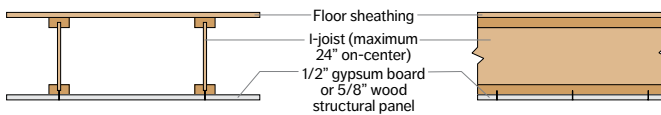


## Fire Protection Compliance with the International Residential Code (IRC)

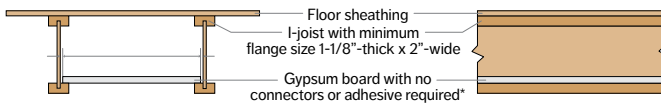
This informational brief shows prescriptive methods for fire protection of floors constructed with prefabricated Roseburg RFPI<sup>®</sup>-Joists. Beginning with the 2012 IRC, new fire protective membrane provisions were added for residential floor assemblies. The provisions apply to I-joists, floor trusses, light-gauge steel framing and less than 2" x 10" nominal dimension lumber and structural composite lumber. The provisions are in Section R501.3 of the 2012 IRC and Section R302.13 of the 2015 and 2018 IRC.

For specific requirements and limitations regarding I-joists, refer to APA-The Engineered Wood Association report SR-405 for generic I-joists and report PR-S259 for Roseburg RFPI-Joists at: [www.apawood.org](http://www.apawood.org) or [www.roseburg.com](http://www.roseburg.com).

### GYPSON BOARD ATTACHED TO BOTTOM OF FLANGE

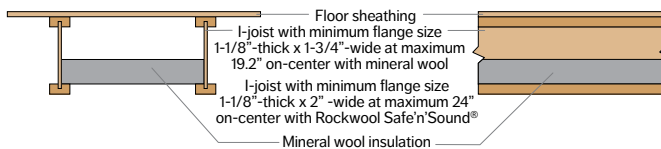


### GYPSON BOARD ON TOP OF BOTTOM FLANGE\*

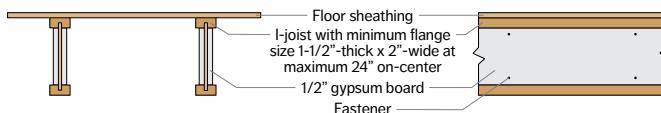


\*Minimum 1/2"-thick gypsum board for joists at 19.2" on-center or less, minimum 5/8"-thick gypsum board for joists at 24" on-center

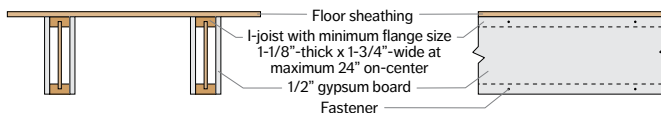
### MINERAL WOOL INSULATION



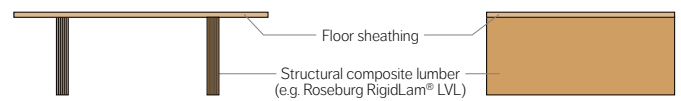
### GYPSON BOARD ATTACHED TO WEB



### GYPSON BOARD ATTACHED TO SIDES OF FLANGE

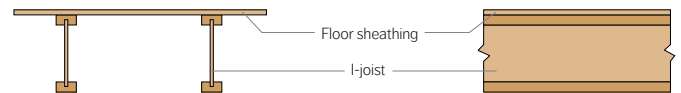


### STRUCTURAL COMPOSITE LUMBER EXCEPTION



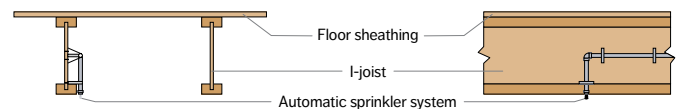
In accordance with Exception 4 of the 2012 IRC Section R501.3 and 2015 and 2018 IRC Section R302.12, floor assemblies using dimensional lumber or structural composite lumber equal to or greater than 2"x10" nominal dimensions do not require membrane protection.

### CRAWL SPACE EXCEPTION



In accordance with Exception 2 of the 2012 IRC Section R501.3 and 2015 and 2018 IRC Section R302.13, floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances do not require membrane protection.

### AUTOMATIC SPRINKLER EXCEPTION



In accordance with Exception 1 of the 2012 IRC Section R501.3 and 2015 and 2018 IRC Section R302.13, floor assemblies located directly over a space protected by an automatic sprinkler system do not require membrane protection.

## Floor Span Tables

Roseburg supports the installation of 1/2" gypsum wall board to the bottom of light-weight framing systems as required by Section R501.3 of the 2012 and Section R302.13 of the 2015 and 2018 International Residential Code (IRC) and thus providing an economical layer of fire protection. However, when a gypsum wall board ceiling is not a viable option, Roseburg RigidLam Laminated Veneer Lumber (LVL) with a minimum cross-section of 1-1/2" x 9-1/2" may be used in lieu of 2x10 dimension lumber to meet exception 4 of Section R501.3 of the 2012 IRC or Section R302.13 of the 2015 and 2018 IRC. The adhesive used in RigidLam LVL has been rigorously tested in accordance with the heat durability requirements of ASTM D7247 and D5456, which ensures that the adhesive will not negatively affect the performance of the LVL in a fire.

The following tables are meant to assist in the appropriate selection of Douglas-fir or southern pine RigidLam LVL used as floor joists. Alternatively, appropriate software such as Simpson Strong Tie® Component Solutions™ may be used to size RigidLam LVL floor joists.

1-1/2" 2.1E RIGIDLAM LVL FLOOR SPANS - 40 PSF LIVE LOAD, 12 PSF DEAD LOAD								
	Simple Span				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.
<b>1-1/2" x 9-1/2" 2.1E</b>	18' - 1"	16' - 5"	15' - 5"	14' - 3"	19' - 9"	17' - 11"	16' - 10"	15' - 6"
<b>1-1/2" x 11-7/8" 2.1E</b>	22' - 8"	20' - 6"	19' - 3"	17' - 10"	24' - 9"	22' - 5"	<b>20' - 0"</b>	<b>16' - 2"</b>

1-3/4" 2.1E RIGIDLAM LVL FLOOR SPANS - 40 PSF LIVE LOAD, 12 PSF DEAD LOAD								
	Simple Span				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.
<b>1-3/4" x 9-1/2" 2.1E</b>	19' - 1"	17' - 4"	16' - 3"	15' - 0"	20' - 10"	18' - 10"	17' - 9"	16' - 5"
<b>1-3/4" x 11-7/8" 2.1E</b>	23' - 11"	21' - 8"	20' - 4"	18' - 10"	26' - 1"	23' - 8"	22' - 2"	<b>18' - 8"</b>
<b>1-3/4" x 14" 2.1E</b>	28' - 2"	25' - 7"	24' - 0"	22' - 3"	30' - 10"	<b>27' - 0"</b>	<b>22' - 10"</b>	<b>18' - 8"</b>

**Notes:**

- Spans are maximum clear distances between supports and are based on uniform loads.
- Multiple span lengths shown require adequate lateral bracing of bottom edge of LVL.
- Multiple spans are based on the longest span. The shortest span shall not be less than 40% of the longest span.
- Live Load deflection is limited to L/480. Total Load deflection is limited to L/240.
- Spans do not reflect any additional stiffness provided by floor sheathing.
- Spans are based on a minimum end bearing length of 1-3/4" and a minimum intermediate bearing length of 3-1/2" and the bearing capacity of SPF wall plate (425 psi)
- Spans in bold italics are limited by intermediate bearing length of 3-1/2". Use appropriate software to determine allowable span with longer intermediate bearing length.