

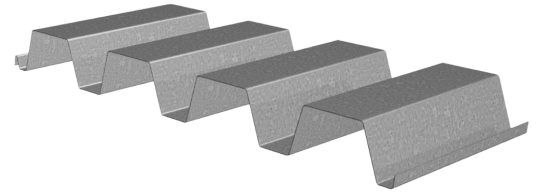
# 3NL-32/3NI-32/3PLN-32 ROOF DECKS

## GRADE 80 STEEL

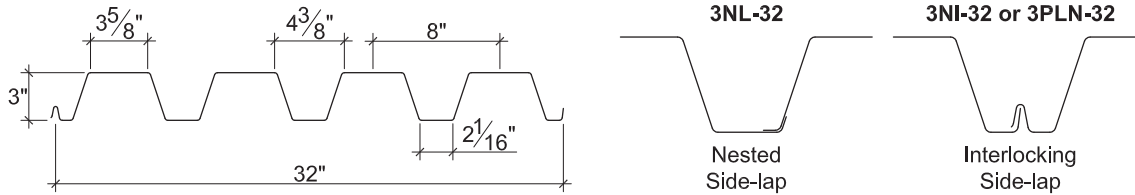
ASD

### 32" WIDE 3N ROOF DECKS

- 3NL-32 Deck used with Side-lap Screws
- 3NI-32 Deck used with TSWs or BPs
- 3PLN-32 Deck used with PunchLok® II System



### Nominal Dimensions



### Section Properties

| Deck Gage | Deck Weight<br>$w_{dd}$<br>(psf) | Base Metal Thickness<br>$t$<br>(in.) | Yield Strength<br>$F_y$<br>(ksi) | Effective Moment of Inertia<br>at Service Load<br>$I_d = (2I_e + I_g)/3$ |                                   | Effective Section Modulus<br>at $F_y = 60$ ksi |                                   | Allowable Moment              |                               | Vertical Web Shear<br>$V_n/\Omega$<br>(lb/ft) |
|-----------|----------------------------------|--------------------------------------|----------------------------------|--|-----------------------------------|--|-----------------------------------|-------------------------------|-------------------------------|---|
|           |                                  |                                      |                                  | $I_{d+}$<br>(in <sup>4</sup> /ft)  | $I_{d-}$<br>(in <sup>4</sup> /ft) | $S_{e+}$<br>(in <sup>3</sup> /ft)              | $S_{e-}$<br>(in <sup>3</sup> /ft) | $M_{n+}/\Omega$<br>(lb-ft/ft) | $M_{n-}/\Omega$<br>(lb-ft/ft) |   |
| 22        | 1.8                              | 0.0295                               | 60                               | 0.635  | 0.707                             | 0.335  | 0.346                             | 1003                          | 1036                          | 2176  |
| 20        | 2.2                              | 0.0358                               | 60                               | 0.794  | 0.876                             | 0.434  | 0.463                             | 1299                          | 1386                          | 3899  |
| 19        | 2.6                              | 0.0418                               | 60                               | 0.950  | 1.040                             | 0.536  | 0.563                             | 1605                          | 1686                          | 5616  |
| 18        | 2.9                              | 0.0474                               | 60                               | 1.103  | 1.195                             | 0.637  | 0.659                             | 1907                          | 1973                          | 7227  |

### Allowable Reactions at Supports Based on Web Crippling, $R_n/\Omega$ (lb/ft)

| Deck Gage | Bearing Length of Webs |      |      |      |                  |      |                    |      |      |      |                  |      |
|-----------|------------------------|------|------|------|------------------|------|--------------------|------|------|------|------------------|------|
|           | One-Flange Loading     |      |      |      |                  |      | Two-Flange Loading |      |      |      |                  |      |
|           | End Bearing            |      |      |      | Interior Bearing |      | End Bearing        |      |      |      | Interior Bearing |      |
|           | 1 1/2"                 | 2"   | 3"   | 4"   | 4"               | 8"   | 1 1/2"             | 2"   | 3"   | 4"   | 4"               | 8"   |
| 22        | 643                    | 707  | 814  | 904  | 1422             | 1653 | 610                | 657  | 736  | 802  | 1656             | 1944 |
| 20        | 929                    | 1017 | 1166 | 1292 | 2036             | 2522 | 946                | 1016 | 1132 | 1231 | 2417             | 3035 |
| 19        | 1244                   | 1359 | 1552 | 1716 | 2709             | 3410 | 1334               | 1428 | 1586 | 1719 | 3257             | 4165 |
| 18        | 1576                   | 1718 | 1957 | 2159 | 3416             | 4279 | 1756               | 1876 | 2077 | 2246 | 4145             | 5276 |

