

# 2.2E Parallam® PSL 20", 22", and 24" Deep Beams

## Available Sizes for 2.2E Parallam® PSL

2.2E Parallam® PSL headers and beams are available in the following standard sizes:

**Widths:** 3½", 5¼", and 7"

**Depths:** 20", 22", and 24"

**Lengths:** up to 66'

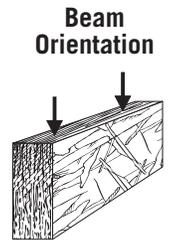
Custom widths and depths are also available. Contact your Weyerhaeuser representative for details.

## General Assumptions for Trus Joist® Beams

- Lateral support is required at all bearing points and along the compression edge at intervals of 48" on-center, maximum.
- No camber.
- Beams and columns must remain straight to within 5/16" (in.) of true alignment. L is the unrestrained length of the member in feet.

## Specified Strengths<sup>(1)</sup> and Moduli of Elasticity (Standard Term)

Shear modulus of elasticity	G	=	137,500 psi
<b>Modulus of elasticity</b>	<b>E</b>	=	<b>2.2 x 10<sup>6</sup> psi</b>
Flexural stress	f <sub>b</sub>	=	5,360 psi <sup>(2)</sup>
Tension stress	f <sub>t</sub>	=	3,750 psi <sup>(3)</sup>
Compression perpendicular to grain	f <sub>c⊥</sub>	=	1,135 psi <sup>(4)</sup>
Compression parallel to grain	f <sub>c  </sub>	=	4,630 psi <sup>(5)</sup>
Horizontal shear parallel to grain	f <sub>v</sub>	=	540 psi
Equivalent specific gravity	SG	=	0.50 <sup>(6)</sup>
Density		=	45 lbs/ft <sup>3</sup>



- (1) To obtain factored resistances, apply the appropriate formulae from CSA O86 to the specified strengths shown.
- (2) For 12" depth. For other depths, multiply by  $[\frac{12}{d}]^{0.111}$
- (3) f<sub>t</sub> has been adjusted to reflect the volume effects for most standard applications.
- (4) f<sub>c⊥</sub> shall not be increased for duration of load.
- (5) For column applications, use a specified strength of 800 psi. Alternatively, refer to CCMC 11161-R, Table 4.1.1, footnote 9.
- (6) For lateral connection design only.

*Use Trus Joist® Forte® single-member sizing software to help design deep-depth Parallam® PSL members. Forte® is available as a free download at: [woodbywy.com/software/forte-software/](http://woodbywy.com/software/forte-software/)*

Code Evaluation: See CCMC 11161-R

*Untreated Parallam® PSL is intended for dry-use applications.*

## Bearing Length Requirements

Factored Reaction (lbs)	Beam Width		
	3½"	5¼"	7"
6,000	2"	1½"	1½"
8,000	2¾"	1¾"	1½"
10,000	3¼"	2¼"	1¾"
12,000	4"	2¾"	2"
14,000	4½"	3"	2¼"
16,000	5¼"	3½"	2¾"
18,000	5¾"	4"	3"
20,000	6½"	4¼"	3¼"
22,000	7"	4¾"	3½"
24,000	7¾"	5¼"	4"
26,000		5½"	4¼"
28,000		6"	4½"
30,000		6½"	4¾"
32,000		6¾"	5¼"
34,000		7¼"	5½"

## General Notes

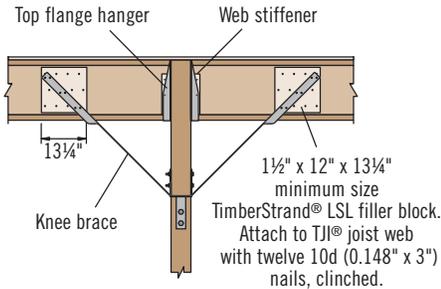
- **Minimum bearing length:** 1½" at ends, 3½" at intermediate supports.
- Bearing across full beam width is required.
- Bearing lengths for Parallam® PSL are based on a factored bearing resistance of 910 psi.
- Bearing length may need to be increased if the factored bearing resistance of the support member is less than 910 psi.
- Interpolation between reaction loads is permitted for determining bearing lengths.



