

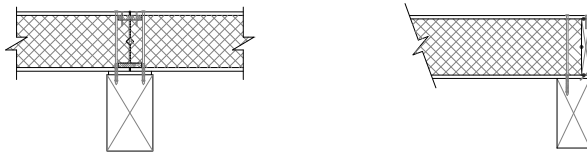
Technical Bulletin

Roof Panel Specified Load Charts National Building Code of Canada 2005 & 2010

Page 1 of 7

This bulletin provides specified load charts for the Insulspan® Structural Insulating Panel (SIP) System used as a roof system component. Specified loads meet all strength and serviceability requirements of the **National Building Code of Canada 2005 and 2010**. For additional information, refer to Insulspan Technical Bulletin 107 which provides a copy of Canadian Construction Materials Centre evaluation report 13016-R.

The attached **Roof Panel Transverse Load** charts dated September 16, 2013 summarize total specified loads for Insulspan SIP roof panels. The tabulated values are total specified loads for panels with minimum 1.5" wide bearing at supports as illustrated.



Load charts for the following joint configurations are provided:

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

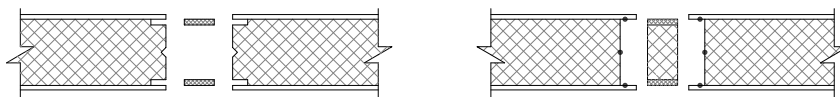


Table R-2-L – Single 2x Lumber

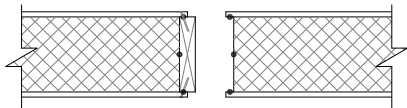


Table R-3-DL – Double 2x Lumber

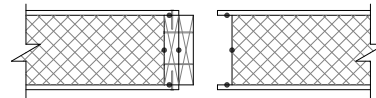


Table R-4-LVL – Single 1.8E LVL

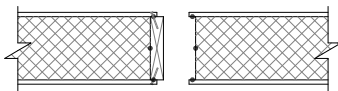


Table R-5-I – Wood I-Joist

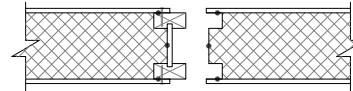


Table R-6-DLVL – Double 1.8E LV

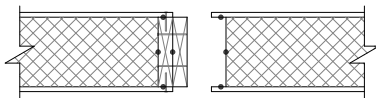


Table R-1-S ROOF PANEL TRANSVERSE LOADS (psf)

| OSB SURFACE SPLINE OR INSULSPLINE JOINTS (TIMBER FRAME STRUCTURES ONLY) | | | | |
|---|---------|----------------------|-------------------|-----------------|
| Thickness | | Allowable Deflection | PANEL SPAN (feet) | |
| SIP | EPS | | 4'-0" Max. Span | 6'-0" Max. Span |
| 4 1/2" | 3 5/8" | L/360 | 43 | 27 |
| | | L/240 | 66 | 42 |
| | | L/180 | 87 | 56 |
| 6 1/2" | 5 5/8" | L/360 | 60 | 40 |
| | | L/240 | 89 | 61 |
| | | L/180 | 112 | 81 |
| 8 1/4" | 7 3/8" | L/360 | 70 | 49 |
| | | L/240 | 100 | 74 |
| | | L/180 | 123 | 95 |
| 10 1/4" | 9 3/8" | L/360 | 78 | 61 |
| | | L/240 | 107 | 88 |
| | | L/180 | 130 | 111 |
| 12 1/4" | 11 3/8" | L/360 | 84 | 64 |
| | | L/240 | 113 | 92 |
| | | L/180 | 136 | 113 |

Notes:

1. Specified loads meet all strength and serviceability requirements of the National Building Code of Canada 2005 and 2010. Load values in the table are total specified loads - i.e. specified live (snow, rain and wind) plus specified dead load.
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 OSB splines at longitudinal panel joints using minimum 8d box nails @ 6" on center or equivalent.
5. Insulspan SIP System core material is moulded expanded polystyrene (EPS) insulation complying with CAN/ULC-S701, type 1.
6. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1 and CAN/CSA-O325.0 (span rating 1R24/2F16).