### Standard Features

- ASTM A653 SS GR80, with G60 or G90, white or gray primer optional
- ASTM A1008 SS GR80 with gray primer
- Standard lengths – 6'-0" to 42'-0"
- IAPMO UES ER-0652, UL, and FM Listed
- Tables conform to ANSI/SDI RD-2017

### Optional Features

- Inquire regarding cost and lead times for:
  - Short cuts < 6'-0"
  - Sheet Lengths > 42'-0"
  - Alternative metallic and painted finishes
- Web Perforated Acoustical Versions

# 3NL-32/3NI-32/3PLN-32 ROOF DECKS

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### Inward Uniform Allowable Loads, ASD (psf)

| Deck Gage | Spans  | Criteria       | Span (ft-in.) |       |       |       |        |        |        |        |        |        |        |
|-----------|--------|----------------|---------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|
|           |        |                | 4'-0"         | 6'-0" | 8'-0" | 9'-0" | 10'-0" | 11'-0" | 12'-0" | 14'-0" | 16'-0" | 18'-0" | 20'-0" |
| 22        | Single | $W_n / \Omega$ | 501           | 223   | 125   | 99    | 80     | 66     | 56     | 41     | 31     | 25     | 20     |
|           |        | L/240          | ---           | 193   | 81    | 57    | 42     | 31     | 24     | 15     | 10     | 7      | 5      |
|           | Double | $W_n / \Omega$ | 445           | 214   | 124   | 99    | 81     | 67     | 56     | 42     | 32     | 25     | 21     |
|           |        | L/240          | ---           | ---   | ---   | ---   | ---    | ---    | ---    | 41     | 27     | 19     | 14     |
|           | Triple | $W_n / \Omega$ | 527           | 260   | 152   | 122   | 100    | 83     | 70     | 52     |        |        |        |
|           |        | L/240          | ---           | ---   | ---   | 120   | 88     | 66     | 51     | 32     |        |        |        |
| 20        | Single | $W_n / \Omega$ | 650           | 289   | 162   | 128   | 104    | 86     | 72     | 53     | 41     | 32     | 26     |
|           |        | L/240          | ---           | 241   | 102   | 71    | 52     | 39     | 30     | 19     | 13     | 9      | 7      |
|           | Double | $W_n / \Omega$ | 633           | 295   | 169   | 134   | 109    | 90     | 76     | 56     | 43     | 34     | 28     |
|           |        | L/240          | ---           | ---   | ---   | ---   | ---    | ---    | ---    | 50     | 34     | 24     | 17     |
|           | Triple | $W_n / \Omega$ | 764           | 363   | 209   | 167   | 136    | 112    | 95     | 70     |        |        |        |
|           |        | L/240          | ---           | ---   | ---   | 149   | 108    | 81     | 63     | 40     |        |        |        |
| 19        | Single | $W_n / \Omega$ | 802           | 357   | 201   | 158   | 128    | 106    | 89     | 66     | 50     | 40     | 32     |
|           |        | L/240          | ---           | 288   | 122   | 85    | 62     | 47     | 36     | 23     | 15     | 11     | 8      |
|           | Double | $W_n / \Omega$ | 789           | 363   | 207   | 164   | 133    | 110    | 93     | 68     | 52     | 41     | 34     |
|           |        | L/240          | ---           | ---   | ---   | ---   | ---    | ---    | ---    | 60     | 40     | 28     | 21     |
|           | Triple | $W_n / \Omega$ | 961           | 448   | 257   | 204   | 166    | 137    | 116    | 85     |        |        |        |
|           |        | L/240          | ---           | ---   | 251   | 177   | 129    | 97     | 74     | 47     |        |        |        |
| 18        | Single | $W_n / \Omega$ | 954           | 424   | 238   | 188   | 153    | 126    | 106    | 78     | 60     | 47     | 38     |
|           |        | L/240          | ---           | 335   | 141   | 99    | 72     | 54     | 42     | 26     | 18     | 12     | 9      |
|           | Double | $W_n / \Omega$ | 934           | 428   | 243   | 193   | 156    | 129    | 109    | 80     | 61     | 49     | 39     |
|           |        | L/240          | ---           | ---   | ---   | ---   | ---    | ---    | ---    | 69     | 46     | 32     | 24     |
|           | Triple | $W_n / \Omega$ | 1141          | 529   | 302   | 240   | 195    | 161    | 136    | 100    |        |        |        |
|           |        | L/240          | ---           | ---   | 289   | 203   | 148    | 111    | 86     | 54     |        |        |        |

#### Notes:

1. Table does not account for web crippling. Required bearing should be determined based on specific span conditions.
2. The symbol "---" indicates that the uniform allowable load based on deflection exceeds the allowable load based on stress.

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