

## Technical Bulletin

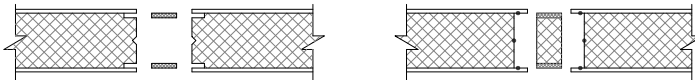
### Roof & Floor Panel Transverse Load Design Charts - US Model Codes

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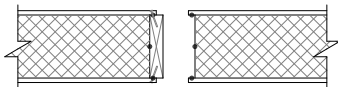
This bulletin provides transverse design loads for the Insulspan® Structural Insulating Panel (SIP) System when used as a component in roof or floor systems designed in accordance with the 2012, 2009 and 2006 **International Building Code®** and **International Residential Code®**. Insulspan has completed structural testing of the Insulspan SIP System for this application using a third party testing laboratory following the requirements of ASTM E72, **Standard Test Methods of Conducting Strength Tests of Panels for Building Construction**.

The attached **Roof and Floor Transverse Design Load** charts dated January 20, 2014 summarize total design loads with the following vertical joint configurations:

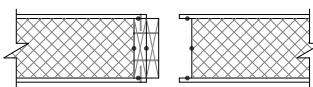
- Table R-1-S – OSB Surface Spline or Insulspline



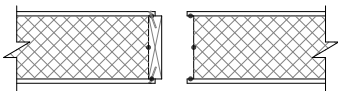
- Table R-2-L – Single 2x Lumber



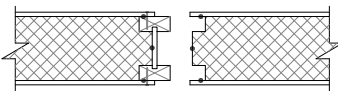
- Table R-3-DL – Double 2x Lumber



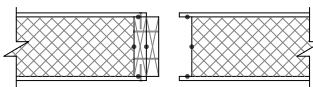
- Table R-4-LVL – Single 1.8E LVL



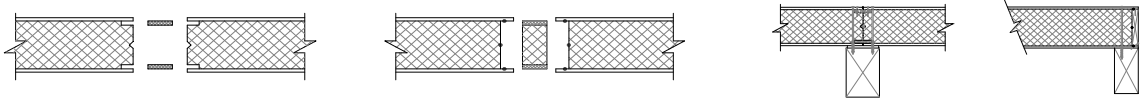
- Table R-5-I – Wood I-Joist



- Table R-6-DLVL – Double 1.8E LVL



**Table R-1-S ROOF AND FLOOR TRANSVERSE DESIGN LOAD (psf)**



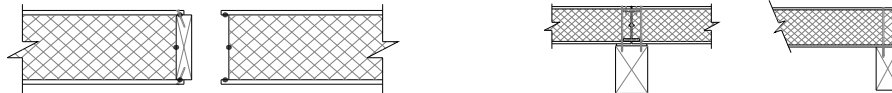
| Thickness |         | Allowable Deflection | OSB SURFACE SPLINES OR INSULSPLINES |            |            |           |           |           |           |           |           |           |           |           |           |           |           |
|-----------|---------|----------------------|-------------------------------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| SIP       | EPS     |                      | PANEL SPAN (feet)                   |            |            |           |           |           |           |           |           |           |           |           |           |           |           |
|           |         |                      | 4                                   | 5          | 6          | 7         | 8         | 9         | 10        | 11        | 12        | 13        | 14        | 15        | 16        | 17        | 18        |
| 4 1/2"    | 3 5/8"  | L/360                | 94                                  | 73         | 55         | 42        | 33        | 26        | 21        | 17        | 14        | -         | -         | -         | -         | -         | -         |
|           |         | L/240                | <b>121</b>                          | <b>97</b>  | <b>81</b>  | 64        | 50        | 39        | 32        | 26        | 21        | -         | -         | -         | -         | -         | -         |
|           |         | L/180                | <b>121</b>                          | <b>97</b>  | <b>81</b>  | <b>68</b> | <b>56</b> | <b>47</b> | <b>39</b> | <b>32</b> | <b>27</b> | -         | -         | -         | -         | -         | -         |
| 6 1/2"    | 5 5/8"  | L/360                | <b>136</b>                          | <b>109</b> | 84         | 66        | 53        | 43        | 35        | 29        | 24        | -         | -         | -         | -         | -         | -         |
|           |         | L/240                | <b>136</b>                          | <b>109</b> | <b>91</b>  | <b>78</b> | <b>68</b> | <b>60</b> | 52        | 43        | 36        | -         | -         | -         | -         | -         | -         |