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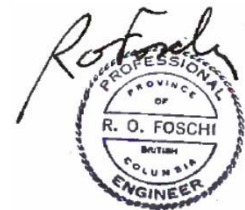
Table R-2-L ROOF PANEL TRANSVERSE LOADS (psf)

| Thickness | | Allowable Deflection | SINGLE 2 x LUMBER SPLINE JOINTS @ 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 | 98 | 72 | 46 | 37 | 28 | 23 | 19 | 16 | 13 | 11 | 10 | - | - | - | - | - | - |
| | | L/240 | 143 | 106 | 70 | 57 | 44 | 37 | 30 | 25 | 21 | 18 | 16 | - | - | - | - | - | - |
| | | L/180 | 149 | 120 | 91 | 74 | 57 | 48 | 39 | 33 | 28 | 24 | 21 | - | - | - | - | - | - |
| 6 1/2" | 5 5/8" | L/360 | 198 | 145 | 93 | 74 | 55 | 45 | 36 | 30 | 24 | 21 | 19 | 17 | 15 | 13 | 11 | 10 | 9 |
| | | L/240 | 201 | 161 | 121 | 101 | 82 | 68 | 55 | 46 | 37 | 33 | 30 | 26 | 23 | 21 | 19 | 17 | 15 |
| | | L/180 | 201 | 161 | 121 | 106 | 92 | 82 | 72 | 60 | 49 | 44 | 39 | 34 | 30 | 27 | 25 | 22 | 20 |
| 8 1/4" | 7 3/8" | L/360 | 209 | 177 | 146 | 115 | 85 | 71 | 57 | 48 | 40 | 34 | 29 | 26 | 23 | 20 | 18 | 16 | 14 |
| | | L/240 | 212 | 179 | 147 | 125 | 104 | 94 | 84 | 72 | 60 | 52 | 45 | 40 | 35 | 31 | 28 | 25 | 23 |
| | | L/180 | 212 | 179 | 147 | 125 | 104 | 94 | 84 | 77 | 70 | 64 | 58 | 51 | 45 | 40 | 36 | 33 | 30 |
| 10 1/4" | 9 3/8" | L/360 | 293 | 239 | 186 | 154 | 122 | 103 | 84 | 72 | 60 | 52 | 44 | 39 | 34 | 30 | 27 | 24 | 22 |
| | | L/240 | 295 | 241 | 188 | 155 | 123 | 108 | 93 | 85 | 78 | 72 | 66 | 58 | 51 | 46 | 41 | 37 | 33 |
| | | L/180 | 295 | 241 | 188 | 155 | 123 | 108 | 93 | 85 | 78 | 72 | 66 | 61 | 57 | 53 | 50 | 46 | 43 |
| 12 1/4" | 11 3/8" | L/360 | 320 | 258 | 196 | 169 | 143 | 123 | 104 | 93 | 83 | 73 | 63 | 55 | 48 | 43 | 38 | 34 | 30 |
| | | L/240 | 322 | 260 | 198 | 171 | 144 | 124 | 105 | 94 | 84 | 78 | 72 | 67 | 62 | 58 | 54 | 50 | 46 |
| | | L/180 | 322 | 260 | 198 | 171 | 144 | 124 | 105 | 94 | 84 | 78 | 72 | 67 | 62 | 58 | 54 | 51 | 48 |

Notes:

1. Specified loads meet all strength and serviceability requirements of the National Building Code of Canada 2005 and 2010. Load values in the table are total specified loads - i.e. specified live (snow, rain and wind) plus specified dead load.
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 2x lumber for assembly of the Insulspan SIP System is SPF #2 or better.
5. Insulspan SIP skins are nailed to the lumber splines at longitudinal panel joints using minimum 8d box nails @ 6" on center or equivalent.
6. Insulspan SIP System core material is moulded expanded polystyrene (EPS) insulation complying with CAN/ULC-S701, type 1.
7. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1 and CAN/CSA-O325.0 (span rating 1R24/2F16).