**DO NOT cut, notch, or drill holes except as approved by the designer of record**

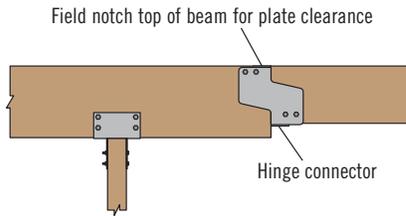


### Joist Bearing on Beam with Knee Braces Required



L22

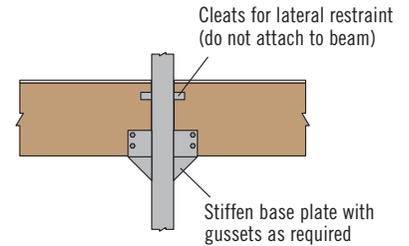
### Bearing on Column with Hinge Connector



L23

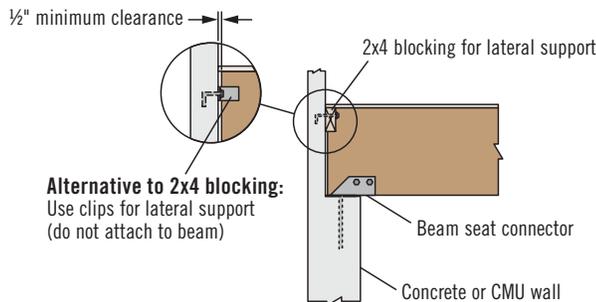
Hinge connector and required bracing are the responsibility of the designer of record.

### Bearing on Gusseted Steel Column



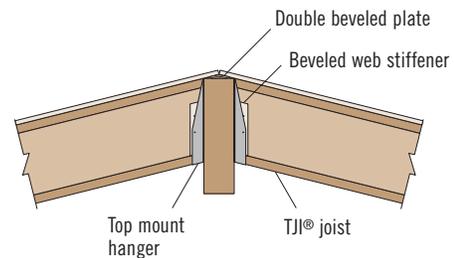
L24

### Bearing on Concrete or Masonry Pocket



L25

### Joist Bearing on Ridge Beam



L26

## CONNECTIONS AND NAILING REQUIREMENTS

### Closest Allowable Nail Spacing

Nail Size	Closest On-center Spacing Per Row	
	Narrow Face	Wide Face
8d (0.131" x 2½")	4"	2"
10d (0.148" x 3") or 12d (0.148" x 3¼")	4"	3"
16d (0.162" x 3½")	6"	4"

To minimize splitting, member edge distance and spacing between rows shall be 2.5 x nail diameter or 3/8", whichever is greater. Where multiple rows are used, fasteners in adjacent rows must be staggered and the rows must be equally spaced from the centerline of the narrow face axis.

### General Notes

- Parallam® PSL lateral nail resistance and nail withdrawal are equivalent to that of Douglas fir (specific gravity = 0.50).
- Bolt design values are as provided in the adopted code for Douglas fir (specific gravity = 0.50).
- Bolt holes must be minimum of bolt diameter plus 1/32" and no greater than bolt diameter plus 1/16". Bolt size not to exceed 1" diameter.
- Contact your Weyerhaeuser representative for multiple-ply connections and other connections not addressed in this guide.
- The following two manufacturers have met the technical requirements to supply proprietary connectors for Trus Joist products. For additional information, please refer to their literature.
  - Simpson Strong-Tie Co., Inc.: 1-800-999-5099
  - USP Structural Connector®: 1-800-328-5934

For additional details and design information for Parallam® beams, see the Trus Joist® Beam, Header, and Column Specifier's Guide, TJ-9505.

July 2016 • Reorder TJ-7501

CONTACT US | 1.888.453.8358 • woodbywy.com/contact

This document supersedes all previous versions. If this is more than one year old, contact your dealer or Weyerhaeuser rep.

Weyerhaeuser, Parallam, and Trus Joist are registered trademarks of Weyerhaeuser NR. © 2016 Weyerhaeuser NR Company. All rights reserved. Printed in the USA.