|           |         | L/180                | <b>136</b>                          | <b>109</b> | <b>91</b>  | <b>78</b> | <b>68</b> | <b>60</b> | <b>54</b> | <b>46</b> | <b>39</b> | -         | -         | -         | -         | -         | -         |
| 8 1/4"    | 7 3/8"  | L/360                | <b>151</b>                          | <b>120</b> | <b>100</b> | <b>86</b> | 73        | 60        | 50        | 42        | 36        | 30        | 26        | 22        | 19        | 17        | 15        |
|           |         | L/240                | <b>151</b>                          | <b>120</b> | <b>100</b> | <b>86</b> | <b>75</b> | <b>67</b> | <b>60</b> | <b>55</b> | <b>50</b> | <b>44</b> | <b>38</b> | <b>33</b> | <b>29</b> | 25        | 22        |
|           |         | L/180                | <b>151</b>                          | <b>120</b> | <b>100</b> | <b>86</b> | <b>75</b> | <b>67</b> | <b>60</b> | <b>55</b> | <b>50</b> | <b>44</b> | <b>38</b> | <b>33</b> | <b>29</b> | <b>26</b> | <b>23</b> |
| 10 1/4"   | 9 3/8"  | L/360                | <b>159</b>                          | <b>127</b> | <b>106</b> | <b>91</b> | <b>79</b> | <b>71</b> | <b>63</b> | <b>58</b> | 51        | 44        | 38        | 33        | 29        | 26        | 23        |
|           |         | L/240                | <b>159</b>                          | <b>127</b> | <b>106</b> | <b>91</b> | <b>79</b> | <b>71</b> | <b>63</b> | <b>58</b> | <b>53</b> | <b>49</b> | <b>43</b> | <b>37</b> | <b>33</b> | <b>29</b> | <b>26</b> |
|           |         | L/180                | <b>159</b>                          | <b>127</b> | <b>106</b> | <b>91</b> | <b>79</b> | <b>71</b> | <b>63</b> | <b>58</b> | <b>53</b> | <b>49</b> | <b>43</b> | <b>37</b> | <b>33</b> | <b>29</b> | <b>26</b> |
| 12 1/4"   | 11 3/8" | L/360                | <b>167</b>                          | <b>134</b> | <b>111</b> | <b>95</b> | <b>83</b> | <b>74</b> | <b>67</b> | <b>61</b> | <b>56</b> | <b>51</b> | <b>48</b> | <b>43</b> | <b>37</b> | <b>33</b> | <b>30</b> |
|           |         | L/240                | <b>167</b>                          | <b>134</b> | <b>111</b> | <b>95</b> | <b>83</b> | <b>74</b> | <b>67</b> | <b>61</b> | <b>56</b> | <b>51</b> | <b>48</b> | <b>43</b> | <b>37</b> | <b>33</b> | <b>30</b> |
|           |         | L/180                | <b>167</b>                          | <b>134</b> | <b>111</b> | <b>95</b> | <b>83</b> | <b>74</b> | <b>67</b> | <b>61</b> | <b>56</b> | <b>51</b> | <b>48</b> | <b>43</b> | <b>37</b> | <b>33</b> | <b>30</b> |

Revision : January 20, 2014

**Notes:**

1. The tabulated values are total design loads for panels with nominal 2" wide bearing at supports based upon design requirements of International Building Code® and International Residential Code®. Values printed in **bold type** are based on panel strength rather than stiffness.
2. The span of a sloped roof panel must be measured along the slope. Design loads are to be calculated as normal loads acting perpendicular to the face of the panel.
3. Insulspan SIP System must be assembled as per Insulspan Installation Guide and recommended assembly details.
4. Insulspan SIP skins are nailed to the vertical OSB splines at panel joints using minimum 8d box nails @ 6" on center or equivalent.
5. Insulspan SIP System core material is molded expanded polystyrene (EPS) insulation complying with the requirements of ASTM C 578, type I.
6. Insulspan SIP System exterior skins are minimum 7/16-inch thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1.
7. Roof panels subject to concentrated roof maintenance live loads must be limited to maximum span of 8 feet for 4 1/2" roof panels and 16 feet for 8 1/4" or 10 1/4" roof panels.
8. An approved thermal barrier, such as 7/16-inch thick wood-based structural-use sheathing, must be installed over the top surface of floor panels.