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Table R-3-DL ROOF PANEL TRANSVERSE LOADS (psf)

| Thickness | | Allowable Deflection | DOUBLE 2 x LUMBER SPLINE JOINTS @ 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 | 135 | 96 | 57 | 45 | 33 | 27 | 21 | 18 | 15 | 13 | 11 | - | - | - | - | - | - |
| | | L/240 | 188 | 137 | 86 | 68 | 51 | 42 | 34 | 29 | 24 | 20 | 17 | - | - | - | - | - | - |
| | | L/180 | 188 | 150 | 112 | 89 | 67 | 56 | 45 | 38 | 32 | 27 | 23 | - | - | - | - | - | - |
| 6 1/2" | 5 5/8" | L/360 | 207 | 168 | 129 | 99 | 70 | 57 | 45 | 38 | 31 | 27 | 23 | 20 | 17 | 15 | 13 | 11 | 10 |
| | | L/240 | 209 | 189 | 170 | 137 | 104 | 86 | 69 | 58 | 48 | 41 | 35 | 31 | 27 | 24 | 21 | 19 | 17 |
| | | L/180 | 209 | 189 | 170 | 144 | 118 | 103 | 89 | 76 | 63 | 54 | 46 | 41 | 36 | 32 | 28 | 25 | 23 |
| 8 1/4" | 7 3/8" | L/360 | 214 | 201 | 189 | 153 | 118 | 96 | 74 | 62 | 51 | 44 | 37 | 32 | 28 | 25 | 22 | 19 | 17 |
| | | L/240 | 217 | 204 | 192 | 168 | 145 | 127 | 109 | 93 | 77 | 66 | 56 | 49 | 43 | 38 | 34 | 30 | 27 |
| | | L/180 | 217 | 204 | 192 | 168 | 145 | 127 | 109 | 99 | 89 | 81 | 73 | 64 | 56 | 50 | 44 | 40 | 36 |
| 10 1/4" | 9 3/8" | L/360 | 293 | 244 | 195 | 185 | 176 | 147 | 119 | 99 | 80 | 69 | 58 | 51 | 44 | 39 | 34 | 30 | 27 |
| | | L/240 | 295 | 246 | 198 | 188 | 179 | 156 | 134 | 119 | 104 | 95 | 87 | 77 | 67 | 59 | 52 | 47 | 42 |
| | | L/180 | 295 | 246 | 198 | 188 | 179 | 156 | 134 | 119 | 104 | 95 | 87 | 80 | 74 | 68 | 63 | 58 | 54 |
| 12 1/4" | 11 3/8" | L/360 | 320 | 259 | 198 | 189 | 181 | 168 | 156 | 137 | 118 | 101 | 85 | 74 | 64 | 57 | 50 | 45 | 40 |
| | | L/240 | 322 | 261 | 201 | 192 | 184 | 170 | 157 | 139 | 121 | 109 | 98 | 90 | 83 | 77 | 72 | 66 | 60 |
| | | L/180 | 322 | 261 | 201 | 192 | 184 | 170 | 157 | 139 | 121 | 109 | 98 | 90 | 83 | 77 | 72 | 67 | 62 |

Notes:

1. Specified loads meet all strength and serviceability requirements of the National Building Code of Canada 2005 and 2010. Load values in the table are total specified loads - i.e. specified live (snow, rain and wind) plus specified dead load.
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 2x lumber for assembly of the Insulspan SIP System is SPF #2 or better.
5. Insulspan SIP skins are nailed to the lumber splines at longitudinal panel joints using minimum 8d box nails @ 6" on center or equivalent.
6. Insulspan SIP System core material is moulded expanded polystyrene (EPS) insulation complying CAN/ULC-S701, type 1.
7. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1 and CAN/CSA-O325.0 (span rating 1R24/2F16).

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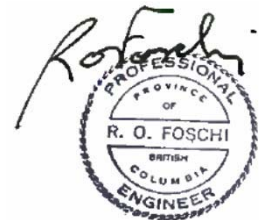
Table R-4-LVL ROOF PANEL TRANSVERSE DESIGN LOADS (psf)

