[1]	3,695 5,580	9-1/4", 9-1/2"	THD410 THDH410[1]	5,850 9,020	9-1/4", 9-1/2"	THD610 THDH610[1]	6,535 9,020	9-1/4", 9-1/2"	THD7210 THDH7210[1]	6,535 9,020
11-1/4", 11-7/8"	HD17112[2] HUS179[1]	4,320 5,580	11-1/4", 11-7/8"	THD410 THDH412[1]	5,850 9,710	11-1/4", 11-7/8"	THD610 THDH612[1]	6,535 9,530	11-1/4", 11-7/8"	THD7210 THDH7212[1]	6,535 9,020
14"	HD1714[2] HUS179[1]	4,580 5,580	14"	THD410 THDH414[1]	5,850 11,325	14"	THD610 THDH614[1]	6,535 11,325	14"	THD7210 THDH7214[1]	6,535 11,325
16"	HD1714[2] --	4,580 --	16"	THD412 THDH414[1]	7,045 11,325	16"	THD612 THDH614[1]	8,255 11,325	16"	HD7120[2] THDH7214[1]	3,390 11,325
18"	HD1714[2] --	4,580 --	18"	THD412 THDH414[1]	7,045 11,325	18"	THD612 THDH614[1]	8,255 11,325	18"	HD7140[2] THDH7214[1]	4,005 11,325

MiTek Notes: (1) Joist nails need to be toe nailed at a 30° to 45° angle to achieve listed loads. (2) Loads assume maximum nailing schedule.

HUS

HD

THD

THDH

HLBH

PHXU

TOP FLANGE HANGERS

Single Ply - 1-3/4" wide			Double Ply - 3-1/2" wide			Triple Ply - 5-1/4" wide			Quadruple Ply - 7" wide		
Depth	Hanger	Down Load	Depth	Hanger	Down Load	Depth	Hanger	Down Load	Depth	Hanger	Down Load
9-1/4"	BPH17925 PHXU17925	2,970 4,350	9-1/4"	HBPH35925 HLBH35925	6,310 10,045	9-1/4"	HBPH55925 HLBH55925	6,185 10,045	9-1/4"	HBPH71925 HLBH71925	6,185 10,045
9-1/2"	BPH1795 PHXU1795	2,970 4,350	9-1/2"	HBPH3595 HLBH3595	6,310 10,045	9-1/2"	HBPH5595 HLBH5595	6,185 10,045	9-1/2"	HBPH7195 HLBH7195	6,185 10,045
11-1/4"	BPH17112 PHXU17112	2,970 4,350	11-1/4"	HBPH35112 HLBH35112	6,310 10,045	11-1/4"	HBPH55112 HLBH55112	6,185 10,045	11-1/4"	HBPH71112 HLBH71112	6,185 10,045
11-7/8"	BPH17118 PHXU17118	2,970 4,350	11-7/8"	HBPH35118 HLBH35118	6,310 10,045	11-7/8"	HBPH55118 HLBH55118	6,185 10,045	11-7/8"	HBPH71118 HLBH71118	6,185 10,045
14"	BPH1714 PHXU1714	2,970 4,350	14"	HBPH3514 HLBH3514	6,310 10,045	14"	HBPH5514 HLBH5514	6,185 10,045	14"	HBPH7114 HLBH7114	6,185 10,045
16"	BPH1716 --	2,970 --	16"	HBPH3516 HLBH3516	6,310 10,045	16"	HBPH5516 HLBH5516	6,185 10,045	16"	HBPH7116 HLBH7116	6,185 10,045
18"	-- --	-- --	18"	HBPH3518 HLBH3518	6,310 10,045	18"	HBPH5518 HLBH5518	6,185 10,045	18"	HBPH7118 HLBH7118	6,185 10,045

General Notes

1. Loads listed are the lowest hanger/header limitations assuming header material is Douglas-fir-Larch, Southern Pine, or LVL manufactured in the United States. Top Flange LVL Hanger loads assume header material is LVL. Joist reaction should be checked by a qualified designer to ensure proper hanger selection.
2. Refer to current MiTek product catalog to verify allowable loads and fastener size and quantity.
3. Loads shown are gravity (floor) loads (100% D.O.L.). Other load durations may apply. Refer to the current MiTek product catalog for allowable increases.
4. Top Flange Hanger configurations and thickness of top flange needs to be considered for flush frame conditions.

All hangers listed are manufactured by Mitek®. For more information refer to the current MiTek literature, www.mitek-us.com or contact MiTek at 800-328-5934.

CODE REPORT INDEX

Roseburg EWP Code Reports	Product
ICC ESR-1251 *(with LABC/LARC supplement, CBC/CRC supplement including DSA & OSHPD, and FBC supplement)*	I-JOIST
ICC ESR-1210 *(with LABC/LARC supplement, CBC/CRC supplement including DSA & OSHPD, and FBC supplement)*	LVL & LVL Rim
APA PR-L259 (U.S.) and APA PR-L259C (Canada)	I-JOIST
APA PR-L289 (U.S.) and APA PR-L289C (Canada)	LVL
APA PR-L270	LVL STUDS
Florida FL2440	I-JOIST & LVL
CCMC 13323-R (Canada)	I-JOIST
CCMC 13310-R (Canada)	LVL

The code reports listed above are available at Roseburg.com, in the Engineered Wood Products section under Code Reports.

PRODUCT & PERFORMANCE

WARRANTY

Roseburg Forest Products warrants that its **RFPI®-Joists, RigidLam® laminated veneer lumber (LVL)** and **RigidRim® Rimboard** will be free from manufacturing errors and defects in workmanship and materials in accordance with our specifications.

Furthermore, we warrant that these products, when properly stored, installed and used in dry use service conditions, will meet or exceed our performance specifications for the expected life of the structure.

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Effective May 2023

An electronic version of this Design Guide can be found at www.Roseburg.com under "Design Guides" in the Engineered Wood section.

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