**Table R-2-L ROOF AND FLOOR TRANSVERSE DESIGN LOAD (psf)**



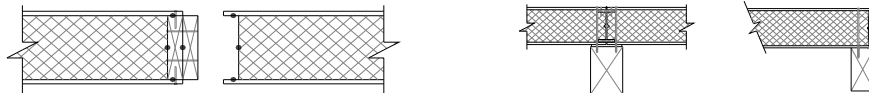
| Thickness |         | Allowable Deflection | SINGLE 2 x LUMBER SPLINES @ 4'-0" On Center |            |            |            |            |            |            |            |            |           |           |           |           |           |           |           |           |
|-----------|---------|----------------------|---|------------|------------|------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| SIP       | EPS     |                      | PANEL SPAN (feet)                           |            |            |            |            |            |            |            |            |           |           |           |           |           |           |           |           |
| 4 1/2"    | 3 5/8"  | L/360                | 94  | 71         | 55         | 43         | 35         | 28         | 23         | 19         | 16         | 14        | 12        | -         | -         | -         | -         | -         | -         |
|           |         | L/240                | 142   | 106        | 82         | 65         | 52         | 42         | 35         | 29         | 24         | 20        | 17        | -         | -         | -         | -         | -         | -         |
|           |         | L/180                | <b>189</b>                                  | <b>142</b> | <b>110</b> | 87         | 70         | 57         | 47         | 39         | 32         | 27        | 23        | -         | -         | -         | -         | -         | -         |
| 6 1/2"    | 5 5/8"  | L/360                | 246   | 181        | 138        | 107        | 84         | 67         | 54         | 45         | 37         | 31        | 26        | 22        | 19        | 16        | 14        | 12        | 11        |
|           |         | L/240                | <b>248</b>                                  | <b>199</b> | <b>165</b> | <b>142</b> | <b>124</b> | 101        | 82         | 67         | 55         | 46        | 39        | 33        | 28        | 24        | 21        | 18        | 16        |
|           |         | L/180                | <b>248</b>                                  | <b>199</b> | <b>165</b> | <b>142</b> | <b>124</b> | <b>110</b> | <b>99</b>  | <b>87</b>  | <b>74</b>  | <b>62</b> | <b>52</b> | 44        | 37        | 32        | 28        | 24        | 21        |
| 8 1/4"    | 7 3/8"  | L/360                | <b>267</b>                                  | <b>214</b> | <b>178</b> | <b>153</b> | 130        | 104        | 84         | 69         | 57         | 48        | 40        | 34        | 29        | 25        | 21        | 19        | 16        |
|           |         | L/240                | <b>267</b>                                  | <b>214</b> | <b>178</b> | <b>153</b> | <b>134</b> | <b>119</b> | <b>107</b> | <b>97</b>  | 86         | 71        | 60        | 51        | 43        | 37        | 32        | 28        | 25        |
|           |         | L/180                | <b>267</b>                                  | <b>214</b> | <b>178</b> | <b>153</b> | <b>134</b> | <b>119</b> | <b>107</b> | <b>97</b>  | <b>89</b>  | <b>78</b> | <b>67</b> | <b>58</b> | <b>51</b> | <b>45</b> | <b>41</b> | <b>36</b> | 33        |
| 10 1/4"   | 9 3/8"  | L/360                | <b>295</b>                                  | <b>236</b> | <b>196</b> | <b>168</b> | <b>147</b> | <b>131</b> | <b>118</b> | 100        | 85         | 72        | 61        | 53        | 45        | 39        | 34        | 30        | 27        |
|           |         | L/240                | <b>295</b>                                  | <b>236</b> | <b>196</b> | <b>168</b> | <b>147</b> | <b>131</b> | <b>118</b> | <b>107</b> | <b>98</b>  | <b>90</b> | <b>78</b> | <b>68</b> | <b>59</b> | <b>53</b> | <b>47</b> | <b>42</b> | <b>38</b> |
|           |         | L/180                | <b>295</b>                                  | <b>236</b> | <b>196</b> | <b>168</b> | <b>147</b> | <b>131</b> | <b>118</b> | <b>107</b> | <b>98</b>  | <b>90</b> | <b>78</b> | <b>68</b> | <b>59</b> | <b>53</b> | <b>47</b> | <b>42</b> | <b>38</b> |
| 12 1/4"   | 11 3/8" | L/360                | <b>322</b>                                  | <b>258</b> | <b>215</b> | <b>184</b> | <b>161</b> | <b>143</b> | <b>129</b> | <b>117</b> | <b>107</b> | 98        | 85        | 74        | 64        | 56        | 50        | 44        | 39        |
|           |         | L/240                | <b>322</b>                                  | <b>258</b> | <b>215</b> | <b>184</b> | <b>161</b> | <b>143</b> | <b>129</b> | <b>117</b> | <b>107</b> | <b>99</b> | <b>91</b> | <b>79</b> | <b>69</b> | <b>61</b> | <b>55</b> | <b>49</b> | <b>44</b> |
|           |         | L/180                | <b>322</b>                                  | <b>258</b> | <b>215</b> | <b>184</b> | <b>161</b> | <b>143</b> | <b>129</b> | <b>117</b> | <b>107</b> | <b>99</b> | <b>91</b> | <b>79</b> | <b>69</b> | <b>61</b> | <b>55</b> | <b>49</b> | <b>44</b> |