| Thickness | | Allowable Deflection | SINGLE LVL SPLINE JOINTS @ 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 | 118 | 85 | 52 | 41 | 30 | 25 | 20 | 17 | 14 | 12 | 10 | - | - | - | - | - | - |
| | | L/240 | 172 | 125 | 79 | 63 | 47 | 39 | 31 | 26 | 22 | 19 | 17 | - | - | - | - | - | - |
| | | L/180 | 182 | 142 | 103 | 81 | 60 | 50 | 40 | 34 | 29 | 25 | 22 | - | - | - | - | - | - |
| 6 1/2" | 5 5/8" | L/360 | 203 | 157 | 112 | 87 | 63 | 51 | 40 | 34 | 28 | 24 | 20 | 18 | 16 | 14 | 12 | 11 | 10 |
| | | L/240 | 206 | 184 | 163 | 128 | 94 | 77 | 60 | 51 | 42 | 36 | 31 | 27 | 24 | 21 | 19 | 17 | 16 |
| | | L/180 | 206 | 191 | 177 | 149 | 121 | 99 | 77 | 65 | 54 | 47 | 40 | 35 | 31 | 28 | 25 | 23 | 21 |
| 8 1/4" | 7 3/8" | L/360 | 212 | 198 | 185 | 144 | 103 | 84 | 65 | 54 | 44 | 38 | 32 | 28 | 24 | 21 | 19 | 17 | 15 |
| | | L/240 | 215 | 202 | 189 | 169 | 149 | 123 | 97 | 81 | 66 | 57 | 48 | 42 | 37 | 33 | 30 | 27 | 24 |
| | | L/180 | 215 | 202 | 189 | 178 | 167 | 145 | 124 | 104 | 84 | 73 | 62 | 54 | 47 | 42 | 38 | 34 | 30 |
| 10 1/4" | 9 3/8" | L/360 | 293 | 243 | 193 | 177 | 162 | 132 | 102 | 86 | 71 | 61 | 51 | 44 | 38 | 34 | 30 | 27 | 24 |
| | | L/240 | 295 | 245 | 196 | 185 | 175 | 161 | 148 | 126 | 104 | 90 | 76 | 66 | 57 | 51 | 45 | 40 | 36 |
| | | L/180 | 295 | 245 | 196 | 185 | 175 | 167 | 160 | 146 | 133 | 122 | 111 | 91 | 72 | 64 | 57 | 51 | 46 |
| 12 1/4" | 11 3/8" | L/360 | 320 | 259 | 198 | 188 | 178 | 163 | 148 | 125 | 102 | 88 | 75 | 65 | 56 | 49 | 43 | 38 | 34 |
| | | L/240 | 322 | 261 | 200 | 190 | 181 | 175 | 170 | 159 | 148 | 128 | 109 | 96 | 83 | 73 | 64 | 57 | 51 |
| | | L/180 | 322 | 261 | 200 | 190 | 181 | 175 | 170 | 165 | 160 | 150 | 140 | 122 | 105 | 93 | 81 | 73 | 65 |

Notes:

1. Specified loads meet all strength and serviceability requirements of the National Building Code of Canada 2005 and 2010. Load values in the table are total specified loads - i.e. specified live (snow, rain and wind) plus specified dead load.
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 LVL splines at longitudinal panel joints using minimum 8d box nails @ 6" on center or equivalent.
6. Insulspan SIP System core material is moulded expanded polystyrene (EPS) insulation complying CAN/ULC-S701, type 1.
7. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1 and CAN/CSA-O325.0 (span rating 1R24/2F16).

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Table R-5-I ROOF PANEL TRANSVERSE LOADS (psf)

| Thickness | | Allowable Deflection | WOOD I-JOIST SPLINE JOINTS @ 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 |
| 10 1/2" | 9 5/8" | L/360 | 293 | 242 | 191 | 166 | 141 | 115 | 89 | 75 | 62 | 54 | 46 | 40 | 35 | 31 | 27 | 24 | 22 |
| | | L/240 | 295 | 244 | 194 | 185 | 177 | 153 | 129 | 110 | 92 | 80 | 69 | 60 | 52 | 47 | 42 | 38 | 34 |
| | | L/180 | 295 | 244 | 194 | 185 | 177 | 167 | 158 | 138 | 118 | 103 | 88 | 77 | 67 | 60 | 53 | 48 | 43 |
| 12 7/8" | 12" | L/360 | 320 | 255 | 191 | 184 | 178 | 148 | 119 | 101 | 84 | 73 | 62 | 55 | 48 | 42 | 37 | 33 | 30 |
| | | L/240 | 322 | 258 | 194 | 187 | 180 | 173 | 166 | 144 | 122 | 107 | 92 | 81 | 71 | 63 | 56 | 50 | 45 |
| | | L/180 | 322 | 258 | 194 | 187 | 180 | 173 | 166 | 157 | 148 | 132 | 117 | 104 | 91 | 81 | 71 | 64 | 58 |

Notes:

1. Specified loads meet all strength and serviceability requirements of the National Building Code of Canada 2005 and 2010. Load values in the table are total specified loads - i.e. specified live (snow, rain and wind) plus specified dead load.
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 wood I-joist splines at longitudinal panel joints using minimum 8d box nails @ 6" on center or equivalent.
6. Insulspan SIP System core material is moulded expanded polystyrene (EPS) insulation complying with CAN/ULC-S701, type 1.
7. Insulspan SIP System exterior skins are minimum 7/16" thick structural grade oriented strand board (OSB) conforming to DOC PS2, exposure 1 and CAN/CSA-O325.0 (span rating 1R24/2F16).