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**Notes:**

1. The tabulated values are total design loads for panels with nominal 2" wide bearing at supports based upon design requirements of International Building Code® and International Residential Code®. Values printed in **bold type** are based on panel strength rather than stiffness.
2. The span of a sloped roof panel must be measured along the slope. Design loads are to be calculated as normal loads acting perpendicular to the face of the panel.
3. Insulspan SIP System must be assembled as per Insulspan Installation Guide and recommended assembly details.
4. Acceptable 2x4 or 2x6 lumber for assembly of the Insulspan SIP System is SPF #2 & better; acceptable 2x8, 2x10 or 2x12 lumber is Hem Fir #2 & better.
5. Insulspan SIP skins are nailed to the vertical lumber splines at panel joints using minimum 8d box nails @ 6" on center or equivalent.
6. Insulspan SIP System core material is molded expanded polystyrene (EPS) insulation complying with the requirements of ASTM C 578, type I.
7. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1.
8. Roof panels subject to concentrated roof maintenance live loads must be limited to maximum span of 8 feet for 4 1/2" roof panels, 14 feet for 6 1/2" roof panels and 18 feet for 8 1/4" roof panels
9. An approved thermal barrier, such as 7/16-inch thick wood-based structural-use sheathing, must be installed over the top surface of floor panels.

**Table R-3-DL ROOF AND FLOOR TRANSVERSE DESIGN LOAD (psf)**



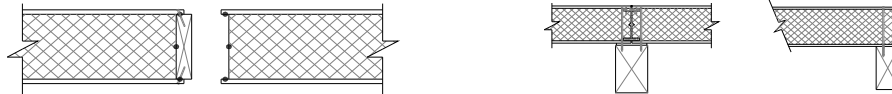
| Thickness |         | Allowable Deflection | DOUBLE 2 x LUMBER SPLINES @ 4'-0" On Center |            |            |            |            |            |            |            |            |            |           |           |           |           |           |           |           |
|-----------|---------|----------------------|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| SIP       | EPS     |                      | PANEL SPAN (feet)                           |            |            |            |            |            |            |            |            |            |           |           |           |           |           |           |           |
|           |         |                      | 4   | 5          | 6          | 7          | 8          | 9          | 10         | 11         | 12         | 13         | 14        | 15        | 16        | 17        | 18        | 19        | 20        |
| 4 1/2"    | 3 5/8"  | L/360                | 162   | 115        | 68         | 54         | 40         | 33         | 26         | 22         | 18         | 15         | 13        | -         | -         | -         | -         | -         | -         |
|           |         | L/240                | <b>195</b>                                  | 147        | 100        | 79         | 59         | 49         | 39         | 33         | 27         | 23         | 20        | -         | -         | -         | -         | -         | -         |
|           |         | L/180                | <b>195</b>                                  | <b>162</b> | <b>129</b> | 103        | 78         | 65         | 52         | 44         | 36         | 31         | 26        | -         | -         | -         | -         | -         | -         |
| 6 1/2"    | 5 5/8"  | L/360                | 246   | 200        | 155        | 119        | 84         | 69         | 55         | 46         | 38         | 32         | 27        | 24        | 21        | 18        | 16        | 14        | 13        |
|           |         | L/240                | <b>248</b>                                  | <b>210</b> | <b>173</b> | <b>148</b> | <b>124</b> | 103        | 82         | 69         | 57         | 49         | 41        | 36        | 31        | 27        | 24        | 21        | 19        |
|           |         | L/180                | <b>248</b>                                  | <b>210</b> | <b>173</b> | <b>148</b> | <b>124</b> | <b>111</b> | <b>99</b>  | <b>87</b>  | <b>74</b>  | 63         | 52        | 47        | 41        | 36        | 32        | 29        | 26        |
| 8 1/4"    | 7 3/8"  | L/360                | <b>267</b>                                  | <b>228</b> | <b>190</b> | 166        | 142        | 115        | 89         | 75         | 62         | 53         | 45        | 39        | 34        | 30        | 26        | 23        | 21        |
|           |         | L/240                | <b>267</b>                                  | <b>228</b> | <b>190</b> | <b>169</b> | <b>148</b> | <b>129</b> | <b>111</b> | <b>100</b> | <b>90</b>  | 78         | 66        | 57        | 49        | 44        | 39        | 35        | 31        |
|           |         | L/180                | <b>267</b>                                  | <b>228</b> | <b>190</b> | <b>169</b> | <b>148</b> | <b>129</b> | <b>111</b> | <b>100</b> | <b>90</b>  | <b>82</b>  | <b>75</b> | <b>69</b> | <b>63</b> | 57        | 51        | 46        | 41        |
| 10 1/4"   | 9 3/8"  | L/360                | <b>295</b>                                  | <b>245</b> | <b>196</b> | <b>190</b> | <b>185</b> | <b>160</b> | <b>136</b> | 116        | 97         | 83         | 70        | 61        | 53        | 47        | 41        | 37        | 33        |
|           |         | L/240                | <b>295</b>                                  | <b>245</b> | <b>196</b> | <b>190</b> | <b>185</b> | <b>160</b> | <b>136</b> | <b>120</b> | <b>105</b> | <b>96</b>  | <b>88</b> | <b>81</b> | <b>75</b> | <b>69</b> | <b>64</b> | 56        | 48        |
|           |         | L/180                | <b>295</b>                                  | <b>245</b> | <b>196</b> | <b>190</b> | <b>185</b> | <b>160</b> | <b>136</b> | <b>120</b> | <b>105</b> | <b>96</b>  | <b>88</b> | <b>81</b> | <b>75</b> | <b>69</b> | <b>64</b> | <b>59</b> | <b>55</b> |
| 12 1/4"   | 11 3/8" | L/360                | <b>322</b>                                  | <b>268</b> | <b>215</b> | <b>202</b> | <b>190</b> | <b>175</b> | <b>161</b> | <b>142</b> | <b>123</b> | <b>111</b> | <b>99</b> | 88        | 78        | 69        | 61        | 54        | 48        |
|           |         | L/240                | <b>322</b>                                  | <b>268</b> | <b>215</b> | <b>202</b> | <b>190</b> | <b>175</b> | <b>161</b> | <b>142</b> | <b>123</b> | <b>111</b> | <b>99</b> | <b>91</b> | <b>84</b> | <b>78</b> | <b>72</b> | <b>67</b> | <b>63</b> |
|           |         | L/180                | <b>322</b>                                  | <b>268</b> | <b>215</b> | <b>202</b> | <b>190</b> | <b>175</b> | <b>161</b> | <b>142</b> | <b>123</b> | <b>111</b> | <b>99</b> | <b>91</b> | <b>84</b> | <b>78</b> | <b>72</b> | <b>67</b> | <b>63</b> |

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5. Insulspan SIP skins are nailed to the vertical lumber splines at panel joints using minimum 8d box nails @ 6" on center or equivalent.
6. Insulspan SIP System core material is molded expanded polystyrene (EPS) insulation complying with the requirements of ASTM C 578, type I.
7. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1.
8. Roof panels subject to concentrated roof maintenance live loads must be limited to maximum span of 10 feet for 4 1/2" roof panels and 16 feet for 6 1/2" roof panels
9. An approved thermal barrier, such as 7/16-inch thick wood-based structural-use sheathing, must be installed over the top surface of floor panels.

**Table R-4-LVL ROOF AND FLOOR TRANSVERSE DESIGN LOAD (psf)**



| Thickness |         | Allowable Deflection | SINGLE LVL SPLINES @ 4'-0" On Center |            |            |            |            |            |            |            |            |            |            |     |     |     |    |    |    |
|-----------|---------|----------------------|--------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----|-----|-----|----|----|----|
| SIP       | EPS     |                      | PANEL SPAN (feet)                    |            |            |            |            |            |            |            |            |            |            |     |     |     |    |    |    |
|           |         |                      | 4                                    | 5          | 6          | 7          | 8          | 9          | 10         | 11         | 12         | 13         | 14         | 15  | 16  | 17  | 18 | 19 | 20 |
| 4 1/2"    | 3 5/8"  | L/360                | 142                                  | 102        | 63         | 49         | 36         | 30         | 24         | 20         | 17         | 14         | 12         | -   | -   | -   | -  | -  | -  |
|           |         | L/240                | <b>189</b>                           | 140        | 92         | 72         | 53         | 44         | 35         | 30         | 25         | 21         | 18         | -   | -   | -   | -  | -  | -  |
|           |         | L/180                | <b>189</b>                           | 154        | 120        | 95         | 70         | 58         | 47         | 40         | 33         | 28         | 24         | -   | -   | -   | -  | -  | -  |
| 6 1/2"    | 5 5/8"  | L/360                | 246                                  | 192        | 138        | 111        | 84         | 69         | 54         | 45         | 37         | 31         | 26         | 22  | 19  | 17  | 15 | 13 | 12 |
|           |         | L/240                | <b>248</b>                           | <b>215</b> | <b>183</b> | 153        | 124        | 103        | 82         | 68         | 55         | 47         | 39         | 33  | 28  | 24  | 21 | 19 | 17 |
|           |         | L/180                | <b>248</b>                           | <b>215</b> | <b>183</b> | 162        | 142        | 120        | 99         | 87         | 74         | 63         | 52         | 44  | 37  | 32  | 28 | 25 | 23 |
| 8 1/4"    | 7 3/8"  | L/360                | <b>267</b>                           | <b>228</b> | <b>190</b> | 160        | 130        | 107        | 84         | 70         | 57         | 48         | 40         | 34  | 29  | 26  | 23 | 20 | 18 |
|           |         | L/240                | <b>267</b>                           | <b>228</b> | <b>190</b> | <b>182</b> | <b>174</b> | 143        | 113        | 99         | 86         | 73         | 60         | 51  | 43  | 38  | 33 | 30 | 27 |
|           |         | L/180                | <b>267</b>                           | <b>228</b> | <b>190</b> | <b>182</b> | <b>174</b> | <b>157</b> | <b>140</b> | 119        | 98         | 84         | 71         | 62  | 54  | 48  | 43 | 38 | 34 |
| 10 1/4"   | 9 3/8"  | L/360                | <b>295</b>                           | <b>245</b> | <b>196</b> | <b>189</b> | <b>183</b> | 153        | 123        | 104        | 85         | 73         | 62         | 54  | 46  | 41  | 36 | 32 | 28 |
|           |         | L/240                | <b>295</b>                           | <b>245</b> | <b>196</b> | <b>189</b> | <b>183</b> | <b>175</b> | <b>167</b> | 144        | 122        | 105        | 89         | 77  | 66  | 58  | 51 | 46 | 41 |
|           |         | L/180                | <b>295</b>                           | <b>245</b> | <b>196</b> | <b>189</b> | <b>183</b> | <b>175</b> | <b>167</b> | <b>156</b> | <b>145</b> | 129        | 114        | 99  | 84  | 74  | 65 | 58 | 52 |
| 12 1/4"   | 11 3/8" | L/360                | <b>322</b>                           | <b>268</b> | <b>215</b> | <b>202</b> | <b>190</b> | <b>184</b> | <b>178</b> | 150        | 123        | 106        | 90         | 78  | 67  | 59  | 52 | 46 | 41 |
|           |         | L/240                | <b>322</b>                           | <b>268</b> | <b>215</b> | <b>202</b> | <b>190</b> | <b>184</b> | <b>178</b> | <b>172</b> | <b>167</b> | 148        | 129        | 113 | 97  | 86  | 75 | 67 | 59 |
|           |         | L/180                | <b>322</b>                           | <b>268</b> | <b>215</b> | <b>202</b> | <b>190</b> | <b>184</b> | <b>178</b> | <b>172</b> | <b>167</b> | <b>157</b> | <b>148</b> | 136 | 124 | 109 | 95 | 85 | 76 |