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Table R-6-DLVL ROOF PANEL TRANSVERSE LOADS (psf)

| Thickness | | Allowable Deflection | PANEL SPAN (feet) | | | | | | | | | | | | | | | | |
|-----------|---------|----------------------|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| SIP | EPS | | 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 | 168 | 118 | 68 | 53 | 38 | 31 | 24 | 20 | 16 | 13 | 11 | - | - | - | - | - | - |
| | | L/240 | 194 | 148 | 102 | 80 | 58 | 47 | 37 | 31 | 26 | 22 | 19 | - | - | - | - | - | - |
| | | L/180 | 194 | 163 | 133 | 104 | 75 | 61 | 48 | 41 | 34 | 29 | 25 | - | - | - | - | - | - |
| 6 1/2" | 5 5/8" | L/360 | 210 | 185 | 160 | 122 | 85 | 69 | 54 | 45 | 36 | 30 | 25 | 22 | 19 | 17 | 15 | 13 | 11 |
| | | L/240 | 213 | 200 | 187 | 156 | 126 | 103 | 81 | 67 | 54 | 46 | 38 | 34 | 30 | 26 | 23 | 21 | 19 |
| | | L/180 | 213 | 200 | 187 | 174 | 162 | 133 | 105 | 87 | 70 | 60 | 50 | 44 | 38 | 34 | 30 | 27 | 24 |
| 8 1/4" | 7 3/8" | L/360 | 215 | 202 | 190 | 168 | 147 | 119 | 91 | 76 | 62 | 53 | 44 | 38 | 32 | 28 | 24 | 21 | 19 |
| | | L/240 | 218 | 205 | 193 | 183 | 174 | 154 | 134 | 113 | 92 | 79 | 66 | 57 | 49 | 43 | 38 | 34 | 30 |
| | | L/180 | 218 | 205 | 193 | 183 | 174 | 166 | 159 | 139 | 119 | 102 | 85 | 74 | 63 | 56 | 49 | 44 | 39 |
| 10 1/4" | 9 3/8" | L/360 | 293 | 244 | 195 | 186 | 177 | 163 | 149 | 124 | 100 | 86 | 72 | 62 | 53 | 46 | 40 | 36 | 32 |
| | | L/240 | 295 | 246 | 198 | 189 | 180 | 174 | 169 | 158 | 147 | 127 | 107 | 93 | 80 | 70 | 61 | 54 | 48 |
| | | L/180 | 295 | 246 | 198 | 189 | 180 | 174 | 169 | 164 | 160 | 140 | 121 | 112 | 103 | 90 | 78 | 70 | 62 |
| 12 1/4" | 11 3/8" | L/360 | 320 | 260 | 200 | 191 | 183 | 177 | 172 | 159 | 147 | 127 | 107 | 93 | 80 | 71 | 62 | 55 | 48 |
| | | L/240 | 322 | 262 | 202 | 193 | 185 | 180 | 175 | 170 | 166 | 161 | 157 | 138 | 119 | 105 | 92 | 82 | 72 |
| | | L/180 | 322 | 262 | 202 | 193 | 185 | 180 | 175 | 170 | 166 | 163 | 161 | 157 | 153 | 136 | 119 | 106 | 93 |

Notes:

1. Specified loads meet all strength and serviceability requirements of the National Building Code of Canada 2005 and 2010. Load values in the table are total specified loads - i.e. specified live (snow, rain and wind) plus specified dead load.
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 use with the Insulspan SIP System is 1.8E LVL or better.
5. Insulspan SIP skins are nailed to the LVL splines at longitudinal panel joints using minimum 8d box nails @ 6" on center or equivalent.
6. Insulspan SIP System core material is moulded expanded polystyrene (EPS) insulation complying with CAN/ULC-S701, type 1.
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