Revision : January 20, 2014

**Notes:**

1. The tabulated values are total design loads for panels with nominal 2" wide bearing at supports based upon design requirements of International Building Code® and International Residential Code®. Values printed in **bold type** are based on panel strength rather than stiffness.
2. The span of a sloped roof panel must be measured along the slope. Design loads are to be calculated as normal loads acting perpendicular to the face of the panel.
3. Insulspan SIP System must be assembled as per Insulspan Installation Guide and recommended assembly details.
4. Acceptable LVL for assembly of the Insulspan SIP System is 1.8E LVL or better.
5. Insulspan SIP skins are nailed to the vertical LVL splines at panel joints using minimum 8d box nails @ 6" on center or equivalent.
6. Insulspan SIP System core material is molded expanded polystyrene (EPS) insulation complying with the requirements of ASTM C 578, type I.
7. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1.
8. Roof panels subject to concentrated roof maintenance live loads must be limited to maximum span of 8 feet for 4 1/2" roof panels and 14 feet for 6 1/2" roof panels.
9. An approved thermal barrier, such as 7/16-inch thick wood-based structural-use sheathing, must be installed over the top surface of floor panels.

**Table R-5-I ROOF AND FLOOR TRANSVERSE DESIGN LOAD (psf)**



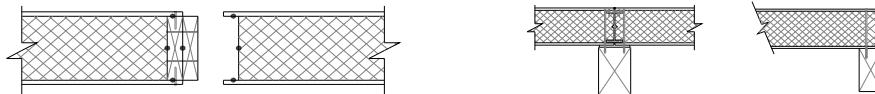
| Thickness |         | Allowable Deflection | WOOD I-JOIST SPLINES @ 4'-0" On Center |            |            |            |            |            |            |            |            |            |           |           |           |           |           |    |    |
|-----------|---------|----------------------|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|----|----|
| SIP       | EPS     |                      | PANEL SPAN (feet)                      |            |            |            |            |            |            |            |            |            |           |           |           |           |           |    |    |
|           |         |                      | 4                                      | 5          | 6          | 7          | 8          | 9          | 10         | 11         | 12         | 13         | 14        | 15        | 16        | 17        | 18        | 19 | 20 |
| 8 1/4"    | 7 3/8"  | L/360                | <b>215</b>                             | <b>195</b> | <b>175</b> | <b>152</b> | <b>130</b> | 107        | 84         | 70         | 57         | 48         | 40        | 34        | 29        | 25        | 22        | 20 | 18 |
|           |         | L/240                | <b>215</b>                             | <b>195</b> | <b>175</b> | <b>152</b> | <b>130</b> | <b>117</b> | <b>105</b> | 95         | 86         | 73         | 60        | 51        | 43        | 38        | 33        | 30 | 27 |
|           |         | L/180                | <b>215</b>                             | <b>195</b> | <b>175</b> | <b>152</b> | <b>130</b> | <b>117</b> | <b>105</b> | <b>97</b>  | <b>90</b>  | 80         | 71        | 62        | 54        | 48        | 43        | 39 | 35 |
| 10 1/4"   | 9 3/8"  | L/360                | <b>290</b>                             | <b>240</b> | <b>190</b> | <b>167</b> | <b>145</b> | <b>132</b> | <b>120</b> | 102        | 85         | 73         | 61        | 53        | 45        | 39        | 34        | 30 | 27 |
|           |         | L/240                | <b>290</b>                             | <b>240</b> | <b>190</b> | <b>167</b> | <b>145</b> | <b>132</b> | <b>120</b> | <b>110</b> | <b>100</b> | <b>90</b>  | <b>80</b> | 70        | 60        | 54        | 48        | 43 | 38 |
|           |         | L/180                | <b>290</b>                             | <b>240</b> | <b>190</b> | <b>167</b> | <b>145</b> | <b>132</b> | <b>120</b> | <b>110</b> | <b>100</b> | <b>90</b>  | <b>80</b> | 79        | 78        | 70        | 62        | 56 | 50 |
| 12 1/4"   | 11 3/8" | L/360                | <b>315</b>                             | <b>257</b> | <b>200</b> | <b>180</b> | <b>160</b> | <b>145</b> | <b>130</b> | <b>120</b> | <b>110</b> | 97         | 85        | 74        | 64        | 57        | 50        | 44 | 39 |
|           |         | L/240                | <b>315</b>                             | <b>257</b> | <b>200</b> | <b>180</b> | <b>160</b> | <b>145</b> | <b>130</b> | <b>120</b> | <b>110</b> | <b>102</b> | <b>95</b> | <b>87</b> | <b>80</b> | 72        | 64        | 58 | 52 |
|           |         | L/180                | <b>315</b>                             | <b>257</b> | <b>200</b> | <b>180</b> | <b>160</b> | <b>145</b> | <b>130</b> | <b>120</b> | <b>110</b> | <b>102</b> | <b>95</b> | <b>87</b> | <b>80</b> | <b>75</b> | <b>70</b> | 67 | 65 |

Revision : January 20, 2014

**Notes:**

1. The tabulated values are total design loads for panels with nominal 2" wide bearing at supports based upon design requirements of International Building Code® and International Residential Code®. Values printed in **bold type** are based on panel strength rather than stiffness.
2. The span of a sloped roof panel must be measured along the slope. Design loads are to be calculated as normal loads acting perpendicular to the face of the panel.
3. Insulspan SIP System must be assembled as per Insulspan Installation Guide and recommended assembly details.
4. Acceptable wood I-joists for assembly of the Insulspan SIP System are Nascor NJH, Jager JSI2000 and Trus Joist TJI 100C or better.
5. Insulspan SIP skins are nailed to the vertical wood I-joist splines at panel joints using minimum 8d box nails @ 6" on center or equivalent.
6. Insulspan SIP System core material is molded expanded polystyrene (EPS) insulation complying with the requirements of ASTM C 578, type I.
7. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1.
8. An approved thermal barrier, such as 7/16-inch thick wood-based structural-use sheathing, must be installed over the top surface of floor panels.

**Table R-6-DLVL ROOF AND FLOOR TRANSVERSE DESIGN LOAD (psf)**



| Thickness |         | Allowable Deflection | DOUBLE LVL SPLINES @ 4'-0" On Center |            |            |            |            |            |            |            |            |            |            |            |            |            |            |     |     |
|-----------|---------|----------------------|--------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----|-----|
| SIP       | EPS     |                      | PANEL SPAN (feet)                    |            |            |            |            |            |            |            |            |            |            |            |            |            |            |     |     |
|           |         |                      | 4                                    | 5          | 6          | 7          | 8          | 9          | 10         | 11         | 12         | 13         | 14         | 15         | 16         | 17         | 18         | 19  | 20  |
| 4 1/2"    | 3 5/8"  | L/360                | <b>200</b>                           | 141        | 82         | 63         | 45         | 36         | 28         | 23         | 19         | 16         | 14         | 12         | 10         | -          | -          | -   | -   |
|           |         | L/240                | <b>200</b>                           | 160        | 121        | 94         | 67         | 54         | 42         | 35         | 29         | 25         | 21         | 18         | 16         | -          | -          | -   | -   |
|           |         | L/180                | <b>200</b>                           | 179        | 158        | 123        | 88         | 72         | 56         | 47         | 39         | 33         | 28         | 24         | 21         | -          | -          | -   | -   |
| 6 1/2"    | 5 5/8"  | L/360                | <b>248</b>                           | <b>215</b> | <b>183</b> | 143        | 104        | 84         | 65         | 54         | 43         | 37         | 31         | 27         | 23         | 20         | 18         | 16  | 14  |
|           |         | L/240                | <b>248</b>                           | <b>215</b> | <b>183</b> | 166        | 150        | 122        | 95         | 79         | 63         | 54         | 45         | 39         | 33         | 29         | 26         | 23  | 21  |
|           |         | L/180                | <b>248</b>                           | <b>215</b> | <b>183</b> | <b>169</b> | <b>156</b> | 140        | 124        | 103        | 82         | 70         | 58         | 51         | 44         | 39         | 34         | 30  | 27  |
| 8 1/4"    | 7 3/8"  | L/360                | <b>267</b>                           | <b>228</b> | <b>190</b> | <b>184</b> | <b>179</b> | 144        | 110        | 92         | 75         | 64         | 53         | 46         | 39         | 34         | 30         | 26  | 23  |
|           |         | L/240                | <b>267</b>                           | <b>228</b> | <b>190</b> | <b>184</b> | <b>179</b> | <b>165</b> | <b>152</b> | 130        | 109        | 93         | 77         | 66         | 56         | 49         | 43         | 38  | 34  |
|           |         | L/180                | <b>267</b>                           | <b>228</b> | <b>190</b> | <b>184</b> | <b>179</b> | <b>165</b> | <b>152</b> | <b>143</b> | <b>135</b> | 117        | 100        | 86         | 73         | 64         | 56         | 50  | 44  |
| 10 1/4"   | 9 3/8"  | L/360                | <b>295</b>                           | <b>245</b> | <b>196</b> | <b>190</b> | <b>185</b> | <b>179</b> | <b>174</b> | 148        | 122        | 104        | 87         | 75         | 64         | 56         | 49         | 43  | 38  |
|           |         | L/240                | <b>295</b>                           | <b>245</b> | <b>196</b> | <b>190</b> | <b>185</b> | <b>179</b> | <b>174</b> | <b>164</b> | <b>154</b> | 140        | 126        | 110        | 94         | 82         | 71         | 63  | 55  |
|           |         | L/180                | <b>295</b>                           | <b>245</b> | <b>196</b> | <b>190</b> | <b>185</b> | <b>179</b> | <b>174</b> | <b>164</b> | <b>154</b> | <b>147</b> | <b>140</b> | 131        | 122        | 107        | 92         | 82  | 72  |
| 12 1/4"   | 11 3/8" | L/360                | <b>322</b>                           | <b>268</b> | <b>215</b> | <b>202</b> | <b>190</b> | <b>186</b> | <b>182</b> | <b>177</b> | <b>172</b> | 151        | 130        | 113        | 97         | 85         | 73         | 65  | 57  |
|           |         | L/240                | <b>322</b>                           | <b>268</b> | <b>215</b> | <b>202</b> | <b>190</b> | <b>186</b> | <b>182</b> | <b>177</b> | <b>172</b> | <b>164</b> | <b>156</b> | 148        | 141        | 125        | 109        | 97  | 85  |
|           |         | L/180                | <b>322</b>                           | <b>268</b> | <b>215</b> | <b>202</b> | <b>190</b> | <b>186</b> | <b>182</b> | <b>177</b> | <b>172</b> | <b>164</b> | <b>156</b> | <b>150</b> | <b>145</b> | <b>141</b> | <b>137</b> | 123 | 110 |

Revision : January 20, 2014

**Notes:**

1. The tabulated values are total design loads for panels with nominal 2" wide bearing at supports based upon design requirements of International Building Code® and International Residential Code®. Values printed in **bold type** are based on panel strength rather than stiffness.
2. The span of a sloped roof panel must be measured along the slope. Design loads are to be calculated as normal loads acting perpendicular to the face of the panel.
3. Insulspan SIP System must be assembled as per Insulspan Installation Guide and recommended assembly details.
4. Acceptable LVL lumber for use with the Insulspan SIP System is 1.8E LVL or better.
5. Insulspan SIP skins are nailed to the vertical double LVL splines at panel joints using minimum 8d box nails @ 6" on center or equivalent.
6. Insulspan SIP System core material is molded expanded polystyrene (EPS) insulation complying with the requirements of ASTM C 578, type I.
7. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1.
8. Roof panels subject to concentrated roof maintenance live loads must be limited to maximum span of 10 feet for 4 1/2" roof panels and 18 feet for 6 1/2" roof panels.
9. An approved thermal barrier, such as 7/16-inch thick wood-based structural-use sheathing, must be installed over the top surface of floor